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Nudging Consumers toward Better Buying Decisions in a Supermarket

Case Study: Numidis -UNO-

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*“Education is not the learning of facts but
The training of the mind to think”
-Albert Einstein-*

I dedicate this humble work to:

To my mother “Malika”, a woman like no other, she gave me life, taught me, fought for me but most importantly loved me unconditionally. There are not enough words that can be used to describe how important my mother was to me, and what a powerful influence she continues to be. May Allah grant you a place in his vast paradise.

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It seems to be the case that many people would like to eat healthy, but few of them are actually able to adapt this behavior. At the same time, promoting healthy nutrition behaviors still relies mostly on health education techniques that try to motivate people to adopt more healthy lifestyles. It has been argued that interventions to promote more healthy nutrition practices should therefore try to adjust the environments in which decisions are made. Especially the concept of nudging has become increasingly popular in this regard.

Nudging healthier choices in the supermarket as a means to push the population to make healthy choices can be an effective strategy. Although it may not specifically attract people who are less capable and less motivated to make healthy choices. Nudging healthier choices in the supermarket seems to have the potential to improve customer loyalty among customers who are motivated to make healthy choices.

Key words: behavioral economics, Biases and heuristics, duel system, framing effect, decision-making.

Résumé:

Il semble qu'il existe de nombreuses personnes souhaitent manger sainement, mais peu sont celles qui sont capables d'adapter ce comportement. Parallèlement, la promotion de comportements nutritionnels sains se base essentiellement sur des techniques d'éducation à la santé qui tentent d'inciter les gens à adopter des modes de vie plus sains. Il a été avancé que les interventions visant à promouvoir des pratiques nutritionnelles plus saines devraient donc essayer d'ajuster les environnements dans lesquels les décisions sont prises. Surtout le concept de nudging est devenu de plus en plus populaire à cet égard.

Promouvoir des choix plus sains dans les supermarchés comme moyen de pousser la population à faire des choix sains peut être une stratégie efficace. Bien que cela n'attire pas spécifiquement les personnes moins capables et moins motivées à faire des choix sains. Promouvoir des choix plus sains dans les supermarchés semble avoir le potentiel d'améliorer la fidélité des clients qui sont motivés à faire des choix sains.

Mots clés: économie comportementale, biais et heuristique, système de duel, effet de cadrage, prise de décision.

As the market has changed, the company orientation towards the market place has changed too.

There are basically five orientations which a company may apply while targeting a market:

- Production concept.
- Selling concept.
- Product concept.
- Marketing concept.
- Societal marketing concept.

“The societal marketing concept leads to a company orientation which believes in giving back to the society what it had received from the society. This concept believes that the company is profiting because of society and hence it should also take measures to make sure that the society also benefits from the company”. That's why this concept gives a big importance to the study of the consumer behavior.

The ultimate aim of every Marketer is to improve lifestyle of consumers by satisfying their needs and also by making sure that their decisions are positive.

The study of consumers' behavior has become an important step in the analysis and practice of marketing. Its contributions are essential to both strategic thinking and operational marketing. It helps firms and organizations to improve their marketing strategies by understanding issues such as how customers are influenced by their environment or how marketers can adapt and improve their marketing campaigns and marketing strategies to more effectively reach the consumer.

One of the most effective ways to improve the consumers' decision making is The Nudge marketing.

Nudge marketing can be defined as the use of nudges to influence consumer behavior and achieve marketing goals. A nudge is a boost or a gentle incentive (a small push) that influences the behavior of an individual or consumer. These nudges can be a push to motivate customers, for example to practice sports and eat healthy food or even to participate in protecting the environment.

The nudge marketing is a strategy that assures the change of bad habits that might influence the consumer's lifestyle in a bad way. It is a current theme that helps consumers to change their behaviors by providing new ways for a better life.

Nudging tries to turn people into a particular choice, it is less compelling than imposing rules or prohibitions. People still make their own choices and will ultimately have a positive feeling about these choices.

Nudge is a concept in behavioral science and economics which proposes positive reinforcements and indirect suggestions as ways to influence the behavior and decision making of groups or individuals, so in order for any companies to use this concept, they need to understand the way consumers think and react, and they need to be aware of all the aspects and concepts of this strategy.

Hundreds of studies confirm that human forecasts are flawed and biased, human decision making is not so great either, a lot of research have set principals showing that humans aren't rational enough, they involve many intellectual shortcuts that don't equip them well for making complex decisions.

Many researchers like R.Thaler and C.Sunstein argue that behavioral change can be created by manipulating people's innate biases and heuristics; they set out the idea of choice architecture, where the circumstances around a particular choice are altered to affect its outcome. In order to influence these circumstances, researchers should understand how these individuals think so they can provide for them the best alternatives to make good decisions, and can change their lives for the better, almost

without them knowing it.

In this modern world, people are trying to change their bad lifestyle habits and turn them into good ones; one of these habits is eating healthier. The majorities indicate that eating healthy is important for them but not everyone is actually able to adhere to these intentions. At the same time, promoting healthy nutrition behaviors still relies mostly on health education techniques that try to motivate people to adopt healthier lifestyle, but this technique won't be enough to motivate people to this behavior. To promote healthy eating, people should be motivated to do so, should preferably be exposed to environments that offer them easy opportunities, and should be confident about their abilities. It has been argued that the food decisions that people make are not always rational, instead suggesting that the environment they live in has a large influence on many of the unhealthy food choices, so how can supermarkets improve consumers decision making by using nudge? In other words:

How a commercial institution like a supermarket could use and promote nudging in a way that would keep the trust of consumers?

Two sub-questions will be dealt with:

1- Does one's healthy behavior rely on personal relevance, social pressure and social status?

2- Can nudge be applied on consumers who are not interested in eating healthy food?

Two hypotheses are being tested in this work:

1-Overt healthy behavior depends on personal relevance and behavioral intention.

2- Nudge only works when consumers are not motivated to exert healthy behavior.

In order to test these hypotheses, a study will be conducted, an online and face to face administrated questionnaire, and the framing of the benefits of a set of nudges will be manipulated. The nudges will be presented as a benefit for the consumer for half of the participants, while the nudges are presented as a benefit for the supermarket for the other half of the participants. Subsequently, the participants are also going to be asked to give their opinion on the personal relevance of certain nudges that could be introduced in the supermarket.

The aim of this research is to identify the most important concepts of behavioral theories, which will make it easier to apply this nudge theory in the future.

A lot of reasons can be mentioned to justify choosing this subject:

by dealing with this topic, marketers will be able to understand their clients and identify exactly what they need and what they're willing to change. It can also be benefit to the companies, by adding more value to the brand image and therefore can help increasing sales and profits.

During the process of this study, we faced a lot of difficulties, but the most important one was the lack of documentations dealing with this topic.

This humble work will contain three chapters:

Chapter one will be dealing with the most important topics that can help in understanding people's inner mind, behaviors and their way of seeing the world and detailed explanations about the basic factors that could help at identifying people's way of thinking and will give a clear image about their behaviors and actions.

Chapter two aims to identify the most important factors that will lead consumer decision to either buying or not buying, and what kind of process that they will follow in order to come up with the best option that will satisfy their needs and desires.

Chapter three which is the empirical part where the study will explore the potential of nudging healthier choices in a supermarket settings, by exploring the factors that can explain the perceived personal relevance of nudging healthier choices in the supermarket. The study will be applied in Numidis "UNO" supermarket.

Introduction:

In an ideal world, people's decision making would be the results of a careful process of thinking about costs and benefits and make optimal decisions.

Hundreds of studies confirmed that human forecasts are flawed and biased, human decision making is not so great either, and they are not as rational as they think they are. People have evolved many intellectual shortcuts that don't equip them well for making complex decisions.

Many researchers argue that behavioral change can be created by playing to people's innate biases and heuristics, by introducing a new idea which is "choice architecture" which is the design of different ways in which choices can be presented to consumers, and the impact of that presentation on consumer decision-making, and the circumstances around a particular choice are altered to affect its outcome. The more the way of people thinking is understandable, the better able for them to make informed decisions that will be good for them.

One of the most effective ways to influence people's choices and change their lives for the best, almost without them knowing it, is by nudging them toward better decision making.

This concept is a way to encourage people to make decisions that are broad self-interest; it's about making it easier for them to make a certain decision. Nudge revealed many eye-opening examples of how society could be nudged in the right direction, without affecting people's freedom to make choices.

In order to apply this strategy in the real world and guide people to make decisions that are in their own best interest, marketers have to know what can affect their thoughts and mood and understand how people think.

This chapter will be dealing with the most important topics that can help in understanding people's inner mind, behaviors and their way of seeing the world.

Three sections will be included in this chapter, which are:

- Section 01: basic topics of behavioral economics.
- Section 02: dual system theory.
- Section 03: heuristics and biases.

Each section will contain detailed explanations about the basic factors that could help at identifying people's way of thinking and will give a clear image about their behaviors and actions.

Section 01: Behavioral Economics

Rory Sutherland a British co-founder of the behavioral sciences practice once said: “in the economist's mind, people are calculating rationalists, merely seeking to maximize their own utility in a world of perfect information. In fact, the human is far less a rational calculating machine than an anxious, moralizing, and story-telling game theorist.”

People make the assumption that they are acting rationally, in other words they make their choices in order to maximize the total satisfaction or the total utility they get from buying and consuming goods and services, and maximize their profits by seeking to supply goods and services at the lowest costs. This assumption of maximizing behavior and pure rationality is something that dominated conventional economic thinking for a long time, but now is being challenged by behavioral economics.

1. Definition:

Economics, like any other social science is concerned with developing theories whose ultimate goal is to help understanding the world in which we live in. This is done by describing and explaining relationships between economic phenomena and people's nature and actions. This is where behavioral economics is relevant and applied.

“Behavioral economics increases the explanatory power of economics by providing it with more realistic psychological foundations” (Colin, Loewenstein, G, & Matthew, R, 2004).

It studies how people actually make their choices and shows the relation between psychology and decision-making processes of individuals.

Explanatory means demonstrative, intended to serve as an explanation.

Behavioral economics attempts to explore why people make irrational decisions, and emphasizes why and how much their behavior does not follow the predictions of classical economics models. It is a discipline that combines insights from the fields of psychology, economics, judgments, decision making to understand, predict, and try to change human behavior in a way that is more powerful than any one of those fields could provide on its own.

Most of the ideas in behavioral economics are not new, they return to the roots of neoclassical economics. It all started with Adam Smith who proposed psychological explanations of individual behavior in his book “The Theory of Moral Sentiments, which laid out psychological principles of individual behavior.

Economics psychology emerged in the 20th century through the works of many economists, where their models and theories began to gain acceptance.

The methods used in behavioral economics are the same used in other fields of economics; they relied on evidence and proof generated by experiments. However, behavioral economics have moved beyond experimentation to a new range of methods such as field experiments, computer simulation.

The main objective of behavioral economics is to modify and enrich economic theory by adding insights from psychology. It guides people to make decisions that are in their own best interest and attempts to guide them toward healthier behaviors.

The field of behavioral economics classifies research into two

categories: “Judgment research which deals with the processes that people use to estimate probabilities, and choices which deal with the processes people use to select among actions.” (Colin, Loewenstein, G., & Matthew, R., 2004)

2. Basic topics of behavioral economics:

Somewhere between economics and psychology is a rapidly growing field known as behavioral decision theory which studies how people make choices in life and analyzes the empirical evidence of people’s actions and attempts to make sense of how they decide to do the things they do, rather than forming judgments about how they *should* act. This concept is known as the “prospect theory”.

2.1. Prospect theory:

Prospect theory is a behavioral model that shows how people decide among alternatives that involve risk and uncertainty. It was developed by framing risky choices and shows that people think in terms of expected utility relative to a reference point rather than absolute outcomes.

Amos Tversky and Daniel Kahneman proposed that losses cause greater emotional impact on an individual than does an equivalent amount of gain; it means that when people are given two different choices with the same results, they will choose the option offering perceived gains. It explains people’s attitudes toward gains, losses and willingness to take risks.

For example, thinking in a normal way, it is obvious that the amount of utility in gaining \$50 should be equal to gaining \$100 and then losing \$50. In both situations, the end result is a net gain of \$50. Despite this fact, people see that receiving \$50 is good than receiving \$100 and then losing \$50.

One of prospect theory’s primary underlying themes is the relativity in perceptions people have when evaluating monetary gains and losses. People notice changes in values much more than they pay attention to the absolute figures at any particular point in time. For example, a person earns annual compensation of \$60,000 a year, then suddenly loses his job and he is only able to find a new job for \$30,000 annually. The change in the amount actually received, which is \$30,000 compared to the amount that was expected, equal or more than \$60,000, is what affects the person’s evaluation of a gain or a loss.

Prospect theory describes two phases in the choice process:

- An initial phase called the editing phase where acts and outcomes are framed. It refers to the way people characterize options for choice, people decide which outcome they consider equivalent, set a reference point and then consider lesser outcomes as losses and greater ones as gains.
- A subsequent phase of evaluation: based on potential outcomes and their probabilities, people will choose the alternative having a higher value (utility).

For example, people suffering from cancer have two choices for treatment: surgery or chemotherapy, and then they will choose based on how these two outcomes (choices), in terms of survival or mortality, were presented.

2.2. Loss aversion:

Loss aversion refers to people’s tendency to avoid losses to acquire equivalent gains. It was first proposed by Amos Tversky and Daniel Kahneman in 1984. It involves the level of pain people feel when losing something, compared to the thrill they sense when receiving it. For example, a wealthy businessman with a wealth of \$100 million loses half of his money on a bad investment may feel poverty stricken. While another person who gains a \$50 million will feel like the wealthiest person on earth. Both people here share the same amount of net worth of \$50 million each, it is the divergent perceptions

held by the two of them of a monetary loss or gain that accounts for their differing views.

Loss aversion was proposed as an explanation for the endowment effect which is defined as “the fact that people place a higher value on a good that they own than on an identical good that they do not own” (Kahneman & Richard H. Thaler, 1990), and explained by three paradigms.

First, in a valuation paradigm, people will tend to pay more to retain something they own than to obtain something they do not own. Second, in an exchange paradigm, people who have been given a good will hesitate to trade it for another good of similar value. Third which is more controversial paradigm; people who are randomly assigned to receive a good (owners) evaluate it more positively than people who do not have it.

One of the most famous examples of the endowment effect is from a study by Kahneman, D. et al, in 1990, where participants were given a mug of coffee and then, they were asked to sell it or trade it for an alternative of equal value. They found that the amount required as compensation from participants (who were the owners of the mug after it was given to them) was approximately twice as high as the amount of others who were willing to buy it.

Another important principle is status quo bias, an emotional bias for the current state taken as a reference point; it can cause individuals to make seemingly non-rational decisions to stay with a sub-optimal situation. People judge good things and bad things in relative terms as gains and losses relative to their current situation.

For example, over a lifetime, it is rational to save for a pension. However, some individuals may change their current situation and use their savings. This refusal to save the pension for now is related to a present situation bias (preference to maximize the current utility).

2.3. Framing effects:

“The framing effect is a cognitive bias in which diverging results tend to be produced from the same choice problem when being described differently” (Bourgeois-Gironde, Sacha, & Raphael Giraud, 2009). Framing a question means offering or asking it in different ways in order to get different responses.

People’s decision-making can be very sensitive because they evaluate situations in terms of gains and losses, they use mental frame to evaluate the outcomes. People react to a particular choice in different ways depending on how it is represented, “they tend to avoid risk when a positive frame is presented but seek risk when a negative frame is presented” (Tversky & David Kahneman, 1981)

An anti-smoking campaign shows the dangerous effects of cigarettes by displaying images of cancer patients who rely on machines to breathe and use artificial voice to speak. This is framing for negative effects (loss framing).

On the other side from loss framing is “gain framing”, just like dental care advertisements for example where they show the benefits of routine dental care: sparkling white teeth and fresh breath.

2.4. Reference dependence:

Reference dependence is one of the fundamental principles of behavioral economics. In reference dependence people evaluate outcomes relative to a reference point, and then classify gains and losses. It can be applied to any decision involving risk and uncertainty.

One of the most important types of reference dependence is the reflection effect (reference), it explains that people have opposite risk preferences for uncertain choices, depending on whether the results is a possible gain or a loss. This effect shows that when a person gains something, the ambiguity and risk aversion biases are right. But

when that person loses something he or she prefers to take risks that might mitigate the loss. This risk-averse versus risk-seeking is called the reflection effect.

In order to understand this clearly, one of the studies of A. Tversky and D. Kahneman, in their article “The framing of decisions and the psychology of choice” in 1981 will be discussed.

The survey question was that the United States is preparing for an outbreak of a disease expected to kill 600 people. There are two different ways to combat this disease.

Scenario 1: Two choices are available to the study group. In choice A, 200 people will live. In choice B there is a 1 in 3 chance that everyone will live, and 2 in 3 chances that nobody will live.

Under these choices, most people were risk averse, and chose A to save 200 people no matter what. (72% chose A while 28% chose B).

Scenario 2: For a second study group, the same question was presented but with different choices. In choice C, 400 people will die. In choice D, there is a 1 in 3 chance that nobody will die, and a 2 in 3 chance that 600 people will die.

Now under these circumstances, most people were risk takers, in that they would rather take the risk on everyone living than on 400 people dying for sure (78% chose D equivalent of B, while 22% chose C equivalent of A).

In reality, both scenarios lead to the same expected outcome. Choices A and C are identical, as are choices B and D. The way in which these questions are presented to an individual greatly affects the decision making process. This shows a weakness in the ability of individuals to make rational decisions.

This study confirms that people are risk seeking when the choice is between a certain loss and a potential larger loss, and risk averting when they have to choose between a certain gain and a potential larger gain.

Figure 1 Fourfold Pattern for risk aversion or risk seeking

	Significant Gains	Significant Losses
High Probability	<p>Risk Averse (under-weigh potential benefit)</p> <p>Fear of Disappointment</p>	<p>Risk Seeking (under-weigh potential harm)</p> <p>Desperate to recoup loss</p> <p>Continue gambling</p>
Low Probability	<p>Risk Seeking (over-weigh potential benefit)</p> <p>Hope for large gains</p> <p>Product choice</p>	<p>Risk Averse (over-weigh potential harm)</p> <p>Fear of large loss</p> <p>Buy insurance</p>

Source: Thinking, Fast and Slow p:614

Figure 1 represents the fourfold patter for risk aversion or risk seeking; it can help in predicting people’s risk attitudes.

Left upper box: represents practices that present high probabilities of significant benefits. In health terms, the risk in this box may refer to the high probability of significant health benefits. For example, patients who feel comfortable with their health may refuse to quit smoking, and doctors may not even stress the patients to quit smoking. When people are happy with their status quo they will tend to discount this

probability or even ignore it.

Right upper box: this box is about situations that carry high risk for significant losses. Just like gamblers who have experienced significant losses will often continue to gamble in order to recoup losses rather than stopping.

We can also find people who seek dangerous in this box, like parents of an autistic child for example. They will seek dangerous ways of therapies. In order for their child to heal, they are willing to purchase glimmers of hope in the face of certain loss even if the glimmers are illusions.

Left lower box: in this box we see practices that carry a very low probability for significant gains, like choosing a new product for a slim chance of a big satisfaction. For example, people are willing to pay much more than expected value of money, to eliminate anxiety and purchase peace of mind.

Right lower box: describes risk aversion to perceived threats situations that are low in relative probability but are associated with hazard. When people find themselves facing a low likelihood of significant loss, they would buy insurance against such loss and sleep better at night.

People do not make decisions according to economic probabilities only. When issues are framed in terms of emotional gains and losses, their image of probability becomes unclear and distorted, and can be predicted.

2.5. Mental accounting:

Mental accounting is an economic concept established by economist Richard H. Thaler (1999), which contends that individuals classify personal funds differently and therefore are prone to irrational decision-making in their spending and investment behavior. He defines mental accounting as a set of cognitive operations used by individuals and households to organize evaluate and keep track of financial activities.

According to the theory of mental accounting, people treat money differently, depending on factors such as the money's origin and intended use, rather than thinking of it in terms of the "bottom line" as in formal accounting (Thaler & Johnson, E, J, 1990). An important term underlying the theory is *fungibility*, the fact that all money is interchangeable and has no labels. In mental accounting, people treat assets as less fungible than they really are. Even seasoned investors are susceptible to this bias when they view recent gains as disposable "house money" (Thaler & Johnson, E, J, 1990) that can be used in high-risk investments. In doing so, they make decisions on each mental account separately, losing out the big picture of the portfolio

Behavioral economics studies things like what people think "fairness" means, how much they are driven by greed, how they respond to cheats and so on.

The ideas of behavioral economics have been applied to various domains, including personal and public finance, health, energy, public choice and marketing.

It is really important for marketers to identify every aspect that can help them at understanding better people's behavior and guide them through their process of purchasing an item and making new decisions.

Section 2: System 1 and system 2

Critical thinking is primarily about improving people's conscious and deliberative reasoning processes through logic argumentation and other formal reasoning tools like analysis. This belief is considered to be wrong because what is understandable today is that the cognitive processes that matter in beliefs, judgments and decisions involve a complex interplay of conscious and unconscious processes.

The term that psychologists use today is dual processing theory or dual system theory, they assume that there are two distinct types of cognitive processing that underline human reasoning, one is fast and the other is slow.

1. Definition:

Dual system theory is a concept that refers to the fact that the human brain has two different sets of thinking and two different ways of making decisions, it is divided into two systems:

1.1. System 1 (automatic system):

System 1 thinks fast, effortless, operates automatically, quickly, and with no sense of voluntary control. It includes both variants of intuitive and automatic mental activities of perception and memory.

It also goes by the name of impulsive system that relies on heuristics and past knowledge and experience. It is the reason we can drive in an empty road or even recall our age.

System 1 is an automatic, fast and often unconscious way of thinking. It is efficient, self-governing and requires little energy and attention, but it is prone to biases and systematic errors. It takes over in emergencies and assigns total priority to self-protective actions.

It works through the process of associative memory; it builds intuit causal connection between words and images, ideas and memories in order to build a coherent interpretation of life as it should be experienced.

One of the defining characteristics of system 1 thinking is the phenomenon that Kahneman describes as "What you see is all there is". Meaning that system 1 pays no attention to what it does not know. It only works with ideas that have been primed and activated in the system, and rapidly reaches conclusions and makes decisions with a minimum of information. In other words, system 1 is the mental system for leaping to conclusions and capable of making quick decisions.

After understanding system 1 and its functions, marketer can apply it in market research for their data needs. This system can be used when marketers want to collect data about brand awareness and loyalty.

1.2. System 2 (controlled system):

System 2 thinks slow, requires attention to the effort of thinking, focusing and concentration, slowing down and not jumping to quick conclusions.

It is more cognitive where the thinking process can take greater range of data than just past experiences. It is the reason we can focus on someone's voice in a crowded room, or fill out a tax form.

System 2 is an effortful, slow and controlled way of thinking. It requires energy and cannot work without attention but, once engaged, it has the ability to filter the instincts of system 1.

System 2 is for big and important decisions that need a very long time of thinking and collecting of information; deciding what college to attend or which house to buy; these are the types of decisions that engage system 2.

The way of thinking of system 2 is pretty much used in describing rational thoughts

and rational decisions making. It is a controlled mental process requiring great deal of effort in terms of focusing and attention.

System 2 protects the most important activity, so it receives the attention it needs. One of the main functions of system 2 is to monitor and control thoughts suggested by system 1.

The problem with system 2 is that it demands a lot of energy. The more tasks it takes on; the more energy it requires. As a result, system 2 tends to conserve energy by doing a little work as possible and when feeling cognitive strain, defaults to system 1. In short, system 2 is powerful but lazy.

2. Historical background:

The concept was developed by Daniel Kahneman (2011) and popularized in his book “Thinking, Fast and Slow”.

The foundation of dual theory probably comes from William James (an American philosopher and psychologist). He believed that there were two different kinds of thinking: associative reasoning and true reasoning. He claimed that associative thoughts would come to mind from past experiences, providing ideas of comparison or abstractions. He also believed that true reasoning was useful for “unpredictable situations” in which using reasoning to overcome obstacles.

Richard E. Petty and John Cacioppo proposed a dual process theory in social psychology in 1986; their theory is called “the Elaboration Likelihood Model of Persuasion”. According to this theory, there are two different ways or routes to persuasion in decision making. The first is known as the central route and it takes place when a person is thinking carefully about a situation, interpreting the information they are given, and creating arguments. While the second route is known as the peripheral route and it takes place when a person is not thinking carefully about a situation and uses shortcuts to make judgments.

Steven Sloman (1996) also suggested another interpretation on dual processing. He believed that associative reasoning takes stimuli and divides it into logical information based on regularity, meaning that how ones’ associate information is directly proportional to the similarity of past experiences. And the other reasoning process is that the system functions on logical structure and variables based upon rule systems to come to a conclusion. He also believed that the rule-based system has control over the associative system.

Recently, this dual system was tackled by Daniel Kahneman, where he provided further interpretation by differentiating the two ways of thinking, calling the first intuition (system 1), similar to associative; fast and automatic; usually with strong emotional bonds and very difficult to change. While the second, reasoning (system 2), is slower and used for subject conscious judgments and attitudes.

Standard consumer behavior assumes that consumers are rational utility maximizers. Consumers would evaluate the benefits of a good and consume it, when marginal utility is greater than or equal to the marginal cost. By using the second thinking system, this rational choice is not realistic. However, in the real world, this way of thinking, by using system 2, may be over-ridden by the impulsive self.

3. The differences between system 1 and system 2:

Table 1 The difference between system 1 and system 2

	System 1	System 2
Characteristics	Fast, effortless, unconscious, implicit, associative, triggers emotions	Slow, effortful, conscious, explicit, logical, deliberate
Advantages	Speed of responses in a crisis. Easy completion of routine or repetitive tasks. Creativity through association.	Allows reflection and consideration of the “bigger picture”. Can handle logic, mathematics, and statistics. Good for reductive thinking.
Disadvantages	Jumps to conclusions Unhelpful emotional responses and can make errors and poor judgments.	Slow. Requires time, effort and energy which can lead to decision fatigue.

Source: Modified by the student

The table above illustrates the main characteristics and differences between system 1 and system 2.

This theory can be used for important purchases and decisions, where it is necessary to make sure that people use both ways of thinking rather than relying on only one.

Kahenman (2011) in his book “Thinking, fast and slow” notes that people make decisions based on past experiences. For example, driving fast has not caused any accident in the past, so it’s fine to keep speeding. The optimistic mind here thinks that accidents cannot happen. However, if people are aware of their mind’s optimism bias, they should think and be aware of the real chance of accidents from speeding. Considering up the costs and benefits of speeding will lead to different decision making that relying on the non-thinking aspect.

Another important point about system 1 and system 2 is that system 1 is always operating, but system 2 is not. In other words, stimuli always trigger system 1 associations, but system 2 evaluations do not always follow.

Most of the time, system 2 is absent. It accepts system one’s suggestions and rationalizes those instinctual, emotional thoughts. For example, buying a product because system 1 was influenced by an emotionally persuasive advertisement. System 2 will not only support that purchase decision, but it will also rationalize it by deciding that the product was a necessity or because of the best quality or because it was cheap. And since people only conscious of system 2, they’ll accept system two’s rationalization, and believe that they made the decision for rational reasons.

However, there are some decisions that system 1 cannot make on its own, so system 2 is called upon.

System 1 is more concerned with avoiding pain than gaining pleasure, while system 2 has the ability to make decisions based on what will give the most pleasure. This is because system 2 is able to consider the future, system 1, on the other hand, focuses on the present.

Since system 2 has the ability to focus on the future, it must exercise self-control, system 1 is not able to do that, it only thinks about right now. So, if ones' system 2 is busy working on something else, it is more likely to give in to temptation. Kahneman (2011) explained it with a chocolate cake example.

“...It is now a well-established proposition that both self-control and cognitive effort are forms of mental work. Several psychological studies have shown that people who are simultaneously challenged by a demanding cognitive task and by a temptation are more likely to yield to the temptation.

Imagine that you are asked to retain a list of seven digits for a minute or two. You are told that remembering the digits is your top priority. While your attention is focused on the digits, you are offered a choice between two desserts: a sinful chocolate cake and a virtuous fruit salad. The evidence suggests that you would be more likely to select the tempting chocolate cake when your mind is loaded with digits. System 1 has more influence on behavior when System 2 is busy, and it has a sweet tooth. People who are cognitively busy are also more likely to make selfish choices (make superficial judgments in social situations) ...”. (Kahenman, 2011)

System 2 is easily depleted comparing to system 1 which has large capacity, and it can be always on without issue. While system 2 has much smaller capacity, it gets tired and begins defaulting to whatever system 1 thinks.

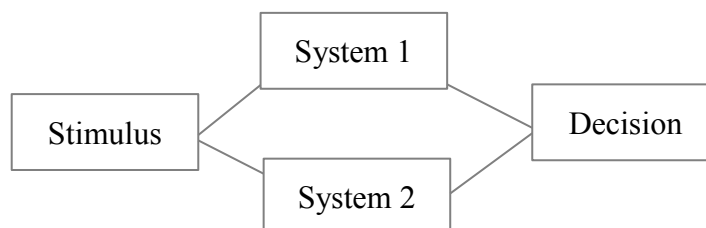
4. Review of dual system models in reasoning and decision making:

The dual system theory has relevance in economic decision making through the multiple-selves model, in which one person's self-concept is composed of multiple-selves depending on the context. For example, a CEO is a manger and a hard working person, but as a father is caring and supportive. Decision making involves the use of both automatic and controlled processes, but also depends on the person and situation and one's past experiences.

This section in intended to provide an overview of the various dual system models relevant to decision making.

Another model, the Parallel-Competitive Model which assumes that systems 1 and 2 operate continuously, simultaneously, and compete for a decisive response. A simple version of a PCM is shown in figure 2.

Figure 2 Simplified graphical representation of the PCM



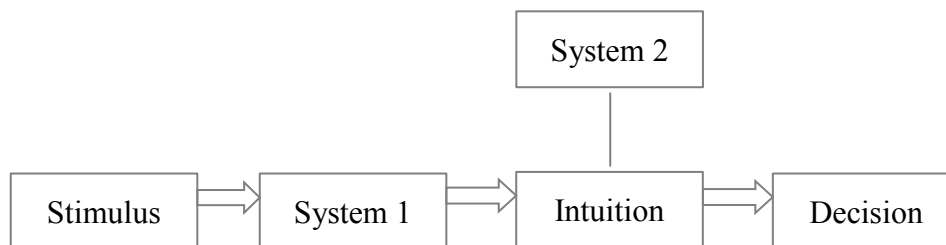
Source: Dual-System Theories of Decision Making: Analytic Approaches and Empirical Tests (2016)

Epstein (1994) described the PCM as Cognitive-Experiential Self-Theory (CEST) in which, system 1 “the experiential system” has a heavy emphasis on emotion. While system 2 “the cognitive system” is rational and logical. In CEST, both system 1 and system 2 are always active and always competing for responses. Meaning that system 1 is unconscious and emotional, and system 2 is conscious and logical.

Epstein suggested that in order to respond for an event, system 1 will act first, looking for attached emotions, which then shapes the further mental events including conscious and unconscious thoughts and actions. In other words, system 1 is able to complete processing before system 2 processing begins.

In the Default-Interventionist Model (DIM), system 1 works very quickly and suggests intuitive responses, where intuitions provide valid responses that guide behavior, but in some cases, these responses are inappropriate, and system 2 may override the intuition and replace it with a more reflective response (figure 3)

Figure 3 simplified graphical representation of DIM



Source: Dual-System Theories of Decision Making: Analytic Approaches and Empirical Tests (2016)

According to the default-interventionist model, overriding system 1 is not the problem; the issue is activating system 2 in the first place. In other words, system 1 can quickly make an intuitive response in decision making; system 2 then may check the response and engage in further reasoning if an error is detected. System 2 is activated only after system 1 processing had been completed.

5. Importance of system 1 and system 2:

Of course, system 1 and system 2 work together, people cannot specifically talk to one part of the brain and leave the other out of conversation. The two systems are not black and white, just because system 2 makes the decision does not mean it was the best one. System 1 can make perfectly logical, useful decisions. Similarly, system 2 can make incredibly poor decisions.

Understanding how the two systems work, both separately and together, is the key to understanding how to persuade consumers.

This dual system theory has been very useful in psychology and economics; it helped specialists in understanding the fallibility of human reasoning and decision making. Both systems are vital for success, what is important is how people can access the right system the right time.

In problem solving situations, for example, system 2 will give a head start to system 1, while system 2 can guide an analysis of the problem, and at the right time, it will allow system 1 to do his job and find creative solutions.

Norris and Epstein (1994) note: “Although system 2 (the rational system) is superior than system 2 (the experiential system) in abstract thinking, is inferior in its ability to automatically and effortlessly direct everyday behavior. And although system 1 is

superior in directing everyday behavior, is inferior in its ability to think abstractly". This means that there is no superior nor inferior system, they are both equally important and both have advantages and disadvantages which make them complete each other. One of the principal arguments made against dual system theory is that the proposed dichotomy is not suitable with the range of processes identified in studies of reasoning.

Stevenson (1997) claims that "the characteristics used to identify the two reasoning systems do not accommodate examples of implicit and explicit processing that involve the acquisition and application of simple and complex rules." he suggests that implicit processing involves the encoding and application of fragmentary knowledge.

System 1, the fast unconscious mode that dominated by cognitive shortcuts or heuristics (next section will be dealing with heuristics and biases) is the dominate mode in most of people's everyday decision making, it interacts with system 2, which can override system 1, but system 2 is generally lazy and it's default mode of operation is just a rubber-stamp what system 1 tells it. System 2 thinking is crucially important for deliberative decision making. People spend most of their day on system 1 rather than system 2 and this is why marketers should find ways to stimulate system 1.

Section 3: Heuristics and biases

Everyday people make decisions and judgments, sometimes they can be able to think about them carefully, but other times they make them so quickly using little information. If people considered and analyzed every possible outcome of these decisions and judgments, they would never be able to do anything else. This is where heuristics and biases come in; they are cognitive tools that help people to make quick decisions and judgments.

1. Heuristics:

1.1. Definition:

One of the main problems related to human decision-making is that people are not always able to make decisions that will help them to achieve their goals in long run. Despite having good intentions, people make bad decisions all the time, they choose to smoke, eat unhealthy foods, drive faster than the speed limit, skip work etc. These decisions are made in spite of the obvious fact that these choices will have negative consequences. So the question is why people make such choices, knowing that their choices are bad?

Answers to this kind of question can be found by looking into previous research conducted in the field of judgment and decision-making in “Heuristics and biases: the psychology of intuitive judgment” by D. Kahneman, D. Griffin and T. Gilovich.

The authors discuss how the models and understanding of decision-making have changed over time. For a long time, the classical model of rational choice was the prevalent view on how individuals make their decisions. This model showed that a rational actor, which can be any individual, will choose what option to pursue by assessing the probabilities of different outcomes, judging the utility that can be derived from each possible outcome, and combining these assessments to make the rational choice. The optimal combination of probability and utility is the option that will be pursued (Kahneman & al, 1982)

With time, several researchers made contributions to the judgment and decision-making that made the classical model loses its liability.

Kahenman and and Tversky developed their own unique perspective on decision making and rational choices (bounded rationality), inspired by the examples of biased real-world judgments. In their most influential work, Kahenman and Tversky explored different heuristics and how these may lead to systematically biased decisions.

Heuristics are general decision making strategies people use that are based on little information, yet often correct. They can be defined as a mental shortcuts or approaches that individual rely on in order to find a solution or make a decision, by focusing on one aspect of a complex problem and ignoring others.

A heuristic is explained to be a rule of a thumb; a simple and more or less efficient rule which people tend to use when forming judgments and making decisions (Kahneman & al, 1982) In most situations, people do not have the time, resources or capabilities to make exhausting searches for information; therefore they use heuristics as a mental shortcut, focusing only on one aspect of the problem.

These rules work well under most circumstances, but they can lead to systematic deviations from logic, probability or rational choice theories. The resulting errors are called “cognitive biases”.

1.2. Types of heuristics:

In their initial work, Kahneman and Tversky proposed three heuristics; availability, representativeness and anchoring and adjustment. And by time researchers have identified many more.

1.2.1. Availability heuristic:

Availability in psychology is the ease with which a particular idea can be brought to mind. "The availability heuristic is defined as a mental shortcut that relies on immediate examples that come to a given person's mind when evaluating a specific topic, concept, method or decision" (Esgate & Groome, David, 2005)

Availability heuristic is when people evaluate how likely an event is based on its availability. People are willing to use information that is most readily available in making decision. For example, when asking people to estimate which job, between a police officer and a builder, is more dangerous than other? It is obvious that the answer is going to be that the police officer is the one with the most dangerous job. But statistically talking, builders are more likely to die on the job than cops. When it comes to making this type of judgment about risk and dangerous, human brain relies on information that comes to mind quickly.

This example illustrates what is known as the availability heuristics, a mental shortcut that helps individual to make fast, but sometimes incorrect assessments.

In making a decision, a number of related events and situations might immediately come to ones' mind. As a result, the mind will judge those events as more frequent than others, meaning that this judgment will give greater credence to this information and tend to overestimate the probability and likelihood of similar things happening in the future. Some events are easier to recall than others, not because they are more common, but because they stand out in ones' mind.

This type of heuristic can be very helpful in decision making. When people are faced with the need for an immediate choice, they often don't have much of a time to think, or the main resources to investigate in greater depth; the availability heuristic allows people to quickly arrive at a conclusion.

Availability heuristic can be a helpful tool, but it is also important to remember that it can sometimes lead to incorrect assessments. One of the earliest and most powerful critiques to this type of heuristic was made by Schwarz and Al. A study which found that the ease to recall a key component in determining whether a concept became available.

Another study has shown that frequency estimation might not be the only strategy that people use when making judgments. Memory recall or memory activation can affect availability heuristics and not just the available information.

1.2.2. Representativeness heuristic:

The representativeness heuristic is used when making judgments about probability of an event under uncertainty. People use it when making judgments, by estimating the likelihood of an event after comparing it with to an existing prototype that already exist in their minds.

In other words, people use this heuristic when they judge the probability that an object or event A belongs to class B by looking at the degree to which A resembles B. by doing this, people will neglect information about general probability of B occurring (Kahneman & Amos, 1972). They add that, a person who follows this heuristic evaluates the probability of an uncertain event, or a sample, by the degree to which it is:

similar in essential properties to its present population; and reflects the silent features of the process by which it is generated.

For example, the following description is about a woman who loves listening to calm music and faithfully about horoscope every day. In her free time, she enjoys attending spirituality groups and meditation. Based on this description, which situation is more likely?

A: she's a holistic healer.

B: she's a teacher.

Many people would identify her as a holistic healer based on representativeness, because she fits perfectly with their existing idea of how a holistic healer would behave. In reality, it is more likely that this woman is a teacher based on probability that teachers are more common than holistic healers.

Representativeness can be determined by:

Similarity: “when judging the representativeness of an event or object, people usually pay attention to the degree of similarity between event and standard” (Kahneman & Amos, 1972) .

Randomness: “to be representative, it's not sufficient that an uncertain event to be similar, it should also reflect the probabilities of the uncertain process by which it is generated” (Kahneman & Tversky, 1972). Meaning it should appear random. Things that do not appear have any logical sequence is regarded as representativeness of randomness, and thus more likely to occur.

The representativeness heuristic is just one type of mental shortcut that allows people to make quick decisions in the face of uncertainty. It can lead to ignore factors that play important role in shaping events.

1.2.3. Anchoring and adjustment heuristic:

Another way that people depend on is the anchoring and adjustment heuristic, which is used “in many situations where people estimate by starting from an initial value that is adjusted to yield the final answer” (Kahneman & al, 1982). People come up with initial judgment -the anchor- and then adjust it based on additional information.

For example, a person who is interested at buying a used car, the initial price offered for this used car sets the standards for the rest of the negotiation, regardless of the legitimacy of the initial price, any price lower than the initial price seem more reasonable even this price is still higher than what the car is really worth.

According to Kahneman and Tversky, anchoring occurs not only when the starting point is given, but also when people base their estimations on the result of some incomplete computation. In a study made by the both of them, two groups were asked to estimate, within five seconds, a numerical expression. The first group was asked to estimate the product

“ $8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1$ ”. While the other group estimated the product “ $1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 \times 8$ ”.

Subjects on average, in group one, guessed about 2250, while the other group, the subjects guessed a lot lower number, on average, they said that the was about 512.

Both answers are obviously wrong, the real answer for both is 40320. The first amazing thing about these similar mathematical estimates, is that people get the wrong answer, but the second, even more amazing thing, is that people give different answers to the different problems, even though they're just different ways of asking exactly the same problem. So the question is, why did these groups give completely different answers, when the same math problem is presented differently?

The answer lies in how do people make estimates, when people have lots of time to do a math problem, like the one used in this study, they can multiply all the numbers together and get an exact product. But when people are limited by time and have to

answer quickly, they multiply the first two numbers (8 x 7) they get 56 and then 56 x 6 And it's difficult for them to continue, so they guess that the final number's got to be bigger than 56, maybe around 2000. And the same thing would happen for the second group. The product of the first two numbers is small, so the final result must be pretty small.

This process of guessing based on the first number that people saw is what's known as "anchoring". The first number that people think of when they estimate is the anchor, and once they have an anchor in their mind, they adjust as needed from there. So starting at different points leads to different final guessing.

Adjustment from an anchor is usually employed in numerical predictions when a relevant value is available.

2. Biases:

Most people like to think that their beliefs are the results of years of experience and objective analysis of the information that they have. Because of this, indirect biases creep in and influence the way people see and think about the world.

Since attention is a limited resource, people have to be selective about what they pay attention to in the world around them.

Bias is the prejudice in favor or against one thing, person, or a group compared with another, in unfair way. It can be learned implicitly with cultural contexts.

Biased means one-sided, lacking a neutral viewpoint or not having an open mind, it can come in many ways related to prejudice and intuition.

A cognitive bias is a repeating or basic misstep of thinking, a pattern of deviation from standards in judgment, whereby inferences may be created unreasonably. People create their own subjective social reality from their own perceptions, their view of the world may dictate their behavior.

"Cognitive biases may lead sometimes to perceptual distortion, inaccurate judgment, illogical interpretation, or what is broadly called irrationality" (Kahneman & Tversky, 1972). Some cognitive biases are taken to be adaptive and may lead to success in the appropriate situation.

Cognitive biases can be used in making quick decisions, and can be product of human processing limitations, coming about because of an absence of appropriate mental mechanisms, or just human limitations in information processing.

2.1. Types of Biases:

2.1.1. Attribution bias:

Attribution bias is a cognitive bias that refers to systematic errors made when people evaluate or try to find reasons for their own or other' behavior. In other words, attribution bias is when people attribute the behavior of other people to something personal about them rather than to something about their situation.

This bias occurs in two ways. First, people are likely to make strong personal attributions to account the behavior observed in others. For example, when someone leaves a big tip, people will say that this act was out of generosity, but the truth is that this was because this person is trying to impress others. Second, people tend to make more personal attributions about behavior of others, than they do for themselves.

Researchers have identified many different specific types of attribution, such as:

- The fundamental attribution error: is when people make attributions about another person's actions, they give importance to the role of dispositional factors, while minimizing the influence of situational factors.

- Actor-observer bias: in addition to over-valuing dispositional explanations of other's behavior, people tend to under-value dispositional explanations and over-value situational explanations of their own behavior.
- Self-serving bias: is when people attribute their successes to internal factors and their failure to external factors. Meaning that people will take credits for their successes while denying any responsibility for failure.
- Hostile attribution bias: is when a person interprets other's ambiguous behavior as hostile (adverse or opposed), rather than benign (friendly).

2.1.2. Status quo bias:

Status quo bias is an emotional bias; a preference for the current state of affairs or the current baseline, which is taken as a reference point, and any change from that baseline is perceived as a loss. In simpler words, status quo bias is when people prefer that things stay as they are or that the current state of affairs remains the same.

The status quo bias can make people resistant to change, but it can also have a powerful effect on the decisions they make as well. Many researchers have found that people are more likely to pick the option that maintains things as they are currently. This minimizes the risks associated with change, but it also causes people to miss out potential benefits.

If people chose to stick with the current choices to avoid costs of making decisions, then it can be seen as rational choice. However, if they refuse to consider alternatives on the basis of wanting to stay with what they have, then it becomes more irrational.

The status quo bias can have a serious impact on every day choices such as finance decisions, political choices or even health. It can offer a certain degree of protection by preventing people from taking risks. However, the risk-avoidance can also have negative effects, if the alternatives actually provide greater safety and benefits than the current state of affairs.

2.1.3. Confirmation bias:

People like to imagine that their beliefs are rational, logical and objective because they pay attention more to the information that uphold their ideas, and ignore the information that challenges their existing beliefs and thoughts. This way of thinking is known as the confirmation bias.

Confirmation bias occurs when people actively seek out information which confirms their opinion and disregard information which contradicts it. It involves favoring information which confirms previously existing beliefs or biases.

Confirmation biases impact how people gather information, and also how they interpret and recall information and remember things in a way that reinforces these attitudes.

Because people have a tendency to seek information that confirms their existing beliefs, this type of bias can prevent them from looking at situations objectively, and influence future decisions and can lead to poor choices.

This confirmation bias can be seen in many situations such as:

- Biased search for information: is when people try to search for evidence that can confirm their existing hypotheses. "Rather than searching through all the relevant evidence, they purchase questions to receive affirmative answers that support their theory" (Baron, 2000).
- Biased interpretation: is the tendency to analyze scenarios and events inappropriately.
- Biased memory: is when people tend to remember, selectively, something to reinforce their expectations.

All people have confirmation bias, even if they believe that are very open-minded, it's

very likely that some bias will shape their opinion in the end.

2.1.4. Halo affect:

The halo affect is a type of cognitive bias in which people's overall impression of a person influences how they feel and think about his/her character. "It is an immediate judgment where people make an initial assessment about another person or product, and assume ambiguous information based upon concrete information" (Kahneman D. 2011)

"The effect works in both positive and negative directions, if the observers like one aspect of something, they will have a positive predisposition toward everything about it. But if they dislike one aspect of something, they will have a negative predisposition toward everything about it". (Horns and halo effect, The Free Dictionary).

2.1.5. Framing:

Framing effect is a cognitive bias in which the brain makes decisions about information depending on how it was represented to them. It is used to influence decision makers and purchases. It takes advantage of the tendency for people to view the same information but respond to it in different ways, depending on whether a specific option is presented in a positive frame or negative frame.

Studies have shown that there are three types of framing to influence consumer decisions:

- Attribute framing: is when the frame is used to highlight one characteristic of an object in either a positive or a negative light. The challenge with this type of frame is to understand what qualities the consumer thinks are desirable.
- Choice framing: is when the frame is used to present information in terms of gains or losses. The challenge with this type is to understand how much risk the consumer is willing to assume in order to avoid.
- Goal framing: is used when the consumer is encouraged by emphasizing the negative outcome of not participating. Meaning what will they miss if they do not participate. The challenge here is to understand which negative outcome will motivate the consumer to take action.

People are inventors of habit, especially when faced with complex scenarios, they tend to make a complex decision by following others or applying heuristics factors from elsewhere. Knowing and understanding these factors will give the attention needed in order to help people to make better decisions and to choose the most appropriate decision making strategy rather than just execute it

Introduction:

Consumer's buying behavior is considered to be an inseparable part of marketing, it is very important for marketers to understand how consumers think and act, because it has significant bearing on the process of consumer's decision making. In order to understand consumer's buying behavior, marketers should know the real meaning of consumer, and should be able to highlight the differences between a consumer and a customer.

According to the business dictionary, consumer is defined as a purchaser of a good or a service in retail. It is also known as the end user; the one who consumes the product; and not necessarily a purchaser, in the distribution chain of a good or a service.

A customer is the one who buys the product, and may or may not use it for himself, if any other person buys the product, which will be consumed by other rather than the one who bought it, then the buyer is the customer, and the other is the consumer.

“Consumer behavior is the study of the ways of buying and disposing of goods, services, ideas or experiences by individuals, groups and organizations in order to satisfy their needs and wants” (Kotler and Keller, 2011).

Solomon and Al in 2014 defined consumer behavior as, “a process of choosing, purchasing, using and disposing of products or services by the individuals and groups in order to satisfy their needs and wants”.

Similar definition of consumer's buying behavior is offered by Sciffman and Kanuk in 2008, in which buying behavior is described as “a behavior that consumers express when the selection is made, using all the available resources in order to satisfy their needs”.

Another definition by StallWorth (2008) where he clarifies that “consumer's buying behavior is a set of activities which involves the purchase and the use of goods and services which resulted from the customer's emotional and mental needs and behavioral responses”

All of the previous definitions lead to one point of view, that consumer's behavior is a process of selecting and purchasing of goods and services according to their personal needs and wants.

Understanding the consumer's behavior through studying and identifying their needs, will lead to huge, long term benefits for business, but it is vey difficult to identify the exact reasons why consumer purchase or prefers one product or service over another. This is because customers frequently rely on their emotions and beliefs which even themselves are not well aware of.

This chapter aims to identify the most important factors that will lead consumer decision to either buying or not buying, and what kind of process that they will follow in order to come up with the best option that will satisfy their needs and desires.

Three sections will be included in this chapter in order to discuss all the factors that can influence one's decision making, which are:

- Section 01: consumer's psychological core.
- Section 02: consumer's environment.
- Section 03: consumer's decision making

Section 01: Consumer's psychological core

Internal influences basically comes from consumers own lifestyle and way of thinking; his personal thoughts, self-concept, feelings, attitudes, lifestyle. These internal factors can also be known as psychological influences.

This first section will deal with the most important internal factors that could influence one's decision making. These internal factors, also known as dispositional factors, are individual characteristics that influence behavior and action in a person.

There are two main categories of these internal factors, cognitive and affective.

1. Cognitive factors:

Cognitive psychology involves the study of internal mental processes, all of the things that go inside one's brain including: perception, thinking, memory, learning etc.

Learning more about how people think and process information not only helps researchers gain a deeper understanding of how the human brain works, but it allows specialists to develop new ways of helping people deal with everyday problems and decision making.

Findings from cognitive psychology have also improved in understanding of how people form, store and recall memories.

1.1. Perception:

"Perception is the organization, identification and interpretation of sensory information in order to represent and understand the presented information, or the environment". (Schacter & al, 2011)

Perception is the process through which the individual selects, organize and interpret the information to draw a meaningful conclusion. There are three stages in perceptual process: exposure, attention and interpretation. It starts from our senses reacting to what surrounds us. For example, we pass by a coffee shop where the smell of the coffee catches our attention (this is the exposure), then we remember the smell of the same coffee from that evening with friends three days ago, where we almost could taste that coffee in our moth, in consequence our perception of coffee is good and therefore we can buy it at any time we want.

People can be affected differently to the same stimulus because they have different perceptions of the world.

There is this theory that suggests that people; because of the amount of different messages that they are exposed to every day; have created a certain perceptual process to hurdle these information, and therefore they pick and choose what they want according to their needs.

This theory is called the selective perception theory; it is the process by which people perceive what they want in media messages while ignoring the opposing viewpoints. In other words, selective perception is a form of bias because people interpret information in a way that is identical to their existing values and beliefs, in simpler words, people don't see things as they are, and they see things as they want them to be.

1.2. Attention:

Attention is a concept studied in cognitive psychology that refers to how people actively process specific information. It occurs when the stimulus activates one or more sensory receptor nerves, and the resulting sensations go to the brain for processing. It requires consumers to allocate limited mental resources toward the processing of incoming stimuli.

Attention is not just about centering focus on one particular thing, it also involves ignoring a great deal of competing for information and stimuli. In other words, by focusing on one particular thing, people sometimes miss other things that are in front of them. So attention is limited, in terms of people's capacity and duration to focus on one thing, and selective, in terms of what people decide to turn their attention to.

1.3. Learning:

Learning is a behavior that arises from past experience; it depends on the individual's skills, knowledge and intention. The skills are developed through practices while the knowledge and intention are acquired with the experience.

Learning is affected by human needs, external stimulus, small cues and reinforcement.

Reinforcement here means that people tend to repeat the same behavior, if they had a good experience from it earlier, like buying the same brand, because of the good experience with their earlier product.

Learning has two types; it could be conditional learning or cognitive learning. In the first type, learning is conditioned to a particular stimulus, when the consumer is exposed to the same situation over and over again he develops a particular response towards it. While the second type, the individual applies all his knowledge, skill, attitudes, values and beliefs toward that situation in order to extract all the satisfaction that he needs.

1.4. Memory:

Memory is the ability to encode, store, retain and recall information and past experiences in the human brain, it is the use of past experiences in order to affect or influence current behavior. It consists of two interrelated components: short-term memory and long-term memory.

The first one has limited capacity to store information while it is being processed, meaning that individuals use short-term memory while they analyze and interpret information.

While the other (long-term memory) is viewed as an unlimited and permanent storage, it can store all kinds of information such as concepts, decisions, rules etc.

Memory depends on learning because people store learned information, and learning also depends on some extent of memory in order to acquire new knowledge. The ability of human to call on past memories to help in imagining planning for the future is a hugely advantageous attribute in one's decisions and development.

1.5. Thinking:

Thinking is the process of considering or reasoning about something by using rational judgment and intelligent thoughts. It is also the act of using one's mind to produce thoughts.

According to Jeff Hawkins, thinking is nothing more than a process of pattern matching, meaning that thinking is when a person sees, feel, smell, taste or hear something, he'll add this information to his stored memories in order to draw "fill in the blanks". Moreover, thinking is a process of comparing stored memories to either new information or to other stored memories. And because human give greater weighting to the strongest memories; which are confirmation to their view of the world; will tend to be more important than other memories which might contradict this view, and this is why people draw radically different conclusions.

1.6. Comprehension and interpretation:

Comprehension is the ability to understand the meaning or importance of something, it refers to the interpretation or understanding a consumer develops about some attended stimuli based on the way meaning is assigned. This interpretation is either mental

representation of the meaning or signification of something, or an explanation of something that is not immediately obvious.

2. Affective factors:

Affect is a psychological concept that describes one's experiences, feelings or emotions where these emotions are provoked conditions followed by body and brain changes. Compared to the cognitive mind, the affective, emotional, mind is quicker because it reacts without stopping.

An affect is to be understood as a type of a mental phenomenon unique for conscious experience, subjective feelings, emotions and mood

2.1. Emotions:

Many studies have shown that consumer's response is not all rational and logical; much may be emotional and could lead to different kinds of feelings, such as excitement, amusement or even disguise.

A lot of brands such as McDonald's and Coca-Cola made an emotional connection with their customers in order to guarantee their loyalty.

An emotional brand story could trigger people's desire to pass along things they hear about brands, through either word of mouth or on-line sharing. "Firms are giving their communication a strong human appeal to engage consumers in their brand stories" (Ed Keller).

An affective state of consciousness in which joy, sorrow, fear, hate or the like is experienced, is personal and it could be related to one's past experiences and psychological state.

2.2. Attitudes and beliefs:

Kotler defines attitudes as the person's general and repeated evaluations, thoughts and behaviors towards an object or an idea. It means that attitudes define our liking and disliking towards products, and they are really hard to change.

Beliefs are formed through learning, knowledge or faith toward some products or ideas.

The difference between attitude and belief is that, belief is similar to conviction, as if it is true. While attitude is predisposition to act. A favorable or unfavorable attitude can be projected toward persons or objects, unlike belief which is well known to individuals, attitude might be hidden.

2.3. Motivation:

Motivation is something (need or desire) that causes a person to act. It is the driving force within the person that impels him to action. It is also defined as the stimulation of any emotion or desire that leads the person to satisfy his needs.

There are lots of different data and research about needs and motivations of people, but the most famous one is Maslow's need hierarchy. It is based on the assumption that needs have unequal importance levels to individuals, where they seek to satisfy always that needs that are more important to them.

The most recent term used in examining consumer's motivations is involvement theory, it examines the level of motivation the person has for a product or service.

According to this theory, people are willing to spend more time on searching and paying more attention to the information concerning the product or service that they are motivated to get. When the involvement increases, people focus on Ads and information about the product and also use more mental efforts thinking about how much they need that product.

2.4. Mood:

Mood is generalized, internal state of feelings. It is closely related to the concepts of emotion; the difference between mood and emotions is that, emotions are directed and specific to objects or situations, while mood is a state of feeling that is less intense than emotions and more generalized. For example, when a person is mad (emotion) is usually because of a specific thing; however, when a person is feeling anxious (mood), it can last all day no matter what the circumstances and can affect one's way of response to a stimulus.

Mood can be affected by several factors, sleep is a major factor because it can cause depression and therefore will affect one's decision making negatively.

2.5. Personality and self-concept:

Personality is defined as the inner psychological characteristics that both determine and reflect how a person responds to his or her environment. It reflects individual differences, and allows marketers to divide people into different groups based on their traits. It can be changed at any time due to one's circumstances and life cycle.

According to the Freudian theory, personality consists of three interacting systems:

- Id: related to psychological needs to which one seek immediate satisfaction.
- Super ego: individual's internal expression of moral and ethical codes (sociocultural).
- Ego: the individual's conscious control. Functions are internal monitor that aims to balance the impulsive needs and socio-cultural constraints.

Self-concept is defined as the totality of individual's thoughts and feelings. Life style is an outward expression of one's self-concept. It is learned and developed by time, and built by meeting and interacting with other people.

Studies have confirmed that consumers buy products related to their self-concept.

3. Difference between cognitive and affective response:

Figure 4 below, resumes the difference between cognitive and affective responses. Cognitive responses are rational and refer to longer periods of thinking and are outcomes of mental process of judging and concluding. While the affective responses are the result of person's present emotional state and experienced feelings aroused by the influence of external surroundings that could affect one's decisions and judgments without taking too much time of thinking.

A number of authors pay special attention to the fact that the cognitive and affective systems involve different brain hemispheres and therefore conclude that these are the two independent systems. Contrary to this, some other authors claim that these are mutually dependent systems

Figure 4 Five cognitive and five affective responses

Five cognitive responses	
It is important	It is not important
It means a lot to me	It means nothing
It is valuable to me	It has no value for me
It is relevant for me	It is irrelevant
I need that	I don't need that
Five emotional responses	
It is interesting	It is not interesting
It is exciting	It is boring
It is attractive	It is not attractive
It is fascinating	It is ordinary
It is engaging	It is not engaging

Source: Arnould E, Price I, Zinkhan G (2004), consumer McGraw Hill / Irwin

Given the large number of variables that could affect one's behavior, some of these variables can be related to the product, like perception. And others can be related to the person himself, like personality.

Some of these factors are also stable and cannot be changed by time, that's why it is very difficult for marketers to influence one's behavior. For example, one's personality cannot be changed by the brand's politic, but perception can be easily affected through advertisement.

Section 02: Consumer environment

Consumer's buying behavior cannot be determined only by internal and personal factors. The consumer is a social being, he is affected by the opinion of society members and social surroundings and therefor his purchase decisions are also affected by the presence of other members of the society and their opinion about the purchase and use of product.

Consumer environment is divided into two categories; social and physical factors.

1. Social factors:

1.1. Culture:

Defined by Kotler in his book "principles of marketing", is "the learned distinctive way of life of a society", meaning everything we have been taught during growing up. Values, behaviors, traditions, wants and perceptions form common cultural identity within a country. It is the culture of individual which decides the way he or she behaves, in simpler words, culture is nothing but values of individual and his learnings from his parents and relatives as a child. Culture is dynamic due to the changing of the environment (technologies, changing values etc.)

Culture exists to satisfy the need of people within society by guidance, suggestion,

standard practices and social needs etc. it is learned by several ways: the first, is the formal learning: what the elder family member teach the younger one how to behave. The second, informal learning: what the people learn primarily by imitating the behavior of selected others such as family, friends or TV heroes. The third is technical learning from schools and education where people learn what should be done, how it should be done and why it should be done.

1.2. Subculture:

Which is defined as culture within the culture. It is a distinct cultural group that exists as identifiable segment within a larger, more complex society. For example, in Algeria for instance, one of the subcultures are the Amazigh, in addition to the Arabs language and traditions, they also have their own language and traditions.

1.3. Social class:

Is the division of members of a society into a hierarchy of distinct status classes, which are defined by combination of wealth, education, occupation and monthly income, it exists three classes:

- The lower class: also known as the working class. It is the group with the least income; they barely earn enough to cover their expenses and may or may not have education.
- The middle class: is the biggest socio-economic group. These are people who work in decent jobs and earn enough money to cover their expenses and may even have some money left over for savings.
- The upper class: is usually the smallest group among the three. They tend to earn more money to afford luxuries life. They have the highest status in society and high level of education.

1.4. Reference groups and social network:

Reference group includes individuals or groups that influence our opinion, beliefs, attitudes and behaviors, they can be considered as role models or inspiration. They can influence our consuming behavior and aspirations, because we want their approval.

Reference group has a large influence only when the product is complex enough or the risk of buying a bad product is high.

Nowadays, people in social media tend to follow people that are similar or they would want themselves to be. This causes people to find opinion leaders in social media and form their aspirational reference groups.

It is very important to highlight the importance of group thinking and its possible changes to behavior. It is studied that members of the group behave with less limitations because their behavior is more connected with each other's, when the salesman thinks he is talking to a one person of the group, he is actually speaking to the whole group, as there are different influencing pressures within the group dynamics, such as opinion leader.

1.5. Family:

Family of a consumer plays an important role in the decision making process. The parents, siblings and relatives all have their own view about a particular purchase, they all make a decision as a unit, we can find:

- Influencers: are the ones who give ideas or information about the product or the service.
- Gate keepers: are the members who panel the information.
- Decision makers: the parents usually have the power to take decisions on behalf of the rest of the family.
- Buyers: who actually makes the purchase of the product.
- End users: the ones who finally use the product.

1.6. Role and status:

This factor describes the role and status of the person within the group, the position a person occupies in a particular setting in the society. While the role is the set of norms and values attached to the status.

For example, a Chief Executive Officer in a big firm is also a husband and a father, so his buying tendency depends on his role in the society.

1.7. Occupation:

This factor is more personally related to the profession of the individual; people would buy work supplies like clothing that suit their need while working. At first, this variable might seem the same thing as being in reference group of workers, but it is not because it is more related to the profession like we said earlier.

1.8. Life style:

Life style is defined as a way of living of individuals, which they manifest in coping with their physical, psychological and social environment on a day-to-day base. It is the formula of how individual interact with the world, in other words it is a way of living that the person believes in. It is an important factor in determining how consumers make their purchase decisions because it is considered as a result of their needs, wants, desires and motivation.

2. Physical factors:

The physical environment refers to the tangible, or material, objects and conditions that surround the individual. It can be controlled or uncontrolled

As soon as a consumer enters a shop with the intention of purchase, the most important things that he observes, beside locating the product, are the decor, style, cleanliness etc. of the shop. These are known as physical surroundings.

One of the most important factors is the atmospheric factors, retail factors such as display design, smell, sound, store lighting and other elements of store's ambiance, which can be studied and controlled in order to influence the consumer's buying mood. They include:

2.1. Music:

Music, means sounds and other noises present in the store. It has a unique effect on brains, especially concerning memory, music activates many centers across the brain, including the emotional ones. Music varies by volume, pitch and by the specific songs played. A study made by Robert J. Donovan and John R. Rossiter in 1982, known as the pleasure arousal-dominance (PAD) model. The results suggest that a store's atmosphere affects the emotional states of consumers. The study found that retail owners who appeal to the pleasure centers of the brain (the parts that are responsible of feeling good chemicals like dopamine) and the parts of the brain that control arousal (those that release stress-response chemicals like adrenaline), cause shoppers to behave in different ways.

Music affect people in multiple ways, music with a social function causes people to think about their role in society and self-expression. Emotional music calls the listener to feel something, and cognitive music allows people to feel removed from the world or more engaged in it. While arousal-focused music will invite consumer to action.

2.2. Aromas (smell of the place):

Aroma in marketing is the use of various fragrances and volatile oils to increase consumer willingness to purchase a product. According to Martin Lindstrom, "75% of the emotions that people generate on a daily basis are affected by smell. Next to sight, it is the most important sense that people have"

Aromas and scents are used as an element of an environment's atmospherics, termed as ambient scent. People can recognize scents after very long time, and using scents as reminders can cue all kinds of past memories. Pleasant scents have been shown to enhance evaluations of products and stores. Consumers take more time shopping and engage in more variety seeking in the presence of pleasant scents.

2.3. Lighting:

Lighting can affect the emotional responses that influence consumer shopping behavior, it should fulfill aesthetic, emotional and functional requirements in interior spaces. Studies have shown that too much light will make store look like a hospital, warmer lights will make it comfortable, while dimmer lights, make it impossible to see products.

2.4. Color:

Colors can be negative or positive. A store with bright, overwhelming colors might be interesting to a younger crowd, but a turn off for others. So it's so important to use colors to invite, not overwhelm. Rich and vibrant colors can make a shop look solid and prosperous, while faded paint and carpets can make it look seedy. Colors can change one's mood and improve state of mind and even deepen the relation between consumers and brands.

Studies have shown that 93% of consumers rely on visual appearances when looking at new products, 85% say color is a primary reason for why they bought a product. For example, yellow is a good color to grab one's attention, while green is for allowing consumers to feel at ease. Red will drive consumers to make immediate and rash decisions, and blue will give them a feeling of relaxation and more trustworthy than competitors.

2.5. Merchandise:

Visual merchandise involves everything the customer sees in approaching the store and after entering it, this includes the exterior appearance of the store, the store sign, interior décor, store layout (the strategic use of space to influence consumer's experience) and the way the merchandise is presented and displayed within the store.

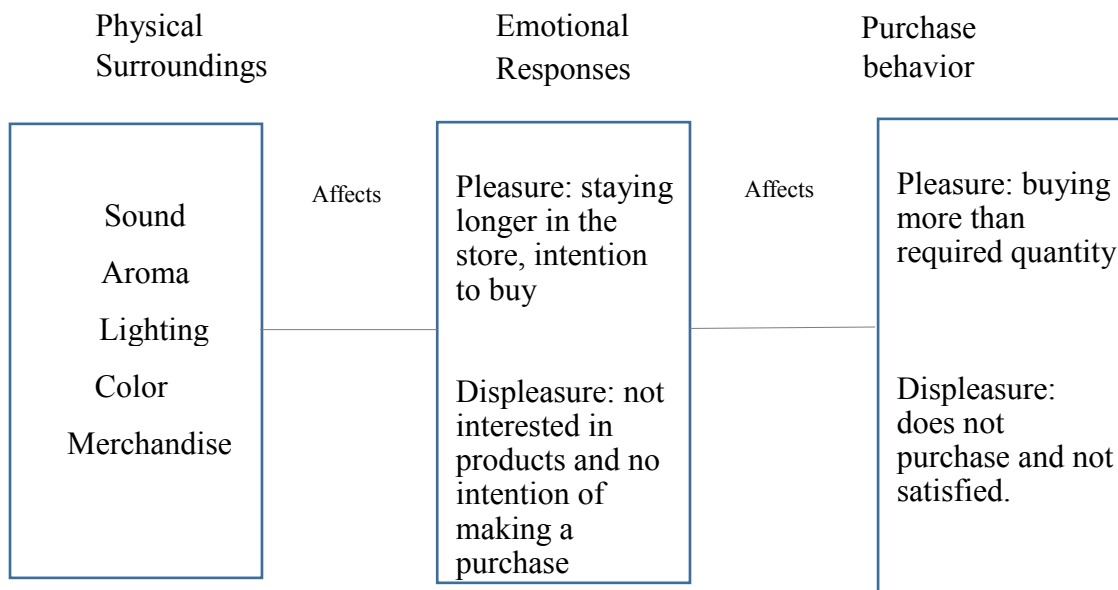
The purposes of visual merchandising are to educate customers and encourage multiple sales and to rise up the store's image.

Visual merchandise elements can be divided into two groups:

- Exterior design, which includes exterior signs, entrance and window display.
- Interior signs, which includes colors, lighting, music, interior signs, space and layout, cleanliness and fragrances.

Figure 5 below, illustrates how can these factors influence one's desires to stay and shop more and more, and gives general idea about the kind of emotional responses and purchase behavior. The influence can be positive or negative, depending on how much these environmental factors could affect one's mood.

Figure 5 Physical surroundings purchase process



In addition to these factors, it exists some other factors, uncontrolled factors such as weather.

The situation also defines the task or the purpose of buying, meaning the buying intention or motive, why is the purchase being made, is it for self-consumption or is it for a gift or for special occasions. This kind of purchase is affected by the reaction of the person to whom the gift is being given.

Time also can affect consumer buying behavior, it may be the time allotted for shopping or the time of the day that customers prefer to do their shopping, some prefer to shop in the morning, others in the afternoon etc. Time of buying always varies form a product to another, an item of high value will require much more time.

Section 03: Consumer's decision making

Previous sections have dealt with both internal and external factors that could affect one's choices. These different factors can easily help specialists, not only in understanding consumer's behavior, but also at knowing the process of one's decision making, and the different steps that consumer goes through in order to choose.

1. Decision making.

1.1. Definition:

“Consumers buying behavior refers to the purchasing of products for personal or household use, not for business purposes”. (William. M, 2010).

Decision making is the action or process of making important decisions. The purchase decision is a result of a complex behavior of the consumers in order to satisfy their needs and desires. There are two types of purchase decision:

- The assortment decision: includes all the necessary decisions to determine the desired product, like buying a car for example.
- The market decision: in this case, it is not for the consumer to identify the products they wish to acquire, but rather some actions in the markets to obtain the products in question, like choosing a brand or a location.

A consumer may first choose a point of sale and then make a product choice.

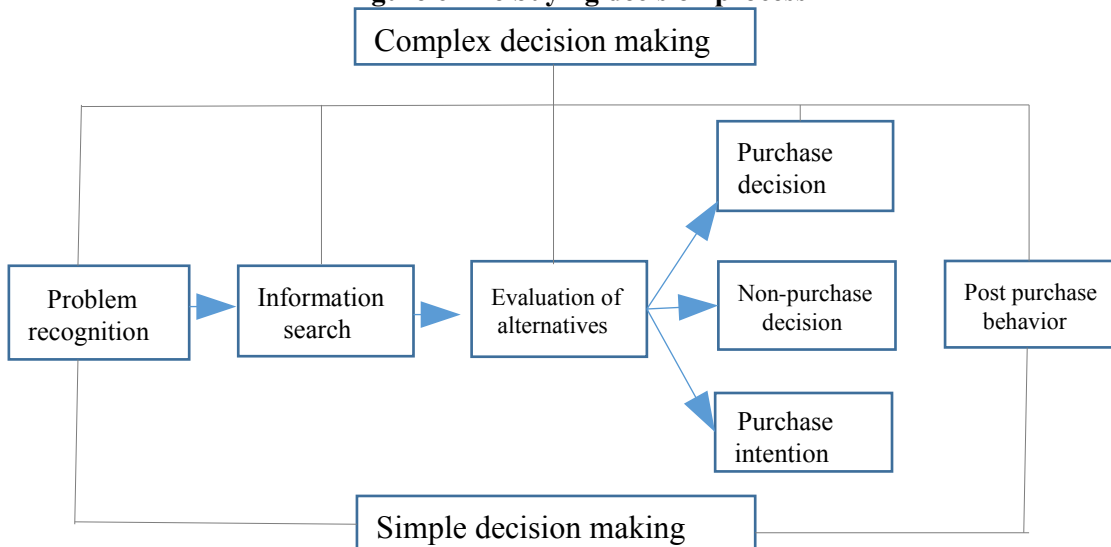
Sometimes the consumer chooses his assortment and makes his market decision at the same time in which the consumer knows exactly what to buy and where to buy it.

“The basic psychological processes (motivation, perception, learning, memory, personality and attitude) play an important role in understanding how the decision process takes place” (Keller & Kotler, 2006). All their experiences in choosing and using a product can influence their purchasing habits in the future.

When purchasing an item, the buyer passes through five stages: problem recognition, information search, evaluating of alternatives, purchase decision and post purchase behavior (figure 6).

It is clear that the buying process is not just the act of purchasing a product or service, it starts long before it and continues even after the buying. This is why the marketers have to study and understand all the five stages and not just focusing on the buying stage.

Figure 6 The buying decision process



Source: modified by the student

Figure 6 also outlines the process a consumer goes through in making a purchase decision. This five-stage process represents the steps people undergo when they make a conscious effort to learn about the options and select a product the first time they purchase it, for instance, or when buying high-priced, long-lasting items they don't purchase frequently. This is called complex decision making.

For many products, the purchasing behavior is routine: the consumer notices a need and he satisfies that need according to his habit of repurchasing the same brand or the cheapest brand or the most convenient alternative, depending on his personal past experiences he will know what will best satisfy his needs, so he can pass the second and third stages of the process. This is called simple decision making.

2. Decision making process:

2.1. Need Recognition (Problem recognition):

The first step of the consumer decision process is recognizing that there is a problem and that this need to find solution will lead to some action.

The existence and the manifestation of the need can be caused by internal or by external stimuli. The internal stimuli can be caused by the basic needs such as hunger, thirst... etc. they may become as acute as to be transformed in drives. While the external stimuli can be caused by a well-designed advertisement or a simple discussion with a friend that can lead one thinking about buying a product.

Finding this solution depends upon two factors: the magnitude of the difference between what we have and what we need, and the importance of the problem.

Part of need recognition is defining the problem in a way that allows the consumer to take the next step toward finding a solution. Consumers do not move on to the next step until they have confirmed that their specific needs are important enough to act on.

Marketers get involved in the need recognition state at three points:

1- In order to develop a marketing mix to address consumer's problems, they need to know what problems consumers are facing.

2- In order to push the consumer to start the purchasing process, they need to activate problem recognition within the consumers.

3- In order to influence their needs as they look for solution, they need to know how consumers define the need or the problem.

Marketing interactions through ads, web sites, salespeople, social medias and any number of other activities create opportunities for marketers to communicate with consumers and become engaged in need recognition.

2.2. Information Search:

After recognizing a need, the consumer will start searching for information to help identify and evaluate alternative products, services and experiences that will meet their need. The consumer goes through two levels if searching. The first search level is called heightened attention, meaning that the person becomes more receptive to information about a product or a service.

The second search level is active information search, which implies looking for reading materials, searching on the internet, discussing with friends etc. if a person decided to buy a car, he usually pays more attention to car ads, cars owned by friends and car conversations.

Information may come from any number of sources: family and friends, search engines, personal observation, consumer reports or product samples and it is up to him to define the most important resource depending on the type of purchase he or she is considering.

Information search involves both mental and physical activities that consumers must perform in order to make decisions and solve their problems through the marketplace. It can also identify new needs that the consumer did not pay attention to before.

Consumer may obtain information from several resources:

- The internal research: refers to the mental process of researching the information stocked in the memory.
- The external research: refers to information obtained from other different resources such as:
 - ✓ Personal: family, friends or neighbors.
 - ✓ Commercial: advertising, web sites, social medias, packaging displays etc.
 - ✓ Public: mass media or organizations.

In some cases, consumers may already have the information they need from their past experiences; good experience will reinforce their loyalty, while bad one will destroy the probability of re-buying the product again.

The promotion element of the marketing mix should provide information to help consumers in the decision process. That's why marketers have to choose the right information sources which their target consumers use during the search process, where they can develop a promotion strategy and tactics that can emphasize the characteristics of the product.

2.3. Evaluation of Alternatives:

As the consumer finds all the information that they need, they now try to identify the alternative products and services; to evaluate these alternatives in order to make a choice.

The way consumers evaluate these alternatives vary, from one to another and from purchase to purchase. They develop a mental list contains all the characteristics of these alternatives, one consumer may consider price most important while another puts more weight on quality. The first aspect of the evaluating process is the identification of the attributes; the second aspect is the consumer's beliefs and attitudes.

"A belief is a descriptive thought that a person holds about something." (Kotler & Armstrong, 2008). An attitude is a person's favorable or unfavorable evaluation and emotional feelings toward the product. These attitudes put people into a frame of mind: liking or disliking the product.

2.4. The Purchase Decision:

After a lot of searching and evaluating, consumers now have to decide whether they are going to buy, anything marketers can do to simplify purchasing will be attractive to buyers.

Marketers should look for opportunities to influence things in their favor at the point of purchase. Product pricing, labeling, and packaging can be hugely influential at this stage of the process. Product sampling and rebates may also give an extra incentive to buy. Personal selling, product display, convenience, and ease of finding the product may also lead the consumer to make one choice over another.

Determining how a consumer goes through the decision-making process is a difficult research task, because it can vary so much from consumer to consumer. The key for marketers is to be aware of the influencing factors and how to shape them in their advantage.

In this phase of the buying process, the consumer decides upon his decisional behavior, in the sense that he has the following possibilities:

- The decision of buying the product or the service, which is the purchase decision

- The decision of not buying the product or the service, which is the non-purchase decision
- The decision to delay the purchase.
- The decision of replacing the product or service that he wants with another product or service.

Non purchase decision: is when consumer decides not to buy that product and stop researching for it. It is due to many factors that lead consumers to change their mind.

Purchase intention: Purchase intention is a plan to purchase a particular good or service in the future. It is the willingness to buy particular products that depends on several factors, both internal and external; it could be changed, at any time, under the influence of price or perceived quality and value.

The purchase intention can be used to measure consumer demand for new products, or as a way that marketers use to forecast future sales and determine how the actions they take will impact consumer's purchasing behavior.

2.5. Post-purchase Behavior:

Post purchase consumer behavior is the final stage in the consumer decision process when the customer assesses whether he is satisfied or dissatisfied with the purchase. A consumer's feelings and evaluating after sale are so important for the marketer, because they can influence repeat sales and what the customer tells others about the product.

If the product "falls short of expectations, the consumer is disappointed; if it meets expectations, the consumer is satisfied; if it exceeds expectations, the consumer is delighted." (Kotler & Keller, Marketing Management, 2006).

Some purchases are followed by bad experience called post-purchase dissonance. It means that a consumer doubts the wisdom of their purchase. Some are followed by nonuse; they return or keep the product, without using it.

Marketing is all about keeping the customer happy at every stage of the decision-making process, including post-purchase, that's why they have to take specific steps to reduce post-purchase dissonance. One obvious way is to help ensure delivery of a quality solution that will satisfy customers.

Another step is to develop advertising and new-customer communications that stress the many positive attributes or confirm the popularity of the product. Providing personal reinforcement has proven effective with big-ticket items such as automobiles and major appliances. Salespeople in these areas may send cards or even make personal calls in order to reassure customers about their purchase.

3. Types of decision making:

3.1. Extended problem solving:

Extensive problem solving is the process that customer go through to collect the necessary information in order to be able to make a choice between different brands of a product that they want to buy. It occurs when the customer is purchasing a product that never been bought before, it corresponds to traditional decision making perspective.

Extended problem solving is often used when customers are purchasing high value items, such as buying new car or even choosing new holiday destination. This is why customers take their time searching and comparing alternatives in order to make a decision.

3.2. Limited problem solving:

Limited problem solving happens when customer is only willing to put minimal effort into making a decision about how to satisfy his or her needs and wants, where he or she uses simple decision rules to choose among alternatives.

Customer here is not going to take a long time or follow complex rules to reach a decision because of past experiences but not familiar with suppliers, product options, prices etc. The items purchased are low cost items or utility items that ones have no emotional investments into, such as toothpaste

3.3. Habitual decision making:

Habitual decision making is used when solving problems only requires minimal research, and choices are made with little to no conscious effort. Decisions here are automatically made.

People won't think too much and their involvement in decision making is very low because the product doesn't provide much difference from its rivals, such as milk or bread.

4. Decision making theories:

There are many theories and lots of research about decision-making, but the following three theories that have been chosen are the most adequate ones with real life situation. When we compare them in real life, we'll find that people are divided into three categories: the ones who think that they are rational enough to make perfect and optimal decisions and think in the most logical way. We'll find the ones who believe that there is no way to reach an optimal decision because humans have limited rationality, limited minds and thoughts. While the last category is people who know that even if they try to decide rationally and logically in a real-world situation, there will always be some uncontrolled factors that could interrupt the decision making.

4.1. The rational model:

Rational decision making brings structured and reasonable process to the act of deciding rationally, it makes it possible for the decider to support his decision by making the knowledge involved with the choice open and specific. This model is very helpful when it comes to making high value decisions that can benefit from the help of tools and expert's knowledge.

This theory assumes a rational and completely informed decision-maker, "economic man" who seeks to maximize his personal utility as described by neoclassical microeconomic theory around the middle of the previous century.

The process of rational decision-making comprises a number of steps, such as those given by Simon (1977):

- Intelligence: finding occasions for making a decision.
- Design: inventing, developing and analyzing possible courses of action.
- Choice: selecting a particular course of action from those available.
- Review: assessing past choices.

This rational decision making model is designed for problem-solving start from problem identification through solution; it is a good model for making logically sound decisions. It assumes that:

- Problems and objectives are clear.
- People agree on criteria and weights.
- All alternatives are known, and the consequences can be predictable.

-
- Decision makers are rational, not biased in recognizing the problems, and they are capable of processing all the other annoying information.
However, this ideal picture of decision-making faces a number of challenges, such as:
- The uncertainty about the consequences of actions: humans are boundedly rational, their ability to seek information is limited by their cognitive abilities and resources and therefore they can't always predict the results of their actions.
- Conflicts between decision makers: this model assumes that all the problems between the decision-makers can be resolved by rationality, which is impossible due to the way humans are made. They tend to rely on trust and reputation rather than formal agreements.

4.2. The model of bounded rationality:

Bounded rationality is the idea that when individuals make decisions, their rationality is limited by information they have, cognitive limitations of their mind and the time available to make the decision.

Decision makers in this view act as satisfiers who can only seek a satisfactory solution, lacking the ability and resources to arrive at the optimal one. This model assumes that the decision maker does not always have complete information, and that the optimal choices are not always required. This bounded rationality is caused by several reasons such as: limited time, knowledge, and computational capacity

According to Simon, “human rational behavior is shaped by a scissors whose two blades are the structure of task environments and the computational capabilities of the actor” these scissors cut the problem into smaller pieces to facilitate the research for the most optimal decision. In other words, bounded rationality is characterized by the activities of searching and satisfying, rationality cannot be defined except by reference to environmental and cognitive constraints, it is a tool for helping the consumer to make the most optimal decision in order to satisfy his or her needs.

4.3. The naturalistic decision making (NDM):

The NDM is concerned with investigating and understanding decision-making in its natural context, it aims to study the way people make decisions in a real-world situation where this situation is limited by time, uncertainty, unstable conditions and individual's personal experiences. The last factor is the key factor for better decisions.

The NDM framework focuses on cognitive function; such as situational awareness; and the ability to recognize a situation as being similar to that of the previous experience.

According to this model, the best way to reach the most optimal decision is by visualizing and analyzing the situation in its natural context until the decision-maker is comfortable with it to come up with the optimal decision. All this can happen in course of a few seconds due to the experience of the decision-maker.

If a situation is not recognized, more energy and time need to be spent for diagnosing. This is one of the critics that this model faces, people can find themselves in a whole different situation where they can't just rely only on their experiences.

5. Types of buying decision behavior:

Buying decision behavior differs greatly according to the value and the importance of the desired product.

5.1. Dissonance-reducing buying behavior:

Dissonance-Reducing buying behavior is the “consumer buying behavior in situations characterized by high involvement but few perceived differences among

brands” (Kotler & Armstrong, Principles of Marketing, 2008)

This behavior occurs when the consumer is highly involved but sees a little difference between brands. This is likely to be the case when purchasing a luxury product such as a diamond ring. The consumer here will experience the dissonance that comes from noticing that other brands are as good (or even better) as the brand that he chooses.

In order to prevent this feeling, marketers should provide an effective after-sale communication with evidence and support to help consumers feel good about their brand choices.

5.2. Habitual buying behavior:

Consumers manifest low involvement toward products that are cheap or frequently purchased like bread or sugar.

Consumers here are not going to search for the best brand or rate the product, because they are familiar with the products. “This is due to the Ad repetitions that create brand familiarity and not brand convection” (Kotler & Armstrong, principals of Marketing, 2008).

5.3. Variety-seeking buying behavior:

The consumer does a lot of brand switching just because he or she wants to try all the brands and not because they are not satisfied. Under these circumstances, the marketing strategy differs from the more leading brands to the less leading brands.

The leading brand will try to encourage buyers to purchase their products by dominating the shelf space and running frequent reminder advertising. While the other brands (challenging firms) will encourage variety by offering free samples or coupons.

5.4. Complex buying behavior:

Complex buying behavior occurs when the consumer is highly involved with the purchase and when there are significant differences between brands. This behavior is used when consumer is purchasing new items with high value. It is a very difficult task because the risk is high and the large differences between brands require gathering and searching for information.

Figure 7 Types of buying behavior

	High involvement	Low involvement
Significant differences between brands	Complex buying behavior	Variety-seeking behavior
Few differences between brands	Dissonance reducing buying behavior	Habitual buying behavior

Figure 7 resume all the types of buying behavior based on the types of products that are intended to be purchased

Conclusion:

Today everything revolves around the customer which means that the study of buying behavior becomes a necessity. So persuasion of the customers by the marketers has a great impact on their buying behavior, and in order to persuade consumers into buying a certain product, marketers have to study the consumer behavior, and understand what can affect their way of thinking, what kind of factors that can lead one's into changing his mind at any second.

Knowing all the external and internal factors, will give marketers a clear understanding of behavior patterns. And in order to attain success in this kind of environment, marketers need to design their products and marketing related strategies by identifying specific internal and external influences.

Introduction:

Research has shown that it is not only motivation that drives healthy eating behavior. To promote healthy eating, people should be motivated to do so and should be exposed to environments that offer them opportunities to act on their intentions and should be confident about their abilities.

It seems to be the case that many people are motivated to eat healthy, but not everyone is actually able to act on these intentions, this is why it has been argued that intervention to promote more healthy food choices should try to adjust the environment in which decisions are made, rather than focusing on health education. This can be done by nudging people toward better decision making, especially that the concept of nudging has become increasingly popular in this regard.

“Nudges are described as aspects of the choice architecture that can alter people's behavior in predictable way, without reducing freedom of choice or significantly changing economic incentives (Thaler R. H., Sunstein C. R. (2008)., Nudge: Improving decisions about health, wealth, and happiness. Constitutional Political Economy, 19(4), 356-360.)

This study will explore the potential of nudging healthier choices in a supermarket settings, by exploring the factors that can explain the perceived personal relevance of nudging healthier choices in the supermarket. The study is done to be applied in one of Numidis “UNO” supermarkets.

This chapter contains three sections:

- Section 01: Presentation of the company.
- Section 02: The methodology of the research.
- Section 03: Data analyses.

Section 01: Numidis “UNO”

1. General representation and historical background:

The market of mass distribution in Algeria represent 3% of the global market, despite the fact that this share is small, the sector is under development. Numidis is the first private Algerian company to invest in this sector by launching its chain of stores in all over the country.

Numidis, known as UNO, is a subsidiary of the Cevital group, stock company specializing in mass distribution and located in several regions of Algeria. It was created in 16th January 2007. It has more than 1640 employees at its assets.

With a human capital of more than 1,800 employees, it values each person's skills and offers opportunities for progression to all. Its ambition is to be the reference on the shared values it shares with its customers, employees, suppliers and shareholders.

UNO has developed mass distribution through the country, by developing a chain of stores of different formats: supermarkets (more than 1500m²), hypermarkets (more than 2500 m²), and convenience stores (more than 300m²). It is the first and the largest chain of hypermarkets and supermarkets in Algeria and it has continued to grow since its creation by opening the first supermarket in Rouiba in 2007, with 500 m² of space, and then the second in Gardi in 2008, with 2000 m² of space. And by the year of 2010, UNO took place in the history of mass distribution in Algeria by opening its first hypermarket in Bab Ezzouar, with 4950 m² of space and 340 employees. And the list of openings goes on, in different regions of Algeria such as: Sétif, Ain Defla, Mostaghanem, Blida, Zeralda, and soon in Constanitne and Oran.

2. Mission and activities:

2.1. Activities:

Numidis is present on the market with its multi-format stores in Algiers and in different regions such as Blida, Setif, Bouira, Ain Defla and Mostaghanem, its activity revolves around of three types of stores: hypermarket, supermarket and convenience stores.

Numidis also imports various products such as food products, cosmetics and personal hygiene products, household electrical products, baby products and also leather goods.

Backed by a solid and strong financial structure, the group has a balanced asset portfolio (industry, production, services, real estate activities) which contribute effectively to its growth.

Its policy of innovation, its commercial know-how and its voluntarist societal commitments make it a unique player in the supermarket world and allow it, on a daily basis, to implement its ambition.

One of the most recent activities that the company is executing is to incite people in general and its customers in particular to stop using plastic bags and replace them with recyclable bags and handmade baskets.

Their ambition is to stay the first references of Algerian families, by offering a large choice of a high quality products with the most affordable prices.

2.2. Missions:

Their missions are:

- Launch and develop mass distribution in Algeria by deploying a chain of stores in different formats, hypermarkets, supermarkets and convenience stores. And facilitate the everyday life of families.

- Develop a hypermarket chain and supermarket "UnoCity" and "Uno".
- Help in protecting the environment.
- Guarantee customer's satisfaction and respond to their expectations and desires.
- Promote local production.
- Distribute, exclusively, major international brands.

3. Numidis organization:

The organization of the company is done around two divisions: the functional unit and the operational unit.

3.1. The functional division:

It is the headquarters of the company Numidis and is located in Dar El Beida; the head office includes several structures attached to the general management, each structure is in charge of a certain number of missions and tasks, all the structures interact with each other and work towards the achievement of the objectives and the strategy of the company.

Figure 8: The organizational chart of Numidis.

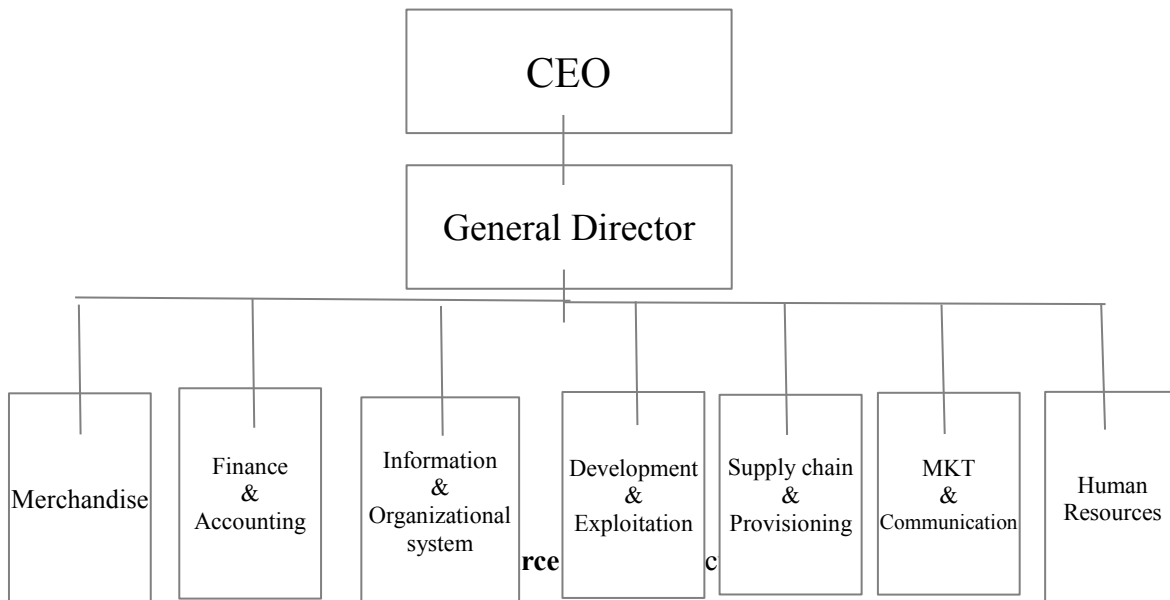
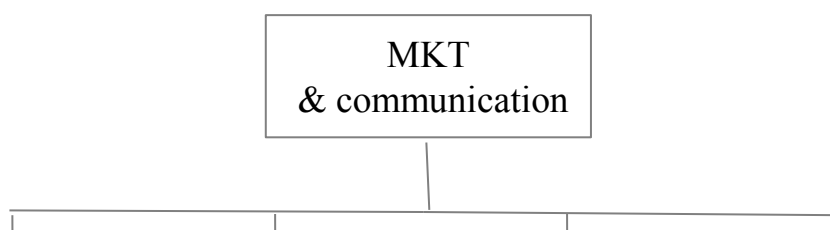


Figure 9 The organizational chart of marketing and communication department "Numidis"



Source: document from Numidis

3.2. The operational division:

This division carries out tasks that are specific to the stores such as, reception of the goods, sales, welcoming customers... etc. its operational and strategic decision-making centers are designed to ensure smooth operation, smooth flow of information, dynamic reporting and responsiveness.

Numidis "UNO" uses several ways of communication to establish contact and dialogue with its customers and therefore it tries to send specific messages to attract its customers, the company communicates more and more to meet the needs and requirements of different targets. It also communicates to strengthen its position in the supermarket market and conquer new market shares.

The ultimate goal of communication is to create a brand image that is favorable to the company and allows it to be anchored in the minds of consumers; this image is built gradually through the various communication actions with internal staff, the press externally in order to address its customers.

Section 02: The methodology of the research:

The objective of this study was to examine the effect of framing of benefits of nudging healthier choices in the supermarket and to investigate the relation between the motivation to make healthy choices and the personal relevance of nudging healthier choices. The study was conducted using an online questionnaire.

1. The methodology of the research:

Nowadays, promoting healthy nutrition behaviors still relies mostly on health education techniques that try to motivate people to adopt healthier lifestyle, but this technique won't be enough to motivate people to this behavior. In order to promote healthy eating, people should be motivated to do so, but when it comes to food decisions, people are not always rational. The environment they live in has a large influence on many of the unhealthy food choices.

This study will explore the potential of nudging choices in a supermarket settings, by exploring the factors that can explain the reasons of eating healthy foods.

So the main question of this study is “how can supermarkets improve consumer’s decision making by using nudge?” In other words: “how a commercial institution like a supermarket could use and promote nudging in a way that would keep the trust of consumers?”

In order to answer this question, two hypotheses will be tested:

- 1-Overt healthy behavior depends on personal relevance and behavioral intention
- 2-nudge only works when consumers are not motivated to exert healthy choices

2. Quantitative research:

In order to start the empirical part, an online questionnaire was conducted addressed to consumers who are responsible for daily shopping in supermarkets.

The questionnaire was written in both French and English languages to reach maximum numbers of responses.

The questionnaire is a direct technique of investigation used with individuals to make quantities sampling to find mathematical relationships and make numerical comparisons

3. Sampling:

Sampling is the representation of the elements of the target population.

3.1. The target population:

In this study the consumers who are responsible for daily shopping in supermarkets.

- Element: consumers aged between 21 and 30.
- Sampling Unit: Students and employees
- Time frame: June 2018.

3.2. Sample size:

Simple size used in a study is determined based on the expense of data collection, and the need to have sufficient statistical power. The sample size is an important feature of any empirical study in which the goal is to make inferences about a population from a sample.

In this research, the sampling size is 100.

3.3. Sampling technique:

The sampling technique in this study is non-probability sampling in which the subjects of the population get an equal opportunity to be selected.

3.4. Execution:

Generating random registration numbers from an online questionnaire

4. The design of the final questionnaire:

The questions used in this study are different; this will allow us to have precise answers and also will give the respondent the freedom to answer.

The questionnaire contains 17 questions where 3 of them were addressed to identify the target population.

- **Likert-type scales:**

Respondents are asked whether they agree or disagree with a statement. Each option is given a score, which can be used to analyze results.

- **Multiple choice questions:**

Multiple choice questions ask the respondent to choose between two or more answer options. Questions can be as simple as “yes/no” or can give a choice of multiple answers.

- **Identification questions:**

Questions used to identify the population (age, gender...)

The questions were organized according to the flow of information, starting with the general information to the restricted.

The identification questions were left at the end of the questionnaire.

In order to test the coherence and quality of questions, it was distributed first on some close friends and relatives before the final distribution.

5. The used analysis

In order to analyze the results in this study, a computer program called SPSS (statistical package for the social science) software was used.

The tests that were used to verify the hypothesis were: regression and cross tabulation.

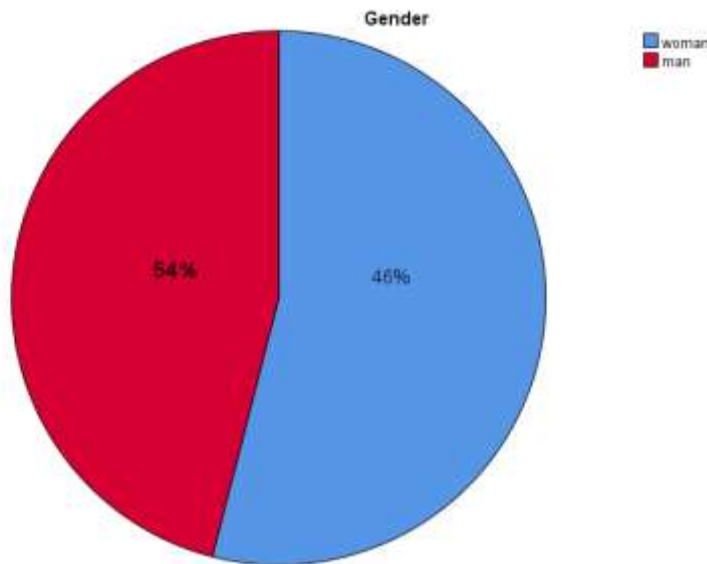
Section 03: Data analysis.

1. Questions analysis:

1.1. Characteristics of the respondents:

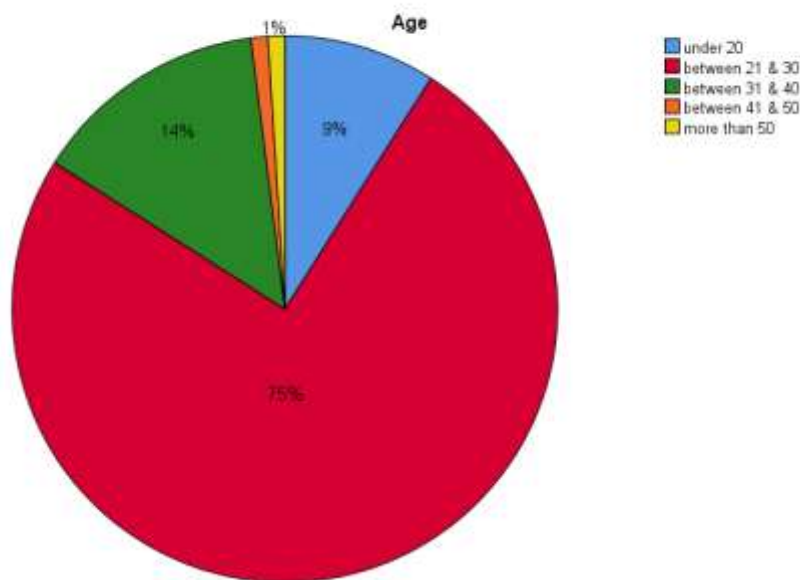
Firstly, we're going to analyze the questions used to identify the target population.

Figure 10 Sex of respondents



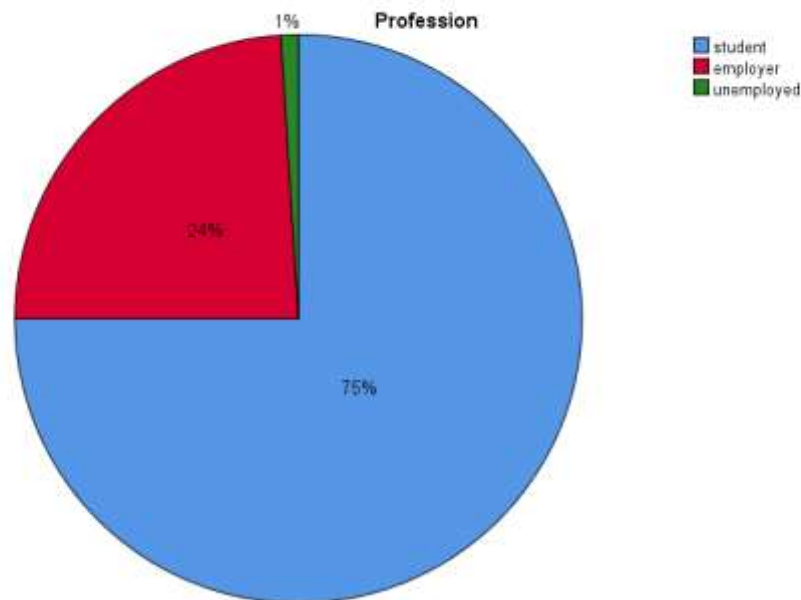
The sampling contains 100 respondents, 46 of them are women and 54 of them are men.

Figure 11 Age of respondents



More than half of the respondents are aged between 21 and 30 years old (75%). 14% aged between 31 and 40 years old, 9% are under 20 years and only 1% are between 41 and 50 or more than 50 years old.

Figure 12 Profession of respondents



Source: SPSS version 25

Students in this study represent 75% of the sampling population, 24% are employees while 1% is unemployed.

1.2. Test hypothesis 01:

In order to test the first hypothesis, which is “overt healthy behavior depends on personal relevance and behavioral intention”, a regression analysis was used to verify it.

A factor analysis is being used on question 4 and question 8

The factors extracted from the first factor analysis (personal relevance) and the second factor (overt behavior & behavioral intention) will be employed in regression analysis to test the 1st hypothesis: Overt healthy behavior depends on self-relevance and behavioral intention.

Factor analysis for question 4:

Table 2 Correlation Matrix

Correlation Matrix							
		V1	V2	V3	V4	V5	V6
Correlation	V1	1.000	.270	.248	.166	.253	.294
	V2	.270	1.000	.027	-.002	.377	.292
	V3	.248	.027	1.000	.691	.214	.271
	V4	.166	-.002	.691	1.000	.314	.332
	V5	.253	.377	.214	.314	1.000	.871
	V6	.294	.292	.271	.332	.871	1.000
Sig. (1-tailed)	V1		.003	.007	.049	.006	.001
	V2	.003		.396	.491	.000	.002
	V3	.007	.396		.000	.016	.003
	V4	.049	.491	.000		.001	.000
	V5	.006	.000	.016	.001		.000
	V6	.001	.002	.003	.000	.000	

Source: SPSS version 25

Where:

V1: "I can distinguish healthy products from unhealthy products".

V2: "I can recognize whether a product is healthy or not without reading the label".

V3: "I think it is very important to make healthy choices in supermarkets".

V4: "I really want to make a healthy choice in the supermarkets".

V5: "I am healthier than others on my age".

V6: "I eat healthier than others on my age".

The correlation matrix table shows the correlation coefficients between sets of variables. From this table, we can see that all correlations below 30% are not significant at alpha 5%. While all the correlations that are superior than 30% are significant at alpha 5%.

Table 3: KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.603
Bartlett's Test of Sphericity	Approx. Chi-Square	246.557
	Df	15
	Sig.	.000

Source: SPSS version 25

The Kaiser-Meyer-Olkin Measure of sampling adequacy (KMO) is a statistic that indicates the proportion of variance in variables. The value of KMO is 0.0603; it is larger than 0.5, which means that the factors analysis is considered an appropriate technique for analyzing the correlation matrix.

The Bartlett's test of Sphericity tests the null hypothesis that postulates that the variables are not correlated. However; the Chi square value 246.557 with degree of freedom of 15 is significant at alpha 5% which reject H0 and accept the alternative hypothesis where the variables are correlated.

Table 4: Communalities

Communalities		
	Initial	Extraction
V1	1.000	.274
V2	1.000	.518
V3	1.000	.810
V4	1.000	.824
V5	1.000	.808
V6	1.000	.784
Extraction Method: Principal Component Analysis.		

Source: SPSS version 25

The values in extraction column represent the variance explained by the factors.

27.4% of the variability in V1 (I can distinguish healthy products from unhealthy products) is explained by one of the factors.

51.8% of the variability in V2 (I can recognize whether a product is healthy or not without reading the label) is explained by one of the factors.

81% of the variability in V3 (I think it is very important to make healthy choices in supermarkets) is explained by one of the factors.

82.4%of the variability in V4 (I really want to make a healthy choice in the supermarkets) is explained by one of the factors.

80.8% of the variability in V5 (I am healthier than others on my age) is explained by one of the factors.

78.4% of the variability in V6 (I eat healthier than others on my age) is explained by one of the factors.

Table 5: Total Variance Explained

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.633	43.884	43.884	2.633	43.884	43.884	2.214	36.895	36.895
2	1.385	23.088	66.972	1.385	23.088	66.972	1.805	30.077	66.972
3	.908	15.127	82.099						
4	.659	10.985	93.085						
5	.295	4.925	98.009						
6	.119	1.991	100.000						

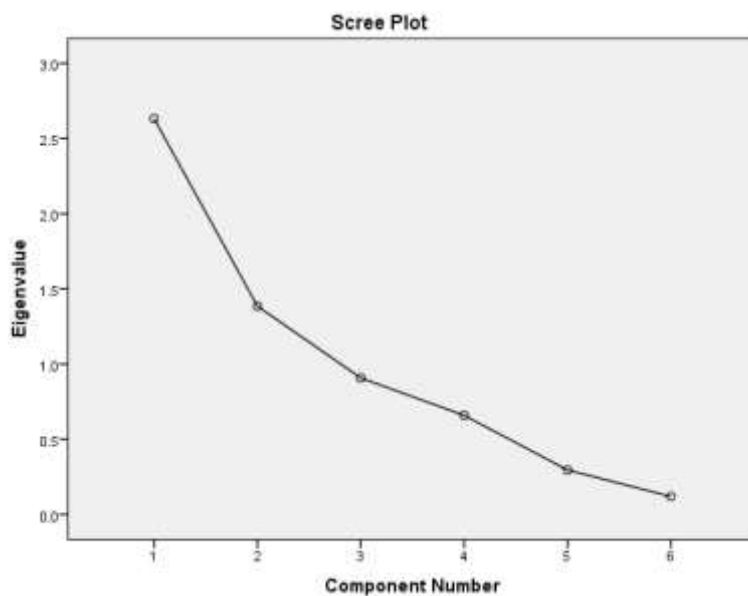
Extraction Method: Principal Component Analysis.

Source: SPSS version 25

Given the eigenvalues indicating the total variance attributed to these factors, we accept the eigenvalues greater than 1. The first two factors have variance (eigenvalues) greater than 1. Based on these results, only two factors will be retained.

The first factor represents a variation of 43.88% (2.63); the second factor represents a variation of 23.08% (1.38). The first two factors account for 66.97% of the total variance 100%.

Figure 13: Scree Plot



Source: SPSS version 25

This diagram represents the eigenvalues on the vertical axis and the number of component on the horizontal axis; it helps in determine the number of factors. Two factors are greater than 1. The remaining factors account for a very small proportion of the variability and are likely unimportant.

Table 6: Component Matrix

Component Matrix ^a		
	Component	
	1	2
V1	.510	-.118
V2	.437	-.572
V3	.605	.667
V4	.639	.645
V5	.833	-.338
V6	.845	-.264

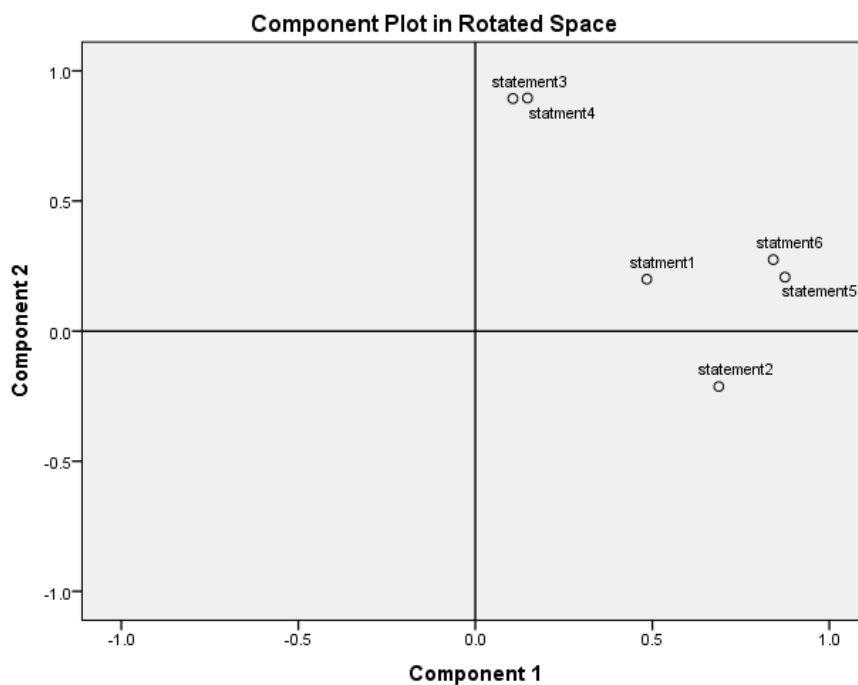
Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Source: SPSS version 25

Only variables; V1 (I can distinguish healthy products from unhealthy products), V5 (I am healthier than others on my age) and V6 (I eat healthier than others on my age) are highly correlated with factor one. While V2 (I can recognize whether a product is healthy or not without reading the label), V3 (I think it is very important to make healthy choices in supermarkets) and V4 (I really want to make a healthy choice in the supermarkets) correlate highly with factor two.

Figure 14: Component Plot in Rotated Space



Source: SPSS version 25

The variables that are located at the end of the axes have a strong correlation only with that factor.

Factor analysis for question 8:

Table 7: Correlation Matrix

Correlation Matrix							
		Social Status	Health Reasons	Social Pressure	Life Style	Appearance	Weight Control
Correlation	Social Status	1.000	-.013	.424	.137	.011	.170
	Health Reasons	-.013	1.000	-.160	.429	.487	.295
	Social Pressure	.424	-.160	1.000	.039	-.152	.172
	Life Style	.137	.429	.039	1.000	.539	.438
	Appearance	.011	.487	-.152	.539	1.000	.568
	Weight Control	.170	.295	.172	.438	.568	1.000
Sig. (1-tailed)	Social Status		.449	.000	.086	.457	.046
	Health Reasons	.449		.056	.000	.000	.001
	Social Pressure	.000	.056		.348	.066	.044
	Life Style	.086	.000	.348		.000	.000
	Appearance	.457	.000	.066	.000		.000
	Weight Control	.046	.001	.044	.000	.000	

Source: SPSS version 25

The correlation matrix table shows the correlation coefficients between sets of variables. From this table, we can see that there is a high correlation between; social status and social pressure. There is also a high correlation between; healthy reasons, lifestyle, appearance and weight control. These variables might be grouped into two factors:

- Factor 01 “overt behavior”, which includes four variables (healthy reasons, lifestyle, appearance and weight control).
- Factor 02 “intention”, which includes two variables (social status and social pressure).

Table 8: KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.679
Bartlett's Test of Sphericity	Approx. Chi-Square	141.418
	Df	15
	Sig.	.000

Source: SPSS version 25

This table shows two tests that indicate the suitability of data structure. The Kaiser-Meyer-Olkin Measure of sampling adequacy (KMO) is a statistic that indicates the proportion of variance in variables. The value of KMO is 0.679; it is larger than 0.5, which means that the factors analysis is considered an appropriate technique for analyzing the correlation matrix.

The Bartlett’s test of Sphericity tests the null hypothesis that postulates that the

variables are not correlated. However; the Chi square value 141.418 with a degree of freedom of 15 is significant at alpha 5% which rejects H0 and accept the alternative hypothesis H1 where the variables are correlated.

Table 9: Communalities

Communalities		
	Initial	Extraction
Social Status	1.000	.650
Health Reasons	1.000	.552
Social Pressure	1.000	.735
Life Style	1.000	.621
Appearance	1.000	.750
Weight Control	1.000	.619
Extraction Method: Principal Component Analysis.		

Source: SPSS version 25

In these results, two factors were extracted from the six variables; the communality values are generally high for all the variables, which indicate that variables are well represented by two factors.

65% of the variability in social status is explained by one of the two factors.

55.2% of the variability in health reasons is explained by one of the two factors.

73.5% of the variability in social pressure is explained by one of the two factors.

62.1% of the variability in lifestyle is explained by one of the two factors.

75% of the variability in appearances is explained by the two factors.

61.9% of the variability in weight control is explained by one of the two factors.

Table 10: Total Variance Explained

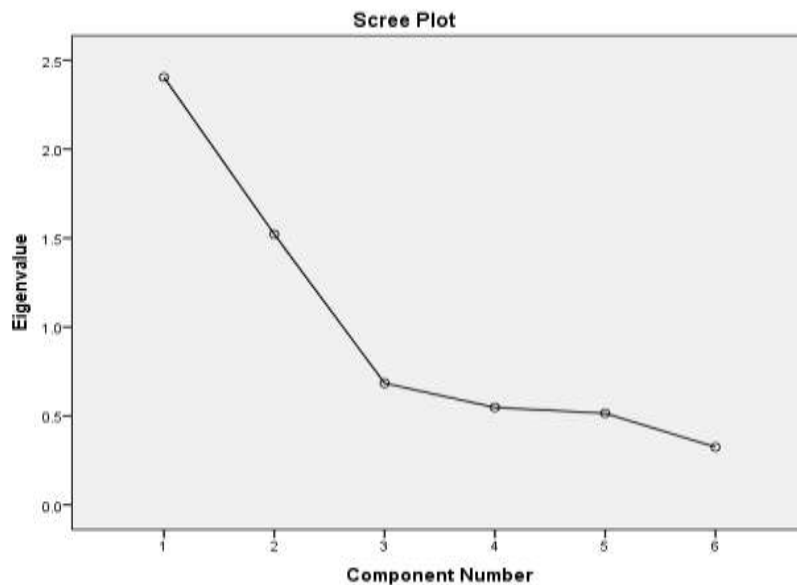
4- Total Variance Explained									
Comp onent	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.405	40.083	40.083	2.405	40.083	40.083	2.398	39.965	39.965
2	1.523	25.375	65.458	1.523	25.375	65.458	1.530	25.493	65.458
3	.684	11.408	76.866						
4	.548	9.137	86.004						
5	.515	8.585	94.589						
6	.325	5.411	100.000						
Extraction Method: Principal Component Analysis.									

Source: SPSS version 25

Given the eigenvalues indicating the total variance attributed to these factors, we accept the eigenvalues greater than 1. The first two factors have variance (eigenvalues) greater than 1. Based on these results, only two factors will be retained.

The first factor represents a variation of 40.08% (2.40); the second factor represents a variation of 25.37% (1.52). The first two factors account for 65.45% of the total variance 100%.

Figure 15: Scree Plot



Source: SPSS version 25

This screen plot shows that the first two factors account for most of the total variability in data (given by the eigenvalue). Two factors are greater than 1. The remaining factors account for a very small proportion of the variability and are likely unimportant.

Table 11: Rotated Component Matrix^a

5- Rotated Component Matrix ^a		
	Component	
	1	2
Social Status	.095	.800
Health Reasons	.712	-.212
Social Pressure	-.083	.853
Life Style	.778	.125
Appearance	.860	-.104
Weight Control	.728	.299

a. Rotation converged in 3 iterations.

Source: SPSS version 25

Only variables; social status and social pressure are highly correlated with factor 2, while healthy reasons, lifestyle, appearance and weight control correlate highly with factor 1.

The number of factors has been reduced from two factors to only one, as can be shown in the table of total variance explained below:

Table 12: Total Variance Explained

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.405	40.083	40.083	2.405	40.083	40.083
2	1.523	25.375	65.458			
3	.684	11.408	76.866			
4	.548	9.137	86.004			
5	.515	8.585	94.589			
6	.325	5.411	100.000			

Extraction Method: Principal Component Analysis.

Source: SPSS version 25

The factor that includes the variables; social status and social pressure, will be named “personal relevance”

Regression analysis:

In order to test H1 “overt healthy behavior depends on self-relevance and behavioral intention”, a regression analysis will be conducted, where the independent variables are “personal relevance and behavioral intention” and the dependent variable is “overt healthy behavior”.

Table 13: Model Summary

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.335 ^a	.112	.094	.95203628
a. Predictors: (Constant), Behavioral Intention, Personal Relevance				
b. Dependent Variable: Overt healthy Behavior				

Source: SPSS version 25

The R-square column represents the proportion of the variance in the dependent variable (overt healthy behavior) which can be explained by the independent variables (personal relevance and behavioral intention), in other words; how well the model fits

the data. In this case, the value is 11.2% which means that the model (which includes behavioral intention and personal relevance) explains 11.2% of the variance in the dependent variable (overt healthy behavior).

The value of the R-square is 11.2%, it cannot explain the model.

Table 14: ANOVA

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	11.082	2	5.541	6.113	.003 ^b
	Residual	87.918	97	.906		
	Total	99.000	99			
a. Dependent Variable: Over Behavior						
b. Predictors: (Constant), Behavioral Intention, Personal Relevance						

Source: SPSS version 25

This table indicates that the regression model predicts the dependent variable significantly well. The significance of the regression model here is 0.003 which is less than 0.05 and this indicates that; overall, the regression model significantly predicts the outcome variable.

The F value is a little significant; the f value calculated is greater than f value in the table (F=6.113). This means the null hypothesis is rejected.

Table 15: Significance test

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.000	.095		.000	1.000
	Personal Relevance	.428	.122	.428	3.497	.001
	Behavioral Intention	-.267	.122	-.267	-2.181	.032
a. Dependent Variable: Over Behavior						

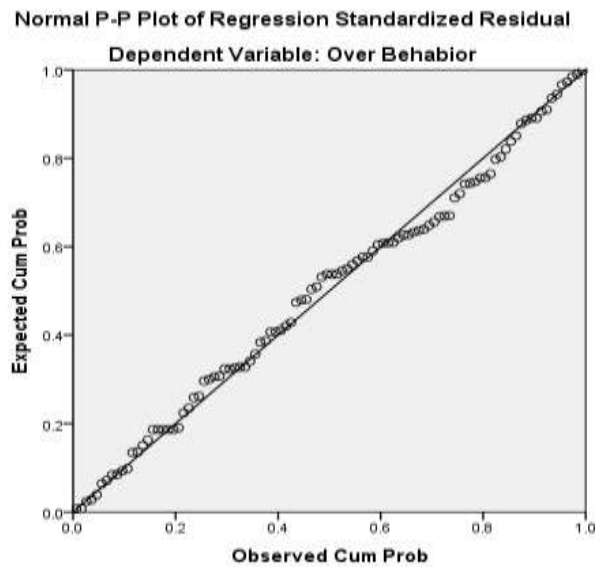
Source: SPSS version 25

This table tells us which of the variables included in the model contributes to the prediction of the dependent variable.

The variable “personal relevance” makes the strongest contribution in explaining the dependent variable (Beta=.428). The significance of this variable is 0.001, which is less than 0.05 and therefore it is significantly contributing to the prediction of the dependent variable.

The model that includes overt healthy behavior as the dependent variable and the personal relevance and behavioral intention as the independent variables is not significant, the sign of beta is negative (-.267) which means the linear relation is not validated.

Figure 16: Residual Normality test



Source: SPSS version 25

From this graph we can see that the points are lying in a reasonably strait diagonal line from bottom left to top right. This means that there are no major deviations from normality.

So this hypothesis, and according to the results, is rejected. Which means that the overt behavior do not depend on personal relevance and behavioral intention.

1.3. Test hypothesis 02:

In order to test the second hypothesis (nudge only works when the consumer are not motivated to exert healthy behavior) we will use the cross tabulation and chi-square test.

The dependent variable is nudging (the different scenarios of nudging healthy food) and the independent variable is motivation to eat healthy.

The first scenario is the new healthy shelf.

H0: "This nudge will only work with consumers who are not motivated".

H1: "This nudge will not work with consumers who are not motivated".

Table 16: Cross tabulation” Does eating healthy motivate u to choose healthy food * healthy shelf1”

Cross tabulation” Does eating healthy motivate u to choose healthy food * healthy shelf1”							
			healthy shelf1				Total
			totally agree	agree	neutral	don't agree	
Does eating healthy motivate u to choose healthy food	yes	Effectif	26	32	18	3	79
		Effectif théorique	23,7	30,0	22,1	3,2	79,0
		% of Does eating healthy motivate u to choose healthy food	32,9%	40,5%	22,8%	3,8%	100,0%
		Résidu	2,3	2,0	-4,1	-,2	
	no	Effectif	4	6	10	1	21
		Effectif théorique	6,3	8,0	5,9	,8	21,0
		% of Does eating healthy motivate u to choose healthy food	19,0%	28,6%	47,6%	4,8%	100,0%
		Résidu	-2,3	-2,0	4,1	,2	
Total	Effectif	30	38	28	4	100	
	Effectif théorique	30,0	38,0	28,0	4,0	100,0	
	% dans Does eating healthy motivate u to choose healthy food	30,0%	38,0%	28,0%	4,0%	100,0%	

Source: SPSS version 25

Out of 100 of the respondent, 79 of them are motivated to eat healthy while 21 of them are not motivated to eat healthy.

Out of 79 who said that eating healthy would motivate them to choose healthy foods, 32 (40.5%) said that they agree with the change of the shelf and that they would find it valuable if this shelf contained more healthy snacks and fewer unhealthy snacks, 26 of them (32.9%) were in total agreement with this change, 18 (22.8%) were neutral and only 3 of 79 (3.8%) were in disagreement.

Out of 21 who said that healthy eating would not motivate them to choose healthy foods, 10 (47.6%) were neutral towards this change, 6 of them (28.6%) agreed with it, 4 (19%) were in favor of this change and only one person (4.8%) were against it.

Table 17: Chi square test

Chi square test			
	Value	Df	Asymptotic significance (2- sided)
Pearson chi-square	5,378 ^a	3	,146
Likelihood ratio	5,085	3	,166
Linear-by-linear association	3,681	1	,055
N of valid cases	100		

Source: SPSS version 25

The P value (0.146) is larger than 0.05 which means that this change (new healthy shelf) will not work with consumers who are not motivated.

The second scenario is the new trolleys with special partitions for vegetables and fruits in order to make people buy more healthy fresh food.

H0: “This nudge will only work with consumers who are not motivated”.

H1: “This nudge will not work with consumers who are not motivated”.

From table 18 below we conclude that:

Out of 79 who said that eating healthy would motivate them to choose healthy foods, 34 (43%) said that they agree with this new change, 35 of them (44.3%) were in total agreement with this change, while 10 (12.7%) were neutral.

Out of 21 who said that they are not motivated to eat healthy, 8 of them (38.1%) were in agreement with this new change, 4 of them (19%) were in total agreement while 9 (42.9%) were neutral.

Table18: Cross tabulation” Does eating healthy motivate u to choose healthy food * new trolleys with partitions for healthy foods 1”

Cross tabulation” Does eating healthy motivate u to choose healthy food * new trolleys with partitions for healthy foods 1”						
		new trolleys with partitions for healthy foods 1			Total	
		tottaly agree	Agree	neutral		
Does eating healthy motivate u to choose healthy food	Yes	Effectif	35	34	10	79
		Effectif théorique	30,8	33,2	15,0	79,0
		% Does eating healthy motivate u to choose healthy food	44,3%	43,0%	12,7%	100,0%
		Résidu	4,2	,8	-5,0	
	No	Effectif	4	8	9	21
		Effectif théorique	8,2	8,8	4,0	21,0
		% Does eating healthy motivate u to choose healthy food	19,0%	38,1%	42,9%	100,0%
		Résidu	-4,2	-,8	5,0	
Total	Effectif	39	42	19	100	
	Effectif théorique	39,0	42,0	19,0	100,0	
	% Does eating healthy motivate u to choose healthy food	39,0%	42,0%	19,0%	100,0%	

Source: SPSS version 25

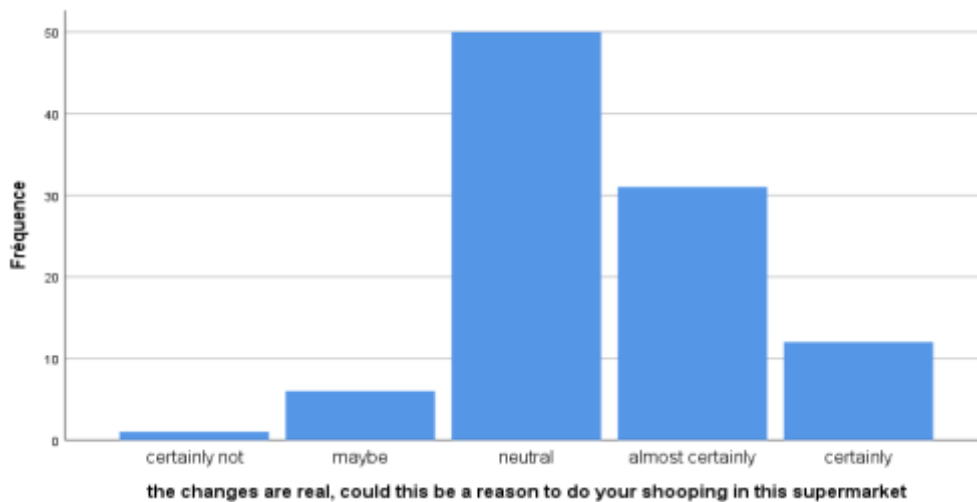
Table 18: Chi square test

Chi square test			
	Value	Df	Asympotic sifnificance (2- sided)
Pearson chi-square	10,773 ^a	2	,005
Likelihood ratio	9,811	2	,007
Linear-by-linear association	9,353	1	,002
N of valid cases	100		

Source: SPSS version 25

The P value (0.005) is less than 0.05 which means that this change (the new trolleys with special partitions for vegetables and fruits in order to make people buy more healthy fresh food) will work with consumers who are not motivated.

Figure 17: The Potentiel of shopping



Source: SPSS version 25

After asking the respondents about the possibility of shopping from this supermarket when these changes are implemented, 50% of them were neutral, 31% were almost certainty and 12% answered “certainly”

From these results we can say that this technique of nudging consumers toward healthy foods could actually works.

Conclusion:

From the previous results we can conclude that:

The first hypothesis; which is “Overt healthy behavior depends on personal relevance and behavioral” was rejected, meaning that people’s lifestyle and appearance... etc. Do not depend on behavioral intention (social pressure and social pressure) but depends more on personal relevance toward eating healthy.

The second hypothesis “Nudge works only when consumers are not motivated to exert healthy behavior” was accepted. Consumers want to be pushed in order to change their habits and eat healthy foods. That’s why marketers should develop new ways to nudge consumers toward a specific positive behavior

General conclusion:

Nudging or “choice architecture” refers to strategic changes in the environment that are anticipated to alter people’s behavior in a predictable way, without forbidding any options or significantly changing their economic incentives.

Nudging healthier choices in the supermarket as a means to prevent the population from healthy choices can be an effective strategy. Although it may not specifically attract people who are less capable of making healthy choices, nudging healthier choices does not seem to repel these people. The same holds for the motivation to shop healthily. Nudging healthier choices would then be effective if the supermarket sees a reason to implement it. This seems to be the case. Nudging healthier choices in the supermarket seems to be a means to improve customer loyalty among customers who are motivated to make healthy choices. However, further research is needed to confirm this finding, as it cannot be said that an increased personal relevance of nudging healthier choices directly translates into a higher probability of choosing the supermarket involved.

Further research is needed to know what kinds of nudges are still effective. This is important, as a supermarket can only attract new customers with nudging healthier choices when it can use it in its promotion. It would be even better if this research included different grades of transparency. That is, a supermarket could communicate that a specific nudge is being used to help customers make healthier choices, but a supermarket could also communicate that nudges in general are used to help customers. Moreover, it would be interesting to know whether the personal relevance of nudges would decrease in this case, as it would require more trust in the supermarket.

As a supermarket is a commercial organization, it would not directly benefit from implementing nudges to promote healthier choices. Thus, there should be focused on a clear link between the nudges and the profitability of the supermarket. It is therefore important that future research focuses on the actual strength of nudges in the supermarket to attract new customers, as only the personal relevance of nudges in the supermarket was measured in this study.

Further research is needed to explain that the personal relevance of nudging is not related to one’s observed ability to make healthy choices. It could be investigated whether people do actually evaluate the possible benefits of the nudges for themselves, or merely the possible benefits for all consumers involved. And if so, it would be interesting to know whether this is indeed the result of an overestimation of the ability to make healthy choices.

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The Questionnaire

As part of the preparation of a thesis to obtain a Master degree in commercial and financial sciences option Marketing and communication, we would appreciate your collaboration to fill this questionnaire, which aims at identifying the reasons and the motivations that lead people to choose healthy food and their reactions toward making new changes in a supermarket.

1. To what extent are you responsible for doing the daily shopping?

- Never.
- Sometimes
- Always.

2. You choose food according to:

- Taste
- Price
- Health
- Mood
- Weight control

3. Do you pay attention to:

	Never	To a Degree	Absolutely
Your food			
Your diet			
Your exercise program			

4. How much do you agree with the following statements?

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
distinguishing healthy products from unhealthy products					
recognizing whether a product is healthy or not without reading the label					
It is very important to make healthy choices in supermarkets					
I really want to make a healthy choices in the supermarkets					
I am healthier than others on my Age					
I eat healthier than others on my age					

5. Does eating healthy motivate you to choose your food?

- Yes
- No

6. To what extent are you able to make healthy choices in the supermarket?

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Resisting the temptation of unhealthy products in the supermarket.					
Making healthy choices in the supermarket.					

7. Do you consider yourself a healthy person?

- Yes
- No

8. You buy healthy foods because:

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
It's good for social status					
It's good for health					
My relatives and close friends buy healthy foods					
To live a healthy life style					
It is good for my appearance (Skin, teeth, hair...)					
Helps in controlling my weight					

9. Have you ever been pressured to do something that you don't want to do?

- Yes
- No

10. Imagine you are in a supermarket and you heard that there is a promotion for certain healthy foods. Will you be willing to buy?

- Yes
- No

If yes, how much do you agree with the following statements?

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
You'll buy because you want to eat healthy foods					
You'll buy because of the promotion					
You'll buy because people are buying too					

11. Imagine that A supermarket considers to introduce new trolleys. The new trolleys have special partitions for vegetables and fruits in order to make people buy more healthy fresh food.

How much do you agree with the following statements:

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
I would personally find it valuable if this change was implemented.					
I would be a supporter of this change`					

12. A supermarket is considering changing the shelf with snacks at the counter. The new shelf would contain more healthy snacks and fewer unhealthy snacks.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
I would personally find it valuable if this change was implemented.					
I would be a supporter of this change`					

13. Do you think that this supermarket is considering this change because?

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
It wants to help its customers with making healthier choices					
The supermarket expects to make more profit in this way by selling more fruits and vegetables`					

14. Imagine that a supermarket actually implements the two described changes. Could this be a reason for you to do your shopping at this supermarket?

Certainly not 1 2 3 4 5 certainly

15. Sex:

- Woman
- Man

16. How old are you?

- Under 20
- Between 21 and 30
- Between 31 and 40
- Between 41 and 50
- More than 50