LUISS

Department Of Impresa and Management

Chair of *Behavioural economics and consumption theories.*

The application of economics behavior towards the nudging innovation in social marketing communication. How the users perceives nudging: Is it always a winning strategy?

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INTRODUCTION

The paper starts from the overcoming of the neoclassical theory that believes in the standard economic paradigm of full rationality of the individual who, by making the best possible choices, arrives at the maximization of results creating well-being for himself and the community. It will show, however, how in reality decision-makers often fail to process all relevant information correctly and choose the option that maximizes their own well-being, leading to a deviation from the assumption of full rationality.

In fact, experience shows that, in conditions of uncertainty, individuals find themselves making decisions and adopting behaviours that are not aligned with the results of traditional models. This is because they may be conditioned or simply adopt simplified rules and criteria, based on intuition without a particular underlying logic (*ratio*), based on deep-rooted beliefs or context elements that help them to find the solution to more or less complex problems, giving rise to distortions, the so-called behavioural *bias*.

Effectively, our choices do not take place in a vacuum but have behind them a contextualization made of places, environments, architectures. The design of these environments has a significant impact on our decisions and, as if at a crossroads, we can go in one direction rather than another.

It is interesting to note that in the toolbox of policy makers until a few years ago who wanted to produce a behavioral change, through prescriptions, prohibitions, obligations and sanctions. In fact, another option has recently been added that has a link with the architecture of choice: nudging, a tool and technique that will be widely analyzed in the paper.

We will see how Nudging, through a sort of "gentle push", acting on the context and exploiting systematic distortions, aims to change people's behaviour by pushing them towards the best choices from an individual and social point of view.

It will also be observed how this technique can be applied in several fields and sectors, from economics to politics and the private sector: this mass communication strategy - thanks to the complicit help of behavioural economists, anthropologists and neuro-scientists - was adopted, for example, by Barack Obama in his election campaign rather than by Angela Merkel or the British government with the aim of silently influencing the population in the choices that the government considers best in terms of welfare, health, money management.

But this subliminal component has also recently taken over the new technologies that exploit the use of the Internet, creating the new frontier of "*anticipatory computing*", that is the ability of technology to anticipate the future by collecting and using the traces on the web to create forecasting models through which companies and governments can rely on to offer appealing products to the indistinct consumer audience rather than directing them towards certain behaviors.

And here the laws of marketing are rewritten to keep up with the times that mark the transition from traditional to digital marketing in which the role played by social networks such as Facebook, Twitter, Whatsapp, and Google are also widely discussed in this work. All this simply through the use of advertising windows that open by themselves, or through word associations on search engine strings or even by putting in place more complex communication strategies.

This is like a Copernican revolution in marketing: there is a shift in perspective that replaces the study of consumer tastes and preferences with the internalization of the latter into a product that is successful and appreciated by consumers.

In the light of this assumption we move on to address the issue of digital marketing or web marketing by analyzing the fundamentals of social media marketing, i.e. the assumptions on which it is based that also have an impact on communication that has passed *"from the billiards model to the pinball model"* (Kotler) because *"in the social world there are almost no more corporate messages launched with the aim of hitting targets, but content continuously relaunched between the company and users".*

It will also describe how social media marketing is mainly based on the use of social networks and tools to drive potential customers through a sequence of steps called funnel and convince them to take the desired action, such as becoming a new customer by purchasing the company's products or services.

The next juncture is represented by the analysis of web advertising using the nudge tool, supporting the theory so far exposed of behavioural sciences through the examination of practical cases of success related to online advertising campaigns that through particular tecnicisms such as *framing* or *anchoring* (by a non-exhaustive example, just to name a few) affect our judgment and ways of acting.

We will try, therefore, to give greater clarity to the concept of nudge by focusing and reviewing the various strategies that use it and that are, in particular, used both in the digital world, through online advertising and related practical cases of success, such as the Levissima case, or through apps for smartphones that use nudges, and in the offline world (gentle urges aimed at achieving more green behaviors in terms of environmental sustainability).

We will then demonstrate the pervasiveness of nudge in various areas, until we get to the daily life through a new study of nudges and behavioral sciences in a context of health emergency such as the one we are living with the Covid-19.

But perhaps the most interesting thing about this journey in the behavioral sciences will be to answer this question: what attitude does an individual have when faced with traditional communication techniques compared to others that make use of nudge strategies? Which are the most effective in directing the individual towards the adoption of a certain behavior?

The purpose of this paper is therefore to confirm or refute the statement that consumers are positively influenced by social marketing communication using nudge techniques.

To answer this question we will carry out, as we will see later, an experimental study through the adoption of an empirical approach to examine the reaction of the human mind when it is subjected to different stimuli: some descriptive and prescriptive and others that instead employ nudge strategies and gentle urges that lead to the adoption of certain behaviors.

It was therefore built a questionnaire created with the aim of testing, through simple graduated questions with the help of the likert scale, the reaction of the participants in front of each of the macro themes identified and analyzed developing for each of them, two scenarios (nudge and not nudge).

The five macro-themes identified, in particular, concern: (i) Health promotion by encouraging the use of scales; (ii) Promotion of environmental sustainability through the adoption of Green behaviors; (iii) Bait effect: Proposal for a biennial subscription of a magazine; (iv) Promotion of personal hygiene in public places; (v) the administration of a video through which the effectiveness of the technique called social proofing will be tested, i.e. the influence that social dynamics can have on the adoption of a certain behavior by an individual.

The questionnaire will be submitted to a heterogeneous sample of 255 people and the results will be analyzed, with the help of the statistical software SPSS, through a quantitative analysis from which we will derive some qualitative implications that will show how in general communication methods using nudge strategies are more appreciated than traditional methods that ask to do or not to do something.

In particular, for each macro-theme we will study the answers provided by the sample from which, through an inductive method and with the help of statistics, we will try to obtain a universal behavior valid for the majority of participants.

We will try to answer the above questions trying to understand if with nudging we run the same risk of subjecting our target to an excess of thrusts, albeit delicate, because the final effect could, at times, be opposite to what we expected.

In fact it can happen that too much information and too many stimuli can become an annoying background noise that is no longer heard.

Here then, just as for neuromarketing, the most complicated phase is the psychological interpretation of the response to the impulses provided. As soon as the response begins to be negative or bored, the message has to be quickly modulated, but always keeping that labile border between freedom of choice and the influence in pursuing the latter through a gentle push.

But for a more in-depth analysis of the results obtained from the study, please refer to the fourth and final chapter, the experimental part of the study.

CHAPTER 1

1.1 Neoclassical theory and traditional models: the behaviour and traits of homo economicus.

The *homo economicus* is a central representation of classical economic theory and the fulcrum on which the various traditional models based on the rationality of the individual. The main characteristic of *homo economicus* is to act and be driven by personal interest to obtain the maximum result in all circumstances, with minimum effort or cost.

In order to achieve his objective, this individual must know what his most urgent needs are and will be in the future, so that he can make exactly the best choice, for example for the purchase of a certain basket of goods and services.

However, the social sciences consider this to be an unrealistic hypothesis, and often sociologists and psychologists - who have made a significant contribution to behavioural economics - prefer structural explanations to the actions of individuals rather than strictly rational explanations, since in reality there are many variables and factors in the individual's decision that interfere with the concept of rationality.

But before coming to the criticism of neoclassical theories, the *humus* on which new models and theories will be born, let us decline the concept of rationality attributed to *homo economicus*, in the light of which such an individual:

(i) has preferences to which it can attribute a sequence order, derived from the transitive property;

(ii) it is able to maximize its satisfaction by making the best use of its resources by tending to maximize its usefulness;

(iii) it is able to analyse and predict the situation and facts of the surrounding world in the best possible way, in order to make the most correct choice with regard to this maximization.

In economics, making choices that lead to the achievement of individual well-being is synonymous with maximizing one's "utility function". It follows that the sum of the utilities of individuals in a given society is considered as social welfare.

In an entirely free market, by attributing these rational characteristics to all economic agents, it is possible to prepare economic models that maximize the utility of each individual and therefore respond to the sub-hypothesis of market efficiency. In particular, the neoclassical school, over the years, has created various models that describe the economic behaviour of an individual and among these can be recognized at least three main paradigms for the analysis of consumer choices:

1. the approach oriented to the concept of Pareto efficiency and ordinary utility (whose main exponents were V. Pareto, Sir J.Hicks and R.G.D. Allen);

2. the revealed preferences approach (due, among others, to H. Houtakker and P.A. Samuelson).

3. the subjectivist approach centred on the concept of expected utility (mainly due to von Neumann and Morgenstern);

The concept of rationality of *homo economicus*, the common thread of the various models that study its behaviour, is also found in the theory of Pareto's efficiency, whose aim is to define a "social optimum" given by the best use of the scarce resources available and the best distribution of the results of these uses among individuals, thus achieving a desired collective well-being.
This theory is based on some general ethical assumptions adopted by the Welfare Economy which can be summarized as follows:

- assumes that individuals are rational and are the best "judges of themselves";

- a "non-organistic view of society" is adopted. The "State" exists, but it is not an autonomous source of values. The will of the State is nothing more than that which results from the aggregation of individual will (preferences)";

- it assumes the Pareto criterion ("principle of efficiency"), according to which "a reallocation of resources that improves the well-being of an individual without causing harm to others represents an improvement in the well-being of society".

Classical economic theory shows that, under conditions of perfect competition, the market is able to reach a point of equilibrium where there is an optimal distribution of goods and it is not possible to improve the situation of one member of one community without worsening that of another.

The excellent Paretian is a concept applicable to any economic regime such as pure competition or a monopoly with perfect discrimination. However, when applied to a market economy, it emerges that pure competition is superior to other forms such as monopoly and oligopoly because the same competition automatically arrives at the optimum while it is much more difficult to achieve it in a planned economy.

Therefore, an efficient market in the Paretian sense starts from the assumption identified in pure competition which will reflect in the prices of goods their scarcity according to the principle of supply and demand. The scarcity of a good, together with the fact that demand exceeds supply, will cause a high price and vice versa.

This system will achieve full efficiency when goods are placed in the hands of those who are willing to pay more. A peer-efficient market and thus a competitive market is essentially characterised by three main factors: efficiency of production, efficiency of trade and efficiency of product composition.

The first occurs when companies produce the maximum possible volume of goods, i.e. when any ratio of production factors allows the use of the same at 100%. If, on the other hand, there were an unexploited production capacity, we would see an inefficient situation.

The efficiency in the exchange, instead, studies the distribution of two goods between two individuals. The exchange between the two subjects happens according to the principle of the Edgeworth box[1], that is, always on condition that neither of the two is damaged by the exchange and that at least one is advantaged.

However, also the model of Wall's efficiency has some limits to be found substantially because it does not explain how the resources are distributed among the individuals: it could be efficient that one subject holds a certain quantity and the other nothing. On the other hand, an unequal situation could generate discontent in society and this could justify the intervention of other actors, such as the State, to redistribute resources among individuals.

Here, then, the theories that postulate an autonomous and endogenous power of the market deputed to reach alone the point of equilibrium that generates the maximum efficiency, meet ethical-social limits that can give rise to situations of market failure.

Another neoclassical paradigm used to describe the analysis of the choices of the consumer and, therefore, to represent the economic behaviour that descends from it, is the axiom of the revealed preference proposed by P. Samuelson in 1938[2], according to the classrooms, an individual (rational) made a choice between two objects (a) and (b) will maintain this choice unchanged in every condition and in subsequent situations the rational consumer will behave coherently with the first choice, always preferring (a) to (b)[3].

"*…..The theory of expected utility, or utility theory for short, has been used in economics as a descriptive theory to explain various phenomena such as the purchase of insurance and the relation between spending and saving. Utility theory has also been employed as a normative theory, in decision analysis, to determine optimal decisions and policies. The axioms of utility theory (e.g., transitivity, substitutability) are accepted by most students of the field as adequate principles of rational behavior under uncertainty*[4]."

[1] In Edgeworth's box, curves of indifference are represented; the point of intersection of the latter identifies a sort of "lens" where all the co
ntracts acceptable to both parties are contained, i.e. the allocations that constitute "Wall improvements" with respect to the initial allocation, i.e. the set of Pareto-efficient allocations.

[2] (WARP, WeakAxiom of RevealedPreference)

[3] Kahneman, 2003, p. 163.

[4] Tversky, 1975, p. 163.

Finally, as mentioned above, another of the main theories dealing with the analysis of the behaviour of individuals "modelled" according to economic and logical criteria is the "theory of expected utility" by von Neumann and Morgenstern (1947); it, based on certain axioms proposed by its authors that define the logic underlying decision-making behaviour[5], considers man as a rational and predictable being, who knows the alternatives available to him, evaluates them and chooses the one that gives him the greatest utility.

Therefore, this theory is based on the circumstance according to which the individual has the possibility of knowing a priori what are the preferences of a rational subject in the face of a choice of an economic nature, once the elements of the problem have been established and known, and once it has been ascertained that the rational choice will be the one that satisfies and corresponds to the maximum utility that one is able to obtain from that precise situation.

The decision is seen as an algebraic elaboration of the information on the probabilities held by the decision-maker. Therefore, starting from the assumption that the five axioms are verified, it is possible to construct a utility function for the subject making the choice according to his preferences, so that if the choice A is preferred to the choice B, the utility function of A will be greater than the utility function of B and we can write that: $U(A) \geq U(B)$.

[5] ASSIOM 1: complete sorting of preferences; so that each individual manages to sort the alternatives according to an order of preferences, you must be able to make a comparison and get a preference report, it is an important property because it excludes the possibility of not being able to make a ranking on preferences.
ASSIOM 2: continuity of preferences; a person confronted with an alternative with a probability distribution with a better and a worse event is always able to indicate a probability that makes him or her indifferent.
than the alternative with certain results.
ASSIOM 3: Independence of the alternatives: also called criterion of the certain thing, if the subject prefers alternative A with respect to alternative B, which now shows the presence of a third alternative C, this does not change the preferences of the subject.
ASSIOM 4: transitivity of the alternatives: between three alternatives A, B, C, if the individual prefers A to B ($A > B$), and prefers B to C ($B > C$), then it must be true that A is preferred to C ($A > C$); if this does not happen a circularity would be created and the individual would not be able to make a decision. Completeness and transitivity are considered indispensable to have a classification of the preferences of individuals.
ASSIOM 5: not satiety: the consumer is never satiated, a greater quantity will always be preferred over a smaller quantity. The growth of preference increases with the growth of probability, and given two alternatives with the same gains, the one with higher probability is preferred.

Once the utility function is created, the rational individual will choose the alternative that maximizes the expected utility level U(x), defined as the weighted

average of the utilities of the single alternatives using as weights the probabilities of the occurrence of the considered alternatives.

U(x) = ∑_(i=1)^n pi U (wi)

If we want to translate the above into quantitative terms, we suppose that a person wants to make an investment, which allows him to earn A with a certain probability (p) and to earn B which is less than A with a complementary probability to the first (1 - p). The expected VA value of this investment is calculated as follows:

VA = p · A + (1 - p) · B

If we assume that the probability of the two alternatives is 60% (p = 0.5) and alternative A is worth 5000 and alternative B is worth 2500, the expected VA value of the investment would be 4000.

By comparing the various types of investment among the various risky alternatives, the individual is led to choose the alternative with the highest expected utility, i.e. the one with the highest gains or the lowest losses, in accordance with his or her order of preference, i.e. his or her function, which therefore corresponds a numerical value to each preference.

However, if this theory can be valid in a context of certainty, in which the individual has all the information to associate to each alternative a probability of realization, it is subject to criticality just when there is no certainty and the difference between the situation of risk and the situation of ambiguity is precisely given by the information and the possibility of knowing or not the associated probability. The limits of this theory give rise to other schools of thought that take into account factors and variables not considered until now.

Economists such as Thorstein Veblen, John Maynard Keynes, Herbert Simon, and many of the Austrian school, criticize *homo economicus* as the true protagonist of macroeconomic phenomenon and economic forecasts. They attribute a decisive role

to uncertainty in economic decisions, casting shadows on the idea of a man who can coldly calculate the optimization of the utility function from circumstances. They argue that perfect knowledge is not feasible, from which it follows that every economic activity involves a certain risk.

The traits that have identified the characteristics of *homo economicus* with the maximization of utility, which we find in the theories of the neoclassical school, have been the object of study and deepening, but starting from the second half of the 20th century the notion of economic agent has been questioned, suffering some criticisms that were born from the different way of considering the human element within the economic theory, highlighting some points of fragility.

The theory of rationality in its classical formulation, which had reached a critical moment, was therefore destined to be broken by manifesting all its limits: the principles and postulates to which it was inspired and the role attributed to it as a micro-base of economic analysis were subverted by new considerations and studies that made empirical and cognitive analysis a new foundation. New elements, however, elusive to the rationality of *homo economicus*.

Tversky and Kahneman's studies led to experiment new and significant methods of empirical research, (as Allais had also shown), which led cognitive psychology to become one of the areas of investigation to explain behaviors and decisions that otherwise could not be explained with the indications dictated by the theory of rationality. In fact, scholars began to notice that in the behaviour of an individual there were variables and factors that distanced the latter's action from a modus operandi inspired by a canon of pure rationality.

One of these was the knowledge of the man who intervenes in his decision-making and cognitive process, positioning himself in a phase prior to the choice to be made among the various alternatives that present themselves.

Simon himself said that the choices that individuals make are dictated *"not only by certain complete and consistent goals and the properties of the outside world, but also by the knowledge that decision-makers possess - or do not possess - of the world, their ability or inability to evoke such knowledge at the right time, to process the consequences of their actions, to predict the possible course of events, to deal with uncertainties (including uncertainty arising from the possible reactions or responses of other actors) and to choose between their different competing needs"* [6]

Therefore, the knowledge that the individual possesses is a point of reference in his decision-making process in the course of which the individual is attributed the ability to distinguish external stimuli and to modify them through understanding, representation and imagination. Through the analysis and study of these elements, the individual is able to represent a situation and then reach a decision.

Here, then, is the way forward from the static notions of individual "calculation" and social calculus, a new vision that profoundly re-examines the cardinal principles to which these notions were inspired, suggesting their overcoming through a strand of thought that connects economics, psychology and the sciences of the artificial.

This strand suggests that the actions of individuals in the real economic world should be studied not only in terms of rationality but also in the light of the human mind's ability to frame problems and represent reality in innovative ways.

A new discipline is born that through a cognitive approach applied to economics, investigates the classic - but unresolved - question of decision-making and creative learning in human beings, stimulating and inspiring attempts to reformulate many aspects of economic and financial theory.

The new bridges that are being consolidated to unite different disciplines can be attributed to a large extent to your innovative research on the borderline between economics and psychology.

[6] Simon 2000, p. 25

In this direction it is possible to include Simon's studies on bounded rationality and problem solving with which the author himself criticized - based on empirical experiments - the lack of realism of economic theory based on the neoclassical assumption of full rationality.

Similarly, also Allais' pioneering studies on the expected violations of utility theory, demonstrate the systematic divergence between the predictions typical of traditional decision theory and real behavior.

With the subsequent discoveries of Kahneman and Tversky, which also introduced new and effective methods of empirical research, in the wake of what Allais had already demonstrated, cognitive psychology became a fundamental area of investigation to explain behaviors and decisions that otherwise remained unexplained, due to the permanent discrepancy with the prescriptions of the theory of rationality.

The cognitive approach draws its own micro foundations in the understanding of human mental activities underlying the phases that intervene in the decision-making process of individuals.

In 1956 Cyert, Simon and Trow conducted an empirical analysis of managerial decisions that revealed how the behavior also implemented by organizations could be characterized by a kind of "dualism", guided on the one hand by a consistent choice between different alternatives, typical of structured and repetitive conditions and, on the other hand, a behavior characterized by problem solving where the conditions underlying the choices made are very uncertain and poorly defined.

The different capacity for adaptation and organizational learning is the crucial element that can generate differentiation and sub-optimality in behaviors and therefore in choices. However, individuals as well as organizations during these processes can make mistakes that can be systematic and persist in the long term resulting in permanently inefficient organizational configurations.

Many studies derived from experimental economics have shown that human decisions present systematic deviations from rational decisions and that in many cases "errors" persist even when the rational solution is explicitly presented to the subjects. This phenomenon occurs both in individual and group decision-making processes.

For example, it may happen that organizations make systematically wrong decisions, and they remain trapped in routinized strategies that are not changed even when they are particularly sub-optimal; Levinthal and March (1993) define them as a series of "traps" into which an organization may fall during the organizational learning

process, namely when they have experienced the "success trap" by focusing on always experiencing the same actions that once led to past success.

"As a result, an organization that falls into this trap tends to anchor its activities in processes of organizational "exploitation", to the detriment of research and innovation activities".

In Organizations, March and Simon deepen this observation and provide a definition of "routinized behaviors" "we will consider a series of activities as routinized activities, [...] to the extent that the choices have been simplified and reduced to a stimulus-response mechanism. If [in the decision-making activity] the research has been eliminated and the choice remains in the form of a clearly defined and systematic calculation routine, we will say that the activities are routinised (March and Simon 1993, p. 142).

The studies by Choices, Values and Frames, Tversky and Kahneman in the mid 1970s also revealed that another variable intervenes in the psychological principles that govern the creation, perception and evaluation of alternatives in decision-making processes: the so-called "framework", i.e. the mode of representation of a given problem.

They found that preferences vary substantially according to the way in which a problem is presented ("framed", "framed"), showing that individuals make different choices according to different representations of the same situation, thus also giving rise to a reversal of preferences.

This suggests that the crucial aspect of the decision-making process is the ability to construct new representations of problems: a primordial and anticipatory step that lays the foundations for what will be the nudging strategies used also in the advertising field, which include framing techniques that act not only on the context but also on the way in which information is presented.

1.2 Humans and Econi in comparison: how people think and decide. The overcoming of the standard economic paradigm of full rationality of the individual and the behavioural bias.

As we have seen earlier, one of the hypotheses on which the orthodox paradigm in economics bases its predictive models is the concept of absolute rationality. The man who is defined by such models is seen as a computer, a perfect machine capable of counterweighing and making decisions by evaluating without margin of error the information available to him, arriving at the best solution through the optimization criterion. However, we have seen that such a subject cannot exist and the idea of absolute and innate rationality present in individuals begins to be unhinged in the middle of the 20th century.

The concept of limited rationality, according to which *"the individual is not capable of processing, predicting, monitoring and managing all the variables that occur in the process in a linear and exhaustive way, is beginning to become apparent. In this case, man, through the criterion of satisfaction, will arrive at the solution that best satisfies his needs".* (Lipari, 1987, p. 16).

The idea of limited rationality refers to a model of human being not idealized, but rather anchored to his own context, endowed with a limited mind, unable to predict without making mistakes, able to find acceptable solutions adapted to situations.

In fact, the human mind, due to its own objective limitations that make it impossible to have a complete and well-defined vision of information and a capacity for predictive accuracy, is unable to find optimal solutions to problems; therefore, the choices are made according to criteria of specific rationality, local and contingent, which is typical of the operator at a given time and in a given context and which leads him to adopt not the absolute best solution, but the solution that for him, at that time and in that context, will prove to be the most satisfactory.

Kahneman in the book "Nudge, Improving Decisions About Health, Wealth, and Happiness" explains the overcoming of the standard economic paradigm of full rationality of the individual and cognitive bias through the analysis of the functioning of the human brain. He distinguishes between two different cognitive systems, one intuitive and automatic, called system 1 or impulsive, the other reflective and rational, called system 2.

The impulsive system receives rapid signals and impulses and is perceived as instinctive (in fact, the activities of this system are associated to the oldest parts of the brain) while the reflective system is more measured and conscious. To understand in a more transparent way the functioning of these two systems it is necessary to unite the impulsive system to visceral reactions and the reflexive system to conscious thinking.

Often, relying on the impulsive system, mistakes are made despite the visceral feelings tend to be quite precise and accurate. In order to explain these concepts more clearly, Kahneman sets out targeted examples that encourage man to use system 1 most of the time:

1- "A racket and a ball cost a total of 1.10 euros. The racket costs 1 euro more than the ball. How much does the ball cost? ________________euro.
2- If 5 machines take 5 minutes to make 5 tools, how long does it take 100 machines to make 100 tools? ___________________ minutes.
3- In a lake there is a spot of water lilies. Every day, the size of the spot doubles. If it takes 48 days for the stain to cover the entire lake, how long does it take for the stain to cover half of it?"[7]________________

Statistically, the majority of people tend to answer 10, 100 and 24 respectively. The correct answers, however, are 5, 5 and 47. The Econi, on the other hand, - being strongly rational beings therefore dissimilar from humans who are strongly "imperfect" and have limited will and decide on the basis of elements of trust, of resemblance to optimism - never make an important decision without being subject to their own reflexive system.

But sometimes Humans are content with the response given by the primitive system within them, without taking the time to recall system 2 and reflect. One of the

[7] Richard Thaler and Cass Sunstein ,"Nudge, Improving Decisions About Health, Wealth, and Happiness".

main objectives of the author is to understand whether individuals can make certain choices using the impulsive system without encountering dangerous mistakes.
According to Kahneman there are practical rules that we rely on when we have to make an assessment because we are unable to think and analyse any information. However, although these rules are often quick and useful, they can cause systematic distortions.

Tversky and Kahneman have identified three heuristic rules or practices, which we will soon see, that can be found in the cd. "anchorage, availability and representativeness" associating to them the relative distortions that can be manifested.

These distortions are called behavioral bias. According to the classical definition, cognitive bias is *"a judgment (or prejudice), not necessarily corresponding to the evidence, developed on the basis of the interpretation of the information in possession, even if not logically or semantically connected to each other, which therefore leads to an error of evaluation or lack of objectivity of judgment"*[8].

This definition captures the two essential aspects of a bias, namely: (i) the concept linked to the error (ii) the circumstance that the cognitive bias arises from a heuristic application, i.e. from a type of reasoning that, as opposed to the algorithmic type, provides for a decision to be reached by relying on intuition rather than following a procedure of sequential verification of the steps necessary for the purpose.

This style of decision making is preferable in those situations in which the scarcity of cognitive and temporal resources prevents an in-depth and weighted evaluation of all the elements or when the output required from the cognitive system concerns familiar or already consolidated procedures.

Psychologists Kahneman & Tversky started a research program called "Heuristics and Bias Program", in order to understand how human beings mature decisions in contexts characterized by ambiguity, uncertainty or scarcity of available resources. The results showed that the basic assumptions of classical decision theory had been overcome, leading the two authors to develop a new approach from which to look at human decision-making processes in an attempt to arrive at a model that was

[8] Wikipedia source.

as representative as possible of real human behavior and as far from the traditional neoclassical imprint imposed by previous theoretical approaches.

As mentioned before, one of the most frequent cognitive bias is anchorage. Through the following example we see how this process works and how the related distortions derive from it. Two inhabitants of two different cities (Rome and Lamezia Terme) are asked to define, according to them, the number of inhabitants present in the city of Naples.

The first one (coming from Rome) will tend to say 1/3 of the inhabitants of his city because Rome is a very big city with about 3 million inhabitants, while the second one will tend to say about 4 times the number of his city (composed by about 80 thousand inhabitants) so about 300 thousand.

This process is called "anchorage or adjustment". You start with an anchor, i.e. the number you know, and you adjust it in the direction you consider most congruent (adequate). Distortion occurs when adjustments are usually insufficient. Experiments have repeatedly shown that, in problems similar to the example just shown, the inhabitants of Rome tend to produce estimates by excess while the inhabitants of Lamezia Terme produce estimates by default.

Anchors act as goads[9]. In this regard, the question to be examined is whether these goads can influence the response of individuals in a particular situation by imperceptibly suggesting a starting point for its decision-making process. For example, as part of a donation to a non-profit organisation or organisation, a range of options are available for such a donation.

As can be seen from the experiments carried out, depending on the framework presented, the donor will be conditioned in his choice. And usually the more generous the options, the more people choose to donate a higher amount.

Availability: with the heuristics of availability, on the other hand, the authors wonder whether we really need to worry about events such as terrorism, earthquakes or

[9] A goad is a stimolous arisining from impulses.

situations that could harm our safety and whether we should try to avoid their risks, and again whether we should and how, prevent such dangers.

In answering such questions, individuals usually use the so-called heuristics of availability, weighing the probability of the risks according to the difficulty with which they are able to connect a relevant or similar event.

The quicker and easier they can think of relevant examples, the more likely they are to be frightened or worried. Two other concepts, such as accessibility and relevance, are strongly related to the concept of availability. Similarly, the most recent events in time space have a greater impact on our behavior, the way we think about certain situations and our fears than more remote events. In all cases where an example is easily recalled to our mind, the impulsive system is deeply aware of the risk, without having to consult statistical tables.

The heuristics of availability helps to analyse and understand many risk-related behaviours, as well as influencing public and private decisions on the precautions to be taken.

Distorted risk assessment can have a perverse influence on the way we prepare to respond to crises, economic choices and the political process.

When a "distorted availability" arises, both private and public decisions can be improved through the use of prods that report assessments in line with the true probabilities of the case. An effective way to increase individuals' fear of a negative event is to remind them of a similar incident in which things did not go right; instead, it is enough to remind them of a similar situation where everything went right to increase their confidence.

Representation: the third of the heuristics identified by Tversky and Kahneman is heuristics of similarity or representativity. The idea is that, in assessing the probability that A belongs to category B, individuals react by asking themselves how similar A is to the image or stereotype they have of B.

Also this heuristics, like the other two previously described, is effective and therefore widely used. To better understand the concept behind let's make a practical

example: between a 1.65 cm tall man and a 2 meters tall black man we would be more inclined to think that the latter can in all probability become a professional basketball player, because usually the players of this sport are black individuals of high stature.

However, when similarities and frequency do not match, some distortion or bias is likely to occur. Such bias results from a defect that the individual manifests logically, for example when one is led to believe that a pair of events is more likely to occur than one.

Let's give an example: in an experiment if we represent to participants that Linda is an imaginary woman, an activist during her university studies against discrimination and social justice the same participants will be led to believe that Linda could become an active bank teller in the feminist movement rather than just a bank teller. However, on a logical level a similar response is not correct and incorporates a bias: impulsiveness.

In fact, although it is more likely that only one event will occur and not a pair of two events - as Linda is more likely to become just a bank teller and not just an activist bank teller in the feminist movement - the heuristics of representativity seems to be that inner voice that interferes with logical thinking by saying to take the character description into account!

The logical error derives from the use of heuristics of representativity. The use of such heuristics can lead to seeing patterns, or recurring motifs, even where there are none. When events are dictated by chance, as in the repeated toss of a coin, one tends to think that the sequence of "head" and "cross" is representative of some idea of randomness.

We often see patterns because we build informal tests only after having analyzed the empirical evidence. Experience teaches us that cognitive illusion is so strong that many people (influenced by their impulsive system) are not even willing to consider the possibility that their beliefs are wrong.

The use of heuristics of representativity can lead individuals to confuse random fluctuations with random patterns.

<u>Optimism and overconfidence</u>: individuals are often unjustifiably optimistic even when the risk is high. Excessive optimism explains why many individuals expose themselves to this risk, even when, in the most serious cases, they expose their health and life to danger. Unreasonable optimism is a very frequent behaviour, which characterises the majority of individuals in most social categories. Banally, everyone knows that half of all marriages end in divorce, but at the time of the ceremony they believe that it can only happen to others, while for themselves there is zero chance of the unfortunate event happening.

By overestimating personal immunity from harmful events, many individuals do not take adequate preventive measures. Those who take risks because of unreasonable optimism could benefit and be prodded. In this regard, a proper sting that can cool down excesses of optimism is to bring to the individual's mind the occurrence of a related negative event.

Earnings and losses: it's in the nature of individuals not to suffer losses. Speaking roughly, when you lose something you feel more unhappiness than the happiness you get from gaining that same thing. The aversion to loss produces inertia, that is, a strong adherence to what one already possesses. Being so averse to loss already acts in itself as a sting because we are not pushed to make changes even when they are convenient because they are in our interest.

Distortion towards the status quo: The aversion to loss is not the only cause of inertia. The "distortion towards the status quo" is a phenomenon caused by the individual's preference to prefer the context in which they already live rather than entering into contexts unknown to them.

One of the causes of the distortion towards the status quo is the lack of attention. Many people adopt the heuristics of "but yes it is the same". A good illustration of this process is the pulling effect in the viewing of TV programmes (I don't change channels as much as one or the other in the absence of a really interesting programme).

Because of the aversion to losses and the carelessness in the choices, or more simply because one tends to remain in one's "comfort zone", the default option attracts a large market share, thus acting as a very effective sting, i.e. directing one towards a "non-choice"; in many contexts, then, the action of prodding or pushing is even more powerful, because consumers perceive, rightly or wrongly, that the default solutions are the best in absolute terms, because they have the implicit approval of the person who has chosen them, be it the employer, the government, or the person in charge of television programming.

Formulation: individuals in the experiments to which they are subject react differently depending on how the information is presented. For example, if a subject has to undergo a delicate operation and the doctor who subjects him to such operation presents the percentiles of success of the experiment as "ninety out of one hundred survive" or "ten out of one hundred die", although the content of the two statements is exactly the same, he tends to have two completely different attitudes.

Experts also feel the effect of the formulation. The wording is important in many areas. Formulation = Framing. The basic concept is that people tend to choose differently depending on the formulation of the problem presented to them. This is particularly relevant for public policy.

Formulation is effective because individuals tend to make decisions in a passive and careless way. Their reflective system is not committed to checking whether a different formulation of the question might lead to a different answer; the reason for this lack of action is that individuals would not know how to explain the contradiction. As a result, the formulation of a message is a very effective tool and must be presented with great precision and accuracy.

To conclude, human beings initially try to ingenuate themselves into a system that is too complex, which is why they resort to reasonable practical rules that sometimes encourage them to choose the wrong alternative. Because they are busy and have limited attention, they accept the questions as they are asked, rather than trying to determine whether they would be willing to give different answers in the face of alternative formulations. From this, it can be deduced that individuals are all "prickable". Their choices, even in life's most important decisions, can be influenced in a way that is not generally contemplated by the traditional economic paradigm.

For completeness, it is represented that, in addition to the bias analyzed above, a multiplicity of cognitive bias has been identified and clustered in the literature; their taxonomy is offered below in tabular form.

BIAS	**Short description**
Affection effect	It concerns the influence of the emotional connotation towards objects that can alter the rational decision-making process.
Anchoring heuristic	It is about the effect that benchmarks have on the assessments made by individuals.
Aversion to ambiguity	Decision-makers are opposed to ambiguity
Availability heuristic	Some events, facts or objects are more considered because they are easily recalled.
Base rate fallacy	It is the tendency to ignore the rationale of a population in

	favour of mental representation.
Belief bias	It is a cognitive bias that induces individuals to make a decision based on their beliefs.
Confirmation bias	This is a tendency that leads individuals to prefer information that confirms their hypothesis and to avoid possibilities to the contrary.
Conjunction fallacy	It is a violation of a logical rule that occurs when certain representative events are considered more likely than they actually are.
Distinction bias	Individuals in decision-making processes are influenced by the way they evaluate: single or joint.
Endowment effect	It's an effect that leads individuals to assign a higher value to what they already have.
Forer effect	Individuals tend to accept vague and general personality descriptions as applicable only

	to themselves, without realizing that the same description could be applied to anyone.
Framing	It is a phenomenon that influences the decision-making perception, based on a positive or negative decision-making context.
Gambler's fallacy	This is an effect that leads individuals to consider short sequences dictated by chance as statistically relevant.
Hindsight bias	It is a mental process that leads individuals to consider an event that has already occurred as more predictable than it actually is.
Hyperbolic discounting	It is a phenomenon that leads people to prefer inconsistent dynamics in the choice of future options.
Information bias	It's a bias due to irrational information management.

Illusion of superiority	Often in some activities, individuals tend to rate themselves as above average.
Imaginability bias	Easily imaginable events are considered as more likely.
Opportunity cost	It is the cost of the option not chosen, generally lower than the cost of the option already chosen.
Optimism bias	It is the tendency to consider a future outcome as more likely if positive but less likely if negative.
Planning fallacy	It is an illusion that leads individuals to underestimate the time it takes to complete a task.
Prominence effect	It is a phenomenon that happens when an option has an important attribute that influences preferences compared to a direct comparison between the different options.
Pseudo certainty effect	It is an effect that leads individuals to consider an

	outcome as more certain than it actually is.
Reference price	It is the tendency to assign a price to an object based on the context.
Regression toward the mean	It is a phenomenon that leads individuals to disregard the effect of chance on a series of events.
Regret aversion	It's a tendency to avoid regret over choices already made.
Sunk costs fallacy	In economics, Sunk costs are budgetary expenditures already incurred but considered more likely to compromise future budget management.
Self-serving bias	It is a bias that occurs when individuals attribute their successes to internal or personal factors and their failures to situational factors, independent of their will.
The extra-cost effect	This is an effect that leads individuals to assess a cost more because it has already been incurred.

Representative bias	It is the disposition to violate the Bayesian probability calculation in favor of a representative option.
Wishful thinking	It is the tendency to assess an event as more likely because it is more desired.
Zero risk bias	It is the tendency to avoid any form of risk and to prefer an option that could eliminate any threat at the expense of the expected usefulness of the other options.

BOX 1: *Taxonomy of and Heuristics in Ceschi et al. (2012)*

From a practical point of view each of these types of bias can, individually or in conjunction with others, influence and distort our decisions. However, the 4 bias of representativeness, framing and anchoring seem to be the ones that best lend themselves to be studied from a multidisciplinary point of view if we consider that their pervasiveness is not limited to financial decisions.

On the contrary, if we consider the systematic distortions that intervene in scenarios in which the decision-making process involves economic entities or financial choices, the cognitive bias can be summarized as follows; there is the confirmation bias, found in the tendency to overweight the elements that confirm the correctness of one's own idea or decision and similar to this distortion there is the overconfidence bias identifiable in the tendency to place excessive trust in one's own choices and predictive capacities.

Other deviations attends to the disposition effect substantiating itself in the tendency to maintain securities in loss and to cede securities in increase rather than to the loss aversion that is configured in the tendency to consider more important a loss

that a gain of equal entity. Finally, the sunk- cost bias is the tendency to continue an unprofitable activity due to the non-recoverable costs already invested in that activity.

Over the last few years, following the numerous experimental evidence on cognitive bias, a new line of research has been developed whose objective is to create procedures for the reduction or attenuation of cognitive bias that are called "debiasing processes". This mechanism is based on the change of perspective, nudging and external control and on some elements that constitute the practice of mindfulness[10].

So the neoclassical framework, which has established itself by crystallizing the process of rational choice and stripping it of any psychological and descriptive content, suffers a setback. The model of *Homo economicus* over which prevails a more mechanical soul, at the service of the mathematical constraints of an analytical process, is destined to decline.

The merit of the pioneering studies of Herbert Simon (1955), or Jon Elster (1979), was in fact to question the very concept of rationality.

The human brain begins to be treated for what it is: an organ with precise calculation limits as regards the ability to process information. People, in the concrete act of making a decision, do not respond to optimising logics, but follow - as seen - heuristics.

[10] Meditative practices aimed at ultimately influencing an individual's behavior through the activation of certain areas of the brain and particular neural connections.

1.3 The architecture of choices and the impact that the design of environments has on our decisions.

In 2009 Thaler and Sustein's book from the title "*Nudge: improving decisions about health and happiness*" was published. The paper offers various tips to a category of subjects including all those who have the responsibility to design the social context in which people interface to make decisions of all kinds. These subjects, defined by psychologists and economists as "architects of choices", play a decisive role, being able, through their abilities, to influence the decisions of individuals in many areas.
In fact, we can find architects of choices in any field, often without the knowledge of the subject.

By giving a few examples, we can include in this category the legislator when, with regulatory measures, he guides the conduct of citizens, rather than the parents when they offer their children a set of options concerning education or a doctor who explains to the patient the possible therapies that can be undertaken in the face of a pathology.

These individuals, consciously or not, structure a social context in which the individual will be able to make one or more decisions according to the specific case. Sunstein and Thaler emphasize the important role played by architects of choices. They assume as the foundation of their practice two conditions: on the one hand, that individuals are not always in a position to choose the most suitable solution in terms of cost-benefit, and on the other, that it is correct to influence their behaviour in order to steer them towards more appropriate choices.

Starting from these axioms, scholars therefore seek to highlight the contributions that small adjustments in the social context can offer, in ensuring a better architecture of choices.

Nudging is therefore every aspect in the architecture of choices that alters people's behavior in a predictable way without prohibiting the choice of other options and without significantly changing their economic incentives. To count as a mere goad, intervention should be easy and inexpensive to avoid. Goads are not orders.

As mentioned above, "architects of choices" use different tools in order to influence the behaviour of individuals, tools that can be divided into two main categories:

(i) "those used in the structure of choice options such as the number of alternatives, technologies and decision-making aids;

(ii) those used in the description of options such as partitioning and option design"[11].

In order to facilitate people's involvement in the decision-making process, improving the individual's post-choice satisfaction, it becomes crucial to focus on the architecture of choices.
Designing a choice environment means building the number of options available, their position, the structure in which they are presented, the levers on which to focus in order to define and guide the decision-making process.

Research in neuroscience and cognitive and behavioral sciences has shown that our brain decides on the basis of two systems:

1. A reflective system, based on rationality, deductive reasoning, the rules of logic. It is a slow system, which consumes a lot of energy;

2. An automatic system, linked to the sphere of unconsciousness and based on instinct, on associations. It is a much faster system than the one described above.

Our choices are not random and neither do they take place in an "empty" space because we choose within locations, environments, architectures. The structuring and organization of these environments have a considerable influence on our decisions, pushing us in one direction rather than another.

The nudging is predetermined to design architectures of choice, contexts in which we are called to make our decisions, which exploit systematic distortions to "gently push" us towards the most appropriate choices from an individual and social point of view.

[11] From Richard Thaler and Cass Sunstein "Nudge, Improving Decisions About Health, Wealth, and Happiness".

For this reason, this approach is also called "libertarian paternalism": on the one hand, paternalistically, it is decided that a given choice is better, for individuals and for the community - such as saving as effectively as possible in view of retirement, protecting the environment, safeguarding physical health - but on the other hand, there are neither obligations nor prohibitions. On the one hand, people are prodded in a transparent way, directing them towards the best choices, but, at the same time, all the different options are left open, which is why the adjective "libertarian" is used.

The architect of the choices is called upon to follow certain steps aimed at constructing in an appropriate manner the structure of the environment in which an individual will have to come across in order to make a final decision.

We start therefore from the analysis of the variables that affect the behaviour of the subject starting from the stimulus-response compatibility: the basic idea is that the stimulus received must be reconcilable with the action that we want to encourage. If the two variables are incompatible, the performance worsens and the subjects are more prone to error. To understand how these stimuli and the required action interact, Sustein gives a very simple example: "Subjects see a sequence of words flash on a computer screen and have the task of pressing the right button if they see a word written in red and the left button if they see a word written in green.

The subjects in the experiment found this task simple by quickly performing it until they were misled by the word "green" written in "red" and vice versa. This change consequently slowed response times and error rates inevitably increased.

The reason for these consequences is that system 1 or impulsive reads the word in less time than system 2 or reflexive reads it to identify the colour of the text. In operations like the one just described, it is always the reflective system that dominates over the intuitive system. Architecture sometimes fails to take into account the psychology of individuals.

The most successful example among the architectures of the choices was the insertion of a fly (fake, drawn) inside the urinals of the air port of Amsterdam that reduced urine spills by eighty percent, a magnificent result for a goad. The entrepreneur Kempel turned the fly experiment into a business by producing fly stickers online.

So whenever we are able to influence individuals' choices indirectly, we can say that we become "architects of choices", whose orientation is based, as mentioned, on a good understanding of their behavior.
We therefore illustrate below some tricks and principles to be taken into account for a good architecture of choices.

Default options: trace the path of least resistance

The majority of individuals tend to choose the options that involve the least effort, i.e. the path of least resistance. The default options are present everywhere, in any context, and they are also indispensable, in the sense that to every facet of a system of architecture of choices is necessarily related a rule that defines what happens if the subject who decides does not take a position. As said, the default rules are inevitable.

The architect of choices can force individuals to make their own choice. This approach is called "choice obligation" or "choice duty". For Humans, the obligation to choose can be demotivating: better when this is the case, to have a default option made available. Also, when a decision is difficult and complicated, individuals may prefer a reasonable default option. Obligation to choose is preferable for simple, dichotomous decisions rather than for more complex choices. Pushed to the extreme, when decisions are very complex, the obligation to choose may not be a good idea, indeed it may be harmful.

Account for the error: all human beings make mistakes. In a well-designed architecture of choice complex, it is clearly put into account that individuals make mistakes and we try to be tolerant with those who make mistakes. Over the years, systems have been studied such that human error can be overcome by simple tasks that become part of everyday life. For example, cars have been designed over the years to be easy for Humans to use through task simplification systems.

If you do not fasten your seatbelt, the car's interior system will cause the alarm to sound, if fuel is running out, the warning light will illuminate to indicate this, and so on.

The car can also signal when an oil change is required. Consider the fuel tank cap. In some car models, the cap is tied to the tank by a plastic tab, so you can't forget it. Forgetting to take the fuel filler cap after you've had your filler cap is a predictable type of error, which psychologists call a "post completion" error. The idea is that when you complete the main task you set yourself, the individual, not being a perfect machine, tends to forget the "extra" outline. Other examples of post-completion error are forgetting the ATM card in the ATM after making a cash withdrawal. One strategy to eliminate this error is the use of a forcing function, which forces the user to do something before reaching the target.

Another example of good design related to the architecture of the choices, is the spout for the different types of fuel. These diesel pump tools are too big to fit in the tank of petrol cars and therefore no mistakes can be made. The same principle has been used to correct mistakes made in anaesthesia procedures.

Give feedback: One of the most effective ways to help Humans perform their various tasks is to give them feedback. Well-designed systems inform users when they act correctly and when they make mistakes.

An important type of feedback is the signal that something is not going right or, better still, that something is going wrong. Laptops, for example, alert us when the battery is about to run out, suggesting that we plug in the power cable or turn off the computer. However, when designing alarm systems, you should avoid entering too many warning inputs as the user will end up ignoring them.

Understanding the mappings: from choice to well-being.

An optimal choice architecture system helps individuals to improve their ability to map their decisions and choices, and thus determine which alternatives will increase their well-being. This relationship between choice of option and individual well-being is called "mapping". To do this, a good choice architect should make the information that reaches the decision-maker more understandable, transforming or better decoding the more complex information into information elements that are easier to understand.

Structuring complex choices:

In making certain choices, individuals use different strategies depending on the number and complexity of alternatives available. When the alternatives proposed are easy to understand and short, the human being will tend to analyze all their attributes, making choices based on compromise where necessary. But when the total number of options starts to be too high, different strategies have to be undertaken and this can create some problems.

A valid strategy to combat this difficulty of choice could be the weighting of the variables and attributes present in the scenario to understand the best choice for personal satisfaction (Fishbain index). Another possible similar alternative is what Tversky calls "elimination by aspects". Those who apply this strategy first decide which variables are the most important for their satisfaction, then set a maximum threshold, and then eliminate all the alternatives that do not meet this criterion.

The process is repeated attribute by attribute until the correct choice is made or the set of possible alternatives is sufficiently limited to allow an evaluation of the "finalists" according to a compensatory strategy.

When a simplification strategy of this kind is used, options that are inadequate because they do not reach the minimum satisfaction threshold are definitively discarded.

In the field of social sciences, there has been a great deal of research into the multiplicity of choices that vary according to size, and these studies have revealed that the greater the number and complexity of alternatives, the more work the architect of choices will have to do to ensure that the individual can be properly influenced.

Another method of making individuals choose between alternatives in a simpler way is called "collaborative filtering". Using the opinions of other people with similar preferences to one's own, one can "filter", for example, between the many options that arise at any time of the day, for example when one has to make a choice about the movie to watch or the book to read.

Collaborative filtering is, therefore, an attempt to solve a problem of choice architecture. Knowing what is preferred by people with habits and tastes similar to their own, you feel more confident and convinced in choosing a product you don't have much information about, as it is also appreciated by others. Such collaborative filtering therefore facilitates complex choices.

Incentives: to conclude our speech, let us face the assumption with which most economists would have started: prices and incentives. Incentives must be taken into account when designing an architecture of choices. Good architects will be able to give the right people the right incentives.

According to the authors a correct way to approach the choice of the right incentives by architects of choices is to ask four questions about a particular architecture: who do they use? Who does he choose? Who pays? Who benefits?

An example could clarify the behavioral analysis of incentives, elements to be taken into account in the systems of choice architecture and the dynamics related to them. A family must choose whether to buy a car or to use a taxi or, alternatively, public transport. The cost - opportunity linked to the possession of a car is given by the fuel, maintenance, annual car policy while the cost linked to the purchase is probably ignored.

The family choosing, despite the above mentioned operating costs, the purchase of a car, highlights how the concept of "relevance" related to the cost of using a taxi is a factor that weighs heavily on the choice made: the taximeter that clicks every few meters gives the idea of a high level of expenditure.

Therefore, the costs related to the use of the taxi are far underestimated because they are not often related to the considerable initial outlay for the purchase of the car. It is clear that a careful analysis of the choice architecture systems will have to take due account of these dynamics by acting on their relevance and focusing individuals' attention on incentives.

1.4 The pervasiveness of behavioural economics in the choices of the individual: Theory and application of Nudges

We have said that the nudge or "light push", "goad", or even identified in the "gentle push", takes into consideration the set of tools, mainly based on information, with which it is intended to influence and steer towards any direction of behavior in a variety of areas; for example, as we will see shortly, nudging strategies could also be used by public authorities to promote certain behaviors considered (by the same regulator) desirable.

Or they are often used in private and entrepreneurial logic or used in order to increase welfare and collective utility: one of the examples taken as reference by Thaler and Sunstein concerns the energy sector.

The authors highlight the potential cost savings that the community could benefit from if electricity suppliers included in their bills a rough calculation of how much users could save if they invested in measures to increase energy efficiency.

Positive results in this respect were obtained following an experiment conducted in California, where in order to convince San Marcos citizens to save electricity, almost three hundred households were informed about the amount of energy consumed in the previous weeks, as well as the average energy consumption of households in the neighbourhood.

This meant that, both because of the awareness of the amount of pollution produced and the expenses incurred, and because of a mere logic of competitiveness among citizens, those who consumed the most spontaneously corrected their behaviour, reducing energy consumption.

The nudge strategy - as we shall see better below - has already had considerable influence in some of the major countries, such as the United States, where President Barack Obama has appointed Cass Sunstein head of the Office of Information and Regulatory Affairs (OIRA), or England, where David Cameron has formally adopted this theory in his government programme.

This system of regulation is based on the technique best known as the architecture of choice described above. Since individual decisions often depend on how problems are presented, the architect of choice is the one who is responsible for organizing the context within which individuals make decisions.

It goes without saying that, according to Thaler and Sunstein, the formulation of a message can prove to be a very effective "goad", also taking into account the fact that, in most cases, individuals tend to make decisions in a passive and irrational way.

Within this logic lies the nudge regulation, better known by the expression (considered by the authors only apparently oxymoronic) of libertarian paternalism: simplifying, the creators of this thesis consider themselves libertarian, because they argue that individuals should be left free to decide in the way they consider most appropriate; however, at the same time they profess to be paternalists, because the architects of choices (paraphrasing, the public authorities) can direct the choices of individuals, so as to significantly improve their living conditions, starting from the assumption that daily predictions almost always turn out to be inaccurate and distorted, as shown, for example, by incorrect eating habits, smoking or alcoholism.

In other words, "libertarian paternalism is a relatively mild, indulgent and unobtrusive type of paternalism, because choices are not blocked, prevented or made too expensive".

According to the authors, through this regulatory instrument it is possible to introduce a system of incentives which, instead of obligations and prohibitions, allows public authorities to act effectively and efficiently in many fields, such as environmental protection, family law or health protection, no longer based on coercion or the imposition of constraints, but on greater freedom of choice left to individuals.

If concrete experience were to show that such a theory can bring real benefits to the community at low cost (in other words, if the nudge strategy were characterized by a high level of effectiveness, but in compliance with the principles of economy and good administrative action), then it would undoubtedly present considerable aspects of interest in terms of regulation.

This is especially so in the presence of multi-level systems such as modern ones, which highlight the need to rethink the entire regulatory framework, which is today highly fragmented, both because of a very diversified distribution of competences and - above all - because of the numerous information asymmetries that are created between regulators and regulators, between public subjects, between them and private citizens.

In fact, it is clear that, just as happens in competitive markets, every system is all the better able to function efficiently, the more users have a complete information set (but, once again, it is necessary to evaluate at what costs and with what benefits), suitable to create the conditions for making the best choices.

However, unlike the homo economicus which, as we have seen, was omniscient in any context and sphere, the individual has a partial vision of reality and this can sometimes lead him/her to create behavioural bias or systematic distortions.

As is well known, the classical economy placed rationality as the foundation of the choices made by individuals and organizations, starting from the assumption that each "subject (whether consumer, worker, producer, saver, investor) would tend exclusively to his own personal advantage; he would act rationally, evaluating the pros and cons; he would be informed and would know all the circumstances and situations".

Since the 1970s, thanks also to the influence of cognitive psychology, behavioural economics (or behavioural economics) has questioned the paradigm of rationality of individuals, highlighting instead that human decisions are very often conditioned by intrinsic and ineliminable cognitive failures.

The subjects most able to stem the problems that result from the lack of individual rationality in the decision-making process are undoubtedly the political bodies, which can encourage, through different instruments, individuals to make decisions considered better than those they would otherwise make.

Traditionally, government structures have different types of approach available, depending on the nature of the decision-making problem to be addressed and the size of the potential worse than the optimal choice.

The first of these approaches, which compared to the others is certainly the softest and cheapest, is the possibility of informing individuals about the decision-making situation in question, trying to direct behaviour towards maximising individual well-being or towards social excellence.

A second approach, on the other hand, is the imposition of rules of behaviour that limit the subject's freedom to make decisions and prevent the choice of certain options that may be harmful to the community or to the individual himself in terms of well-being.

The two types of approach set out above, however, have strong limitations both operational and relative to the ability of the parties concerned to assimilate the information and regulatory motivations inherent in the given problem.

A third approach is represented by the incentives that the government uses to direct, and not limit, the behaviour of stakeholders towards the social or individual objective.

The main limitation of the instrument of incentives is undoubtedly their cost, since they are mainly monetary in nature and can lead the government to incur an expenditure that is generally exaggerated in relation to the objective pursued and could also lead to an underestimation of the intrinsic reasons for people to behave in an optimal way. Thaler and Sunstein in 2008, following great progress in the field of behavioral economics, used the studies developed on the subject to propose a different path from conventional approaches in motivating individuals to make better decisions.

And this through the nudge to be identified as *"any aspect of the decision-making architecture that alters people's behavior in a predictable way, without prohibiting any of the other options and without significantly changing economic incentives. To be considered as a nudge the intervention must be easy and cheap to avoid".*[12]

So the action in question is any attempt to influence people's judgment, choice or behaviour in a predictable way, motivated by cognitive boundaries and behavioural

[12] Thaler & Sunstein 2008, p.6

distortions, using the same boundaries, prejudices and habits as an integral part of such attempts. (Hansen, 2016)

One of the main assumptions of behavior science is the mechanism of conditioning, according to which the repeated association of a stimulus, called neutral stimulus, with a response that is not directly related to it, will cause the conditioned response to follow after a period of time.

The cognitive sciences have followed this last theory described to many others and, by crossing them with empirical studies, have arrived at a remarkable advancement of knowledge in the field of people's behaviour. A real change in the perspective of these studies has emerged with the integration of behavior theories with those of mathematics and economics.

The recent critical report (2011) of the "Nudge Unit" developed by the British House of Lords also highlights this point. The report argues that the definition of "Nudge" is as follows: *"it stimulates choices without inducing people to consciously consider their options, and therefore does not include openly persuasive interventions such as media campaigns and the mere provision of information".*

However, this UK government commission does not use the term consistently because in a previous paragraph it catalogued "information provision" in the "nudge" category (2011). Others believe that "nudge" refers to any action devised by behavioural economists (Blumenthal-Barby and Burroughs, 2012) as the use of predefined options that are automatically assigned to a predetermined choice if the individual does not choose alone.

1.5 The declination of the nudge technique in various fields and sectors

As mentioned above, the scope of application of nudges is very wide. In fact, it can be seen the use of these techniques in the most diverse areas of daily life, starting from politics to marketing, from sustainable economics to organ donation, in the welfare field up to the disposition of the products inside the supermarket. Below we will analyse different contexts in which nudging techniques have been used to improve both individual and social well-being.

An illustrative case is that of the software used for withdrawals at ATMs. As most individuals are right-handed, placing the receipt print button on the left side of the display once the withdrawal has been made, has contributed significantly to reducing the number of prints with consequent savings in terms of paper and ink used. This result is due to the architecture of these steps which is more uncomfortable for users.

These nudge strategies have a place and are very effective even in areas of major ethical importance such as organ donation. In some countries, including the Netherlands, Belgium, France, Portugal, Sweden, Spain and Austria, so-called "silent consent" has been introduced. This rule has led to an increase in the availability of organs as citizens of these countries are considered as donors from the outset, unless they themselves express their willingness not to donate (this willingness is known as the opt-out method in which citizens are asked to express their disagreement if they wish to donate).

In Italy, in order to donate it is necessary to express one's consent explicitly (opt-in). The percentage of donors, in fact, was low, until 2018 when the possibility of registering one's preference to donate during the renewal of the electronic identity card was included. In this context, the "gentle push" acted on the streamlining of the procedure. Among the individuals who expressed their willingness online, 81.2% expressed their approval during the compilation of the new document, while only 18.9% were against it.

Another classic example is the arrangement of food within a supermarket that adopts policies that promote a healthy and balanced diet. In this case the nudge can be found in the arrangement of healty foods such as fruit and vegetables at eye level and easily reachable compared to those foods that are considered unhealthy. Also in this case the result is more than positive. Consumption of healty foods has increased exponentially. The elimination of foods considered unhealthy from supermarket shelves is not considered a nudge technique.

In order to be considered as such, in fact, these foods should be easily controlled by individuals, giving them the possibility of encountering less than optimal behaviour. It is also important to point out that such strategies have a marginal implementation cost compared to different policies, such as personalised diets or junk food awareness campaigns, as it is simply a matter of properly arranging what is considered healthy.

In university canteens, too, efforts have been made to encourage the consumption of vegetarian and healthy foods by trying to reduce the consumption of meat and unhealthy foods. Here, too, there is no need for economic disincentives or special obligations. In fact, it has been noted that through the extension of the menu, which contains more vegetable-based dishes, this consumption has increased from 41% to 79%.

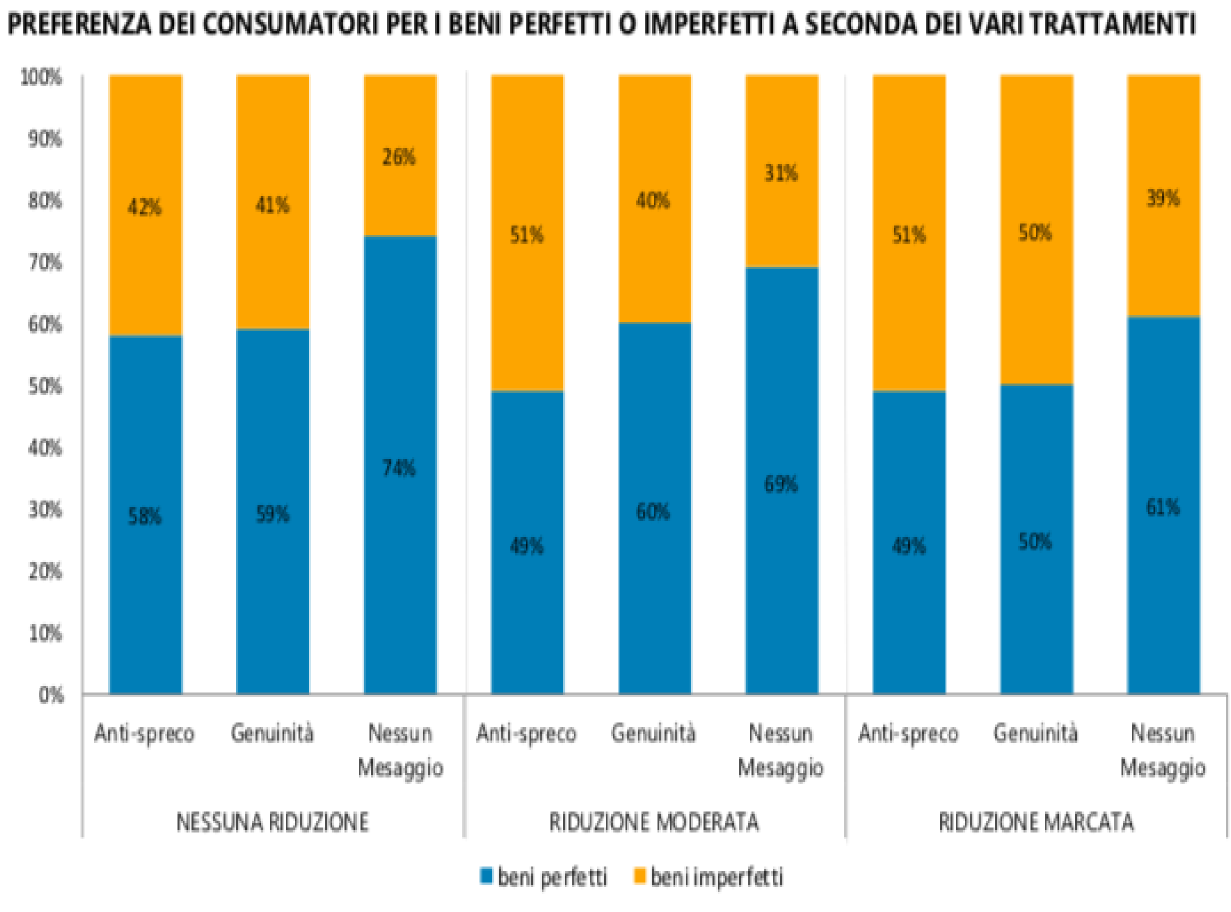
Still in the food field and above all in the waste of it, nudging mechanisms are very effective to counteract sub-optimal behaviour aimed at wasting precious raw materials.

Many studies have been carried out, both on the eating habits of families and the catering sector. During the 2015 Universal Exposition in Milan with the theme "Feeding the planet, energy for life", thanks to the partnership with COOP and the Supermarket of the Future, a study was carried out on the effect of simple signs displayed inside supermarkets aimed at encouraging and encouraging the consumption of imperfect products rather than adopting an aggressive policy of reducing the price of "defective" products: the second policy, the one relating to price reduction, has a great negative impact on the producer's income, unlike the first.

In particular, the effects of two messages were examined, one against food waste ("Accept imperfection: join the fight against food waste") and one in favour of natural but imperfect foods ("Naturally imperfect: apples [carrots] as they naturally are"), and

with three different price ranges (no reduction, 15% reduction and 30% reduction). The results are presented in the chart below.

It is possible to observe how, with the right balance between price signals and messages impressed on the consumer, the purchase of imperfect raw materials can be generated, doubling the quantity sold compared to a non-intervention situation. One of the most important results is inherent in the fact that the simple display of messages is valid to change the behaviour of individuals.



Fonte: Milan BExpo 2015: A behavioural study on food choices and eating habits - ECORYS (2015)

Another way of applying nudging strategies is in the field of environmental sustainability. In recent years the issue of sustainability has become of great importance especially since the "Day of the Overexploitation of the Earth" began to be calculated, i.e. the day of the year when the amount of resources consumed worldwide exceeds the amount of resources that nature is able to emit in the same year.

This consequence is generated more by human activities and the related costs of this ecological imbalance are taking on the contours of a real emergency in the form of deterioration of the earth's soil, melting glaciers, scarcity of fresh water, deforestation, extinction of animal species and accumulation of carbon dioxide in the atmosphere.

Linked to the issue of environmental sustainability there is the waste sector with the need to support more responsible production and consumption patterns, in order to reduce the environmental impact also making citizens responsible for the reduction of food waste and the proper sorting of waste. In this context it is necessary to act more organically and in a marked (incisive) way, while protecting the freedom to operate.

Nudging techniques have also found wide application in the context of urban waste management, with interventions aimed at reducing food waste and the number of waste produced or at promoting a fair allocation of urban waste. In order to provide a broad overview of their use in this scenario, a number of cases will be presented which, using certain mechanisms, encourage the consumer to behave in a sustainable manner. This direction should also involve all companies offering essential services with a high environmental impact.

In particular, the use of nudging strategies is even more useful in the American context, where legislation is less advanced than in Europe in terms of environmental sustainability; in particular, in order to reduce the use of plastic bags, it has been assisted in the US supermarkets to include regulatory messages associated with descriptive information already present in the supermarket and aimed at reducing waste.

In the first case, assuming that the majority of consumers would be in favour of the environment, they were stimulated with the following message: "We thank YOU for helping the environment by continuing to re-use your bags". In the second case, an injunctive standard based on social comparison was used: "Shoppers in this store believe that re-using shopping bags is a worthwhile way to help the environment. Please continue to re-use your bags".

The results observed showed that both interventions significantly reduced the use of the bags, with the injunctive intervention slightly better than the personal one. Finally, the combined effect of these two messages was also assessed, which, when combined, further reduced the consumption of new bags.

Another very indicative empirical case was carried out in Italy, at the Scuola Superiore Sant'Anna in Pisa [13].

With this research it was verified whether the use of nudges could promote the separate collection by students. The case, in particular, concerned the separation of plastic cups served by automatic machines in the university. The investigation started from the evidence that the action is mainly influenced by three factors (Shaw et al., 2007): awareness, attitude and structural barriers. The authors have therefore promoted two interventions that act on these very elements.

In the first case, they acted both on students' awareness and on social norms, exploiting the behaviour of an influential social group. Next to the collection bins, in fact, a sign was put up with not only a message explaining to students how a small change in behavior could lead to great results, but also a provocative stimulus that emphasized how 70% of Harvard students recycle their waste.

In the second case, on the other hand, in addition to keeping the provocative message with the social norm, accessibility has also been improved, so that people can act by changing their habits as little as possible, reducing the cognitive effort needed to make the decision. In particular, next to the vending machines, a plastic waste collection container has been placed much larger than those dedicated to different materials.

The results of the experiment were very positive and showed that, compared to the initial condition in which only 3.9% of the cups were separated, the first

[13] (Cosic et al., 2018)

experimental condition led to a separation rate of 36% and the second condition even 97.4%. The second treatment was then implemented by the university and three

months after the experiment data were again collected which revealed that the virtuous behaviour of the students was not only acquired but also maintained.

Finally, another action promoted recently (in July 2019) by the City of Rome and also aimed at recycling plastic waste, taking advantage of the nudge strategy and therefore, inducing a subject to behave with the help of an economic incentive, is the campaign "more recycling, more travel: throw the plastic bottles in the right place, pay less for the ticket".

The initiative is "the first of its kind in Italy and one of the few in the world" (according to ATAC) and lasts on an experimental basis for 12 months, rewarding travellers who correctly place empty bottles in the special machines located in some Roman underground stations.

The experiment is based on a technical system that includes special machines for the collection and two apps that load bonuses that end up in a "virtual purse" of MyCicero or TabNet apps useful for the purchase of ATAC tickets.
As said, the project is currently being tested so the results are not known yet.

To remain on the subject of the application of nudge strategies to environmental sustainability, one last significant example is worth mentioning. According to a DOXA study (2017), every year in Milan about 80 million tons of cigarette butts are thrown to the ground; this event takes on worrying dimensions in a worldwide context, with over 10 billion cigarette butts thrown into the environment every day, which, in addition to polluting the city, need tens of years to be degraded.

A nudging design adopted in the areas surrounding the University of Sibiu, Romania, has shown a high rate of effectiveness in reducing the problem of cigarette butts. The structure of this experiment, started in 2016, included the implementation of a particular ashtray near the entrance of the university dormitory. This ashtray was divided into two separate boxes.

Above this object was written: ("Did you study for exams?"), and the two separate boxes corresponded to the answers "Yes" and "No".

Although before the installation of this particular ashtray there was already a classic ashtray in the shape of a large box, the number of butts thrown to the ground reached 86% of those used; as a result of the implementation of the new device, the number of butts thrown into the ashtray increased to 85%, completely overturning the starting percentage. The positive outcome of the mechanism finds its success both in the playful aspect of participating in a choice and in motivating an inner reflection on one's own exam preparation.

Last of the examples, and not least, of the nudge strategies used to influence individuals' choices is always inherent to smoking.

The cost related to the desire to be a smoker is not limited to the price of the packet of cigarettes, it also extends to those costs which are never "priced" but which indirectly and both in the short and long term cause real damage to society as a whole. The damage that is caused by the behaviour of one individual and that affects the activities of another, causing him/her a decrease in well-being and lifestyle without directly affecting his/her sphere of paid prices, are called "negative externalities".[14]

A first major complication is therefore linked to the fact that, at least in Italy, the damage associated with a deterioration in the health of smokers spills over to the community indiscriminately because in our country there is a universal health system financed with general taxes, so that an increase in taxes caused by higher health costs for smokers is reflected on everyone indiscriminately.

Speaking of Italy, on the legislation issued on January 12, 2016, came into force the Legislative Decree n.6 which implements the EU Directive 2014/40 towards a rapprochement of the laws, regulations and administrative provisions of the Member States relating to the processing, presentation and sale of tobacco products and related products, repealing the previous Directive 2001/37 EC.

[14] externalities are negative when effects attributable to the activity of one person influence the production function or the welfare function of another person, leading to decreases in production or welfare respectively.

This decree is an awareness campaign that should act on the human cognitive system and therefore on people's choices. The aim of this new legislation is to influence the intuitive system of the human being, substantially transforming the

packaging of cigarette packets and precisely by acting on several fronts. First of all by eliminating the information describing the level of nicotine, tar and harmful substances inside the packet because it has been shown that such information could lead the consumer to believe that one type of cigarette was less harmful than another because of the lower level of toxic substances (e.g. marlboro silver vs. marlboro red).

In addition, shock images have been inserted on all sides of the cigarette packet, for a space covering 65% of each side, of the real damage that smoking causes to people, i.e. images of people who have contracted diseases and suffer from smoking. Furthermore, an emergency number and information has been inserted to make it more accessible the choice to quit smoking thanks to external help.

Theoretically, this new policy should influence the consumer to be shocked and consequently lead him or her to reject smoking, giving him or her a warning about the likely harmful consequences and holding out his or her hand to help him or her get out easily.

1.6 Nudging in economic policy and policy makers' choices. Liberal paternalism

Thaler and Sunstein also presented their contribution on the theme of "Libertarian Paternalism"[15]. Their conception starts from cognitive limits, since these allow to act not on the aims of individuals but on the means used to pursue them and allow to do so without restrictions of freedom. It is precisely in this that libertarian paternalism would consist. Rebonato[16] also spoke on the subject, stating that:

"Libertarian paternalism consists in that set of interventions that try to overcome the inevitable cognitive distortions and inadequacies in making decisions of individuals by taking them into account so as to influence decisions (in an easily reversible way) and direct them towards choices that the individual would have made if he had the analytical skills of a rational decision maker".

However, with particular reference to public interventions that can be implemented by policy makers, we can say that not all interventions are paternalistic. In the theory of economic policy, in fact, the difference between direct and indirect instruments is consolidated.

Direct instruments are used to impose limitations on freedom of choice, for example, limits on imports of certain goods, employment obligations for certain categories of workers, limits on the granting of credits; indirect instruments instead consist in making certain actions more convenient than others, without this time limiting freedom of choice, for example, when a particular duty is introduced on certain categories of goods, tax benefits for specific categories of workers, imposing higher taxes in the world of gambling.

Direct interventions are called, in paternalistic terms, hard and indirect soft. As we know, nudges are soft interventions and they can be considered instruments aimed at widening and "softening" the techniques of indirect State intervention in the economy.

[15] Thaler, Sunstein, from “*Libertarian Paternalism*”.
[16] Riccardo Rebonato from “*Taking Liberties: A Critical Examination of Libertarian Paternalism*”.

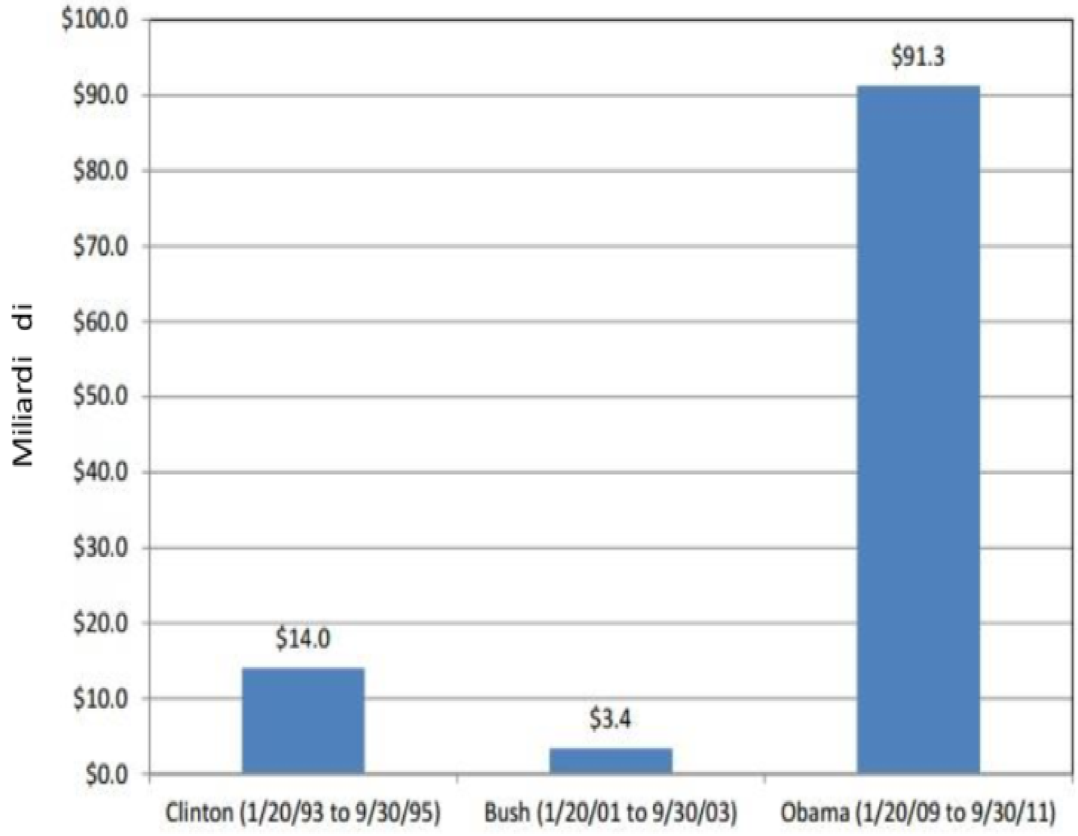
These tools are very widespread in Europe and worldwide and there are many concrete and positive examples of *nudging* applied in particular to administrative contexts: just think of the *Behavioural Insights Team* of the British Government or the acceleration impressed with the Executive Order by the former President of the United States of America Barack Obama to the use of behavioral sciences in the design and implementation of U.S. public policies.

As far as the US scenario is concerned, the turning point came in 2010, when the then President B. Obama appointed C. Sunstein to lead the OIRA[17]. The guidelines issued by the latter were: the use of comprehensible language, the reduction of bureaucratic requirements, the drafting of readable summaries for particularly complex regulations and the abolition of costly and unjustified requirements. The use of nudges was predominant in this sense: simple low-cost approaches that protect freedom by directly influencing the behavioural sphere and generating economic savings, progressing towards more satisfactory health conditions and increasing general life expectancy.

Below is a brief description of one of the analyses carried out by OIRA, which makes it possible to identify the benefits enjoyed by the White House during the period 2009-2011.

The "Draft 2012 Report to Congress on the benefits and costs of federal regulations and unfunded mandates on State, local and tribal entities", published by the Office of management and budget, highlighted the positive results of the use of the directives issued by Sunstein under the chairmanship of B. Obama.

[17] The OIRA ("Office of Information and Regulatory Affairs") is a statutory body of the Office of Management and Budget, the White House's management and budget office established at the President's executive office. In practice, it is the authority of the U.S. government to review implementing regulations, approve information collected by the government, establish statistical surveys, and coordinate federal privacy policy.



[18]

The graph shows the total net benefits attributable to the main regulations introduced, showing the differences and great disparity between the Clinton legislation (14 billion dollars), the Bush administration (3.4 billion dollars) and the Obama administration. One can clearly see the figure for the three-year period 2009-2011 in which the Obama administration obtained 91.3 billion dollars of total annual net benefits thanks to the use of the cost-benefit method in the examination of regulatory acts by the OIRA.

The estimate of net benefits is made using the method called *"break even analysis"*[19]. In order to determine the benefits net of present and future costs, the break even point is used as a starting point, i.e. the point at which the estimated benefits balance the costs and from which all the benefits are to be considered additional.
These positive results were obtained through regulations that refer to Executive Order 13563 "Improving Regulation and Regulatory Review", whose aim was to further

[18] Tab.2 Total annual net benefits attributable to the main regulations introduced attributable to each legislation. Source: Draft 2012 Report to Congress on the benefits and costs of federal regulations and unfunded mandates on State, local, and tribal entities.
[19] C.R. Sunstein, "Simple. The art of government in the third millennium", Feltrinelli, 2014, cit. p. 225.

improve regulation and regulatory review by involving the public in the various regulatory proposals in order to encourage the active participation of stakeholders in order to ultimately create policies that guarantee lower costs.

Therefore, in such a "rule making" process, the OIRA office is required to take into account the feedback received by motivating and responding to public comments if it does not wish to comply with them. With the same executive order, President Obama also stressed the importance of protecting public health, safety and the environment and promoting economic growth, innovation, competitiveness and job creation.

It is important to stress that EO13562 calls on agencies to consider, in this process, a qualitative discussion of values that are difficult to quantify including equity, human dignity and distributive impacts.

The time frame over which Sunstein was appointed to OIRA has enabled the US administration to implement frequently very low-cost regulatory policies and thus to reap substantial benefits. This has also been possible thanks to the facilitation of administrative procedures which, together with the restructuring of the default systems, has certainly made it easier for citizens to make the appropriate choices.

A similar model is being adopted in the UK where Prime Minister David Cameron, leader of the British Conservative Party, appointed Richard Thaler as government advisor in 2010 to lead the *Behavioural Insight Team* ("BIT")[20]. Cameron's intention has been to use behavioural science to make effective policy making, not only from the point of view of the community as a whole by helping people make better decisions, but also to help the government maximise its actions with "minimal effort".

The BIT produced a document called "MINDSPACE" which was a public policy model, applied to local communities, to individual public institutions such as schools, which used nudges, small but sufficient incentives to change people's behaviour and

[20] The staff consisted of staff with in-depth academic training in the fields of economics, psychology, statistics or public and government policy.

make better choices. The aim was to achieve important social results by offering better and more efficient public services.

Prime Minister Cameron's idea was to test the validity of behavioural sciences in order to obtain policies that would, on the one hand, make the choices that citizens were led to make more appropriate and adequate, and on the other, support and assist the government, which with the use of incentives and inexpensive actions, could affect the field of welfare, health and money management.

An example of this nudging practice applied to the administration of money concerned pension fund policy. Workers had the desire to set money aside for their pensions, but they were hardly aware that they were blocking the money for a long time. The incentive was to automatically enrol, unless expressly refused, in a money accumulation plan that allowed them to systematically set aside a sum of money for their pensions. The success of this practice was enormous because a very large number of workers joined.

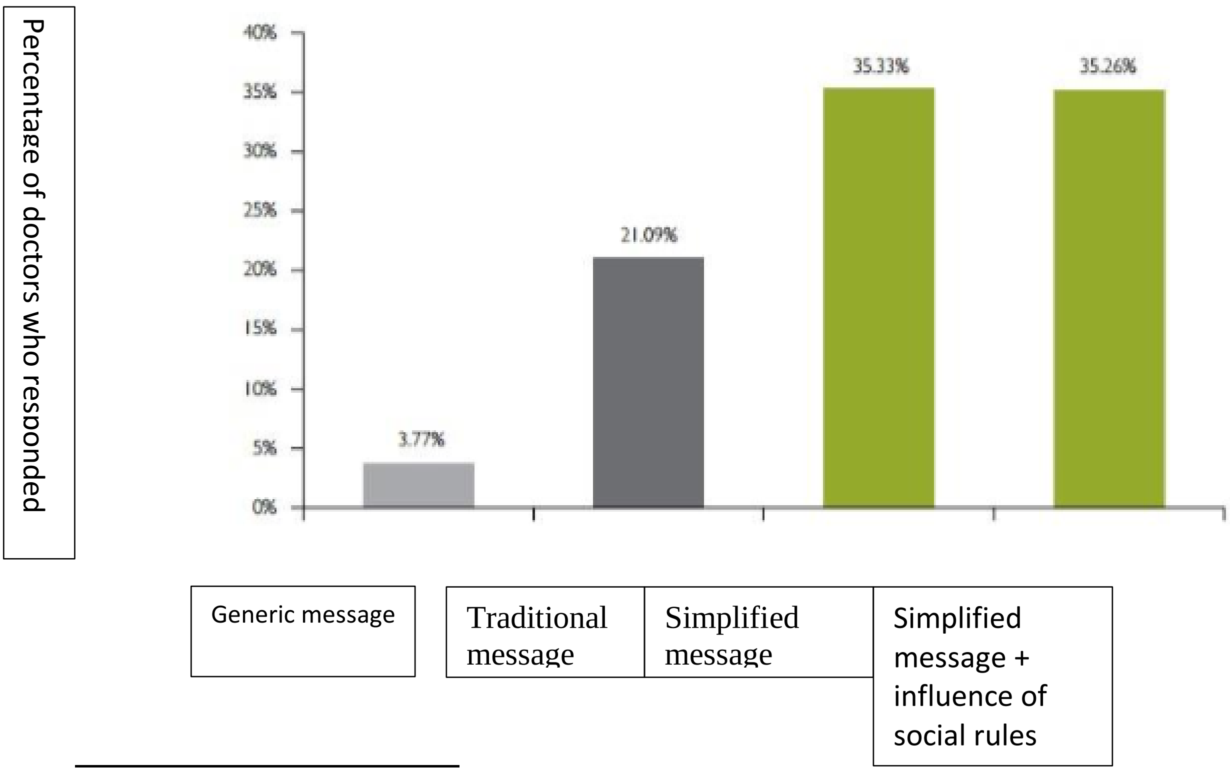
The operational methodology of the BIT, therefore, was characterized by a strongly empirical connotation: ideas were first tested on a small working group before being implemented on a large scale. This in fact makes it possible to understand what works, but above all what does not work.

From birth until today, the objectives have remained the same as ever: to make public services more convenient and easier for citizens to use; to improve public policy outcomes by introducing a more realistic model of human behaviour; and, where possible, to enable people to make "better choices for themselves". The objectives are pursued through the renewal of public services and by drawing on ideas from the literature of behavioural sciences.

The Behavioural Insight Team combines traditional methods of regulation, typical of public authorities, with other simpler and cheaper interventions. Some of these have been aimed at fighting fraud, errors and debt. One of the most interesting reports is called "Applying behavioural insights to reduce fraud, error and debt"[21]. from which some interesting suggestions emerge regarding the nudge techniques used to combat "fraud, error and debt", using discoveries from the behavioural sciences.

The proposed strategies are part of the so-called better regulation, i.e. regulation increasingly oriented towards principles rather than detailed rules. The British government, therefore, also aims to simplify the regulatory framework, to contain the burden on the economic system as a whole, to consult the recipients of the rules, and to analyse the cost-benefit of the measures adopted.

In particular, an experiment is based on sending key messages to a defined category: a group of doctors who are late in paying their taxes, to whom the message was sent containing indications of the simple actions to be taken in order to fulfil their duty, also drawing on the fact that the community considers doctors to be a category of honest professionals (influence of social rules). This experiment showed that the number of doctors who made the payments due was higher (up to 35.33%) than a group of doctors who had been sent the generic and traditional late payment notice (minimum percentage of 3.77%).



[21] The full text of the Report is available at the site: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/60539/BIT_FraudError Debt_accessible. pdf

Experts argue that the application of behavioural sciences to law can benefit government policies by improving existing regulatory strategies and building viable alternatives to the traditional and established *"Command and Control".*[22]

Finally, also in Italy, on January 20, 2015, was proposed by the Regional Councillor of the time Gianpaolo Manzella, the creation of the "Better Regulation and Nudging Unit" in the Lazio Region, following the approval in the Regional Council of the motion n.287/2015 that committed the Lazio Council in testing the creation of a task force on nudging.

Manzella's thought is summarized in his blog in which he said he has always looked at *"nudging - a regulatory technique that combines law, behavioral theory and cognitive psychology - with attention. And perhaps he counted, in this, a certain fascination for Cass Sunstein, the American scholar who, together with the economist Richard Thaler, "invented" it. Sunstein is a very prolific scholar, of those who have global influence from New England. With only the power of his ideas.*
So it happened with nudging, a gentle regulation technique, in the sense that it induces people to behave virtuously, and which, thanks to his work, has become a reality in many countries. The Anglo-Saxons, first of all, with the creation of a Downing Street Unit that in a few years revolutionized the way of making rules in the UK and Obama's initiative that since September 2015 has brought nudging to the US administration. Other European countries have embarked on the same path and lastly, also at the level of the European Commission, initiatives in this sense have been promoted".

Thus, on November 2, 2017, experts of the caliber of Angela Merkel, psychologist Sabrina Artinger and Harvard economist Francesca Gino met at the Secretariat General of the Lazio Region to establish this body.

Also here the objective attributed to this "Unit" is therefore to support, together with the Council and the Council, to propose better, less expensive rules aimed at influencing individuals towards optimal choices by applying nudging techniques in

[22] Command and Control" is a technique based on the imposition of strict regulatory standards (e.g. on health and safety at work), non-compliance with which leads to the imposition of sanctions by the competent authorities.

the administrative sphere in order to obtain streamlined and efficient rules and savings in public administration thanks to communication tools based on transparency that are often less onerous for public finances.

The Task Force, following the official institution on 6 June 2019, was assigned mainly three tasks. The first is the reconnaissance of practices developed in other systems and the indications promoted in this area by the European Union.

The second is the research of the applications of these techniques in the activities of the Lazio Region and, if successful, to lay the foundations for the definition of guidelines to be applied, on an experimental basis, to the real regional administrative activity. The last task provides, within six months of its creation, for a report on the concrete possibility for the administration of the region to use these regulatory techniques and to identify a series of initiatives to be implemented mainly by collaborating with university bodies and specialized subjects.

Considering the positive examples of application of nudge techniques in administrative areas, also Piedmont, with motion no. 54 of 7 October 2019, has evaluated the establishment of a body related to nudge aimed at improving its administration.

Therefore, nudge techniques are becoming an increasingly established reality in many contexts and are probably destined, given the benefits obtained, to become in the future the modus operandi of local and central government.

CHAPTER 2

2.1 The role of nudges in technological innovation: the new frontier of anticipatory computing

It is a fact that with the advent of the technological and digital revolution, people's lifestyles have changed. The consistent access to the network, the affirmation of intelligent technologies, the dematerialization of processes, the availability of access to infinite information are at the basis of this rapid and continuous change.

However, it is not necessarily the case that the advent of technology can always lead the consumer to choose the best alternative; in fact, we could often have various options in front of us, but we could choose the wrong one, just as an overabundance of information could be misleading. In this regard, Benartzi Shlomo, American economist of behavioural sciences, said that:

"*We have more choices, but we choose the wrong thing. We have more information, but we somehow miss the most relevant details. We can act quickly, but that often means we act without thinking*."

The digital context is increasingly the order of the day and the environments where our choices are made are increasingly digital. Suffice it to say that we are now more inclined to buy online on platforms like Amazon and EBay rather than going to physical stores, or even in the field of booking a flight, a hotel or an entire holiday we rely more and more on particular search engines such as Booking.com or trivago.com and we prefer to perform these tasks on the web.

As we have seen in the first chapter for decisions in real contexts, also in this case the choices that take place in the digital world are influenced by the environment we come across.

The term "digital transformation" refers to sets of changes that involve many aspects of human society, intervening in the social, cultural, organizational, technological and managerial spheres through the support of digital technology applications.

The digital transformation, which has an influence and an impact on all the above mentioned factors, goes beyond the simple use of new technologies and allows the offer of services, contents, large amounts of information, to let the consumer live experiences, in a totally independent way from the available resources (be they human resources, economic material, etc...) ensuring new relationships between individuals, companies and institutions.

As mentioned above, the digital transformation is not only concerned with the development of new technologies, but rather involves the entire environment in which this process takes place, encouraging sharing, transparency and ensuring an increasingly central role for the participants in this process.

Thus, thanks to this approach to digital transformation, the final sender is increasingly placed at the centre of the context in which he or she operates, obtaining a more aware, effective and real access to the service. Sometimes he is the unconscious protagonist of such processes because with his "digital" behaviour he is able to give important information about his tastes and preferences without, however, behind it there is an effective intention to leave "his own traces".

The fields that affect the digital transformation range from individual businesses to those related to the social community such as governments, health care system, mass communications, etc...

It is important to highlight how the changes in individuals' choice and consumption behaviour and news sharing have changed and it is precisely these motivations that have triggered this transformation.

The so-called digital consumer is increasingly looking for high standards and their expectations are growing, so companies, Public Administration, banks and private and public bodies have to resort to an increasing quality of service delivery and must guarantee the use of information making it increasingly accessible (through a single click).

In an environment where market dynamics change quickly and radically, public and private companies must be ready to react accordingly through growth and acceleration of processes. The digital transformation must therefore become a fundamental element on which to focus, focusing on the dissemination of skills, investing in research and intervening on infrastructures, data centers and network access.

The digital strategy therefore lays the foundations for the development of a new industrial policy and is fundamental as a paradigm for the social, technological and cultural transformation of a country.

In this scenario of digital choice, there is the possibility to use nudge strategies to sting individuals (through digital nudging). In the digital environment, however, not all nudges used in real contexts are valid to change the behavior of the end user. For example, as far as the default options are concerned, consumers are more reluctant to use them in online contexts than in real environments.

This is because sometimes psychological dynamics take over and act on some levers such as the trust placed by the consumer that could be greater in more "empirical" and practical contexts, as in real ones, rather than in digital environments where the contact is more and more virtual.

In fact, in order to make nudge strategies effective in digital contexts it is necessary to act on the architecture of choices, mainly modifying the presentation of information and its structure (Schneider, Weinmann and Brocke, 2018).

The bait effect, the middle option bias and scarcity are the most used bias and heuristics to prodde consumers. Specifically:

1. The bait effect is a strategy that highlights one option against another by presenting the option you want to choose together with one that would never be chosen, namely the bait. To contextualize this strategy, let's take for example the presentation of a choice for the purchase of a book both in digital and paper version. The options presented are the following:

- OPTION 1: purchase the e-book at a cost of 10 Euro;
- OPTION 2: purchase the e-book and the paper version of the book at a cost of 20 Euro;
- OPTION 3: Purchase of the paper book at the price of 20 Euro.

Presenting only the first two options of choice most people are led to choose option 1, but with the inclusion of the bait, i.e. option 3, the scenario changes. In fact, most consumers will tend to choose the second option as the most attractive of the three, leading many people to abandon the cheaper choice in favour of the more complete and expensive one.

2. The middle-option bias is a type of distortion that occurs in the consumer's mind when, faced with multiple choice options, ordered sequentially, the consumer tends to choose the middle alternative. Nicholas J. S. Christenfeld[23] conducted an experiment aimed at learning about this phenomenon. Specifically, 220 subjects were asked to "put an X in a circle, in a line of three circles, or to circle an X in a line of 4 X". The results obtained by the professor showed the tendency of individuals to decline both the first and the third choice in favor of the central one. This tendency, as also explained by the author of the experiment, to choose this option is not limited only to this described scenario, but rather applies especially in contexts such as the choice of goods placed on supermarket shelves.

3. The scarcity, third heuristics examined, refers to the cognitive limit of the person to give more importance and greater value to occasions that are presented as unrepeatable or to objects with limited presence. For example, marketers take a lot of advantage of this weakness of individuals by creating advertising campaigns that read: "limited offer" or "available only from the... to...".

These examples above are useful to understand how digital nudging is used, but it is right to remember that nudge strategies used in real contexts are also very effective in digital environments thanks to our bias and heuristics. One example is social influence.

[23] Nicholas Christenfeld was a former professor of Psychology at the University of California, San Diego.

Thanks to the world of the internet we have the possibility to get feedback in real time and stay in touch with a large number of people and this leads us to unconsciously make choices that are influenced by the social context in which we find ourselves.

Let's think about what can happen unbeknownst to us on the internet and social networks where the private is confused with the public and where the last frontier of global politics is advancing, the topic of discussion that will hold the table for the coming years. It is called "anticipatory computing". It is the ability of these technologies of ours not only to manipulate the past and the present, but also to anticipate the future.

Using smartphones, computers, search engines such as Google and social networks, we continuously leave data in the info-sphere; traces of our tastes, interests and orientations are collected by companies or governments that serve to build algorithms: predictive models that will offer us in the future, in social networks, search engines or supermarkets, products, travel, diets, solutions compatible with our choices of the past anticipating our demands.

This, somehow, opens up scenarios as always on one side "bright" but on another dark. For example, it is very interesting to analyse how a small device can accompany us in our fitness actions and continuously monitor our physical performance. Surely it is an example of an interesting tool that can help us to live better on the one hand, but dangerous on the other because it goes in the hands of those who somehow have an interest in governing data on our health.

Let's think of an insurance agency that can decide how to establish contact not on what it is but on what it could be. The dangerous drift is that we can somehow be the victim of these predictive models.

Often most of us are convinced that what appears in the digital way is reality, but in fact it is a reality mediated by an algorithm and therefore the critical awareness of knowing how these platforms work is the only element of freedom that remains in the hands of the public and citizens today.

The algorithm suggests our next moves to those who have an interest in preventing them for economic, political or national security reasons. To better frame the function of anticipatory computing in politics and nudging, we need to broaden the view and focus on some points that are superficially taken for granted.

It is surprising how quickly we have become accustomed to the evidence that the commercial techniques and strategies used by companies are the same as those used by politics. And the fact that large technology companies behave like nations, managing the local and global information flows that determine our lives instead of states.

2.2 The transition from traditional to digital marketing: an introduction to marketing strategies based on nudge theory.

With the advent of the Internet and technological evolution, marketing finds itself in a more horizontal business context, i.e. customer-oriented, putting the customer at the centre of the process. Thanks to the creation of social media, what are figuratively speaking social, geographical and cultural barriers are broken down, allowing individuals a greater connection and communication both among themselves and in the relationship with companies.

In this new era one of the first changes that has occurred is the flow of innovation that from vertical, i.e. oriented from the company to the market, has become horizontal as the market provides the idea of product that companies will then market. Therefore, companies, in the wake of these changes, have also modified their internal organization by disinvesting and depowering the R&D (Research and Development) function in order to "outsource" it, taking innovation from the market and internalizing it.

Consumer confidence in digital marketing has also changed direction, changing from vertical to horizontal. In fact, before this digital revolution, individuals were easily plagiarized by the communication campaigns themselves, but today, according to recent research in this field, it is clear that the consumer is more inclined to trust the "Factor F[24]", i.e. familiar fans and followers online rather than marketing communication campaigns. The corporate vision must therefore change from vertical to horizontal, establishing a relationship of trust generated by transparency and creating value in an authentic way.

After this brief assumption, we see how in detail marketing has been subject to enormous changes.

The foundations of traditional marketing are based on segmentation, i.e. the technique that includes the subdivision of the reference market into clusters with common demographic, behavioural, preference and psychological characteristics. Once the segmentation process is completed, always in the traditional perspective, the

[24] Families, friends, Facebook fans, Twitter followers; Kotler, marketing 4.0.

targeting follows. This process is based on the identification of different market segments to which the brand in question wants to address its offer. These two steps are fundamental for a more effective and efficient allocation of the products or services offered.

However, these processes do not involve the consumer's vision, except in a preliminary phase of segmentation and targeting, aimed at market research. In fact, in this unilateral perspective, it is the marketer who makes the decisions, making the client a passive figure in the process.

In the digital age, on the other hand, this relationship must be bilateral because customers are connected both to each other through communities and to the company itself. In today's context, communities are nothing more than a transformation of market segments created by consumers themselves. The company that wants to have a relationship with these communities must get in touch with them through the "Permission Marketing"[25] asking permission to interact with marketing communications. An example of permission marketing is found when the company asks the customer for permission to send newsletters and promotional messages.

This does not mean that companies should abandon the traditional approach to use segmentation, targeting and positioning, the important thing is that their use is transparent in the eyes of consumers.

In order to better understand the change that is taking place thanks to technological and digital innovations, the characters and the customer's conception of the brand will be specified below.

From a traditional point of view, the concept of brand is associated with a sequence of images aimed at characterizing as "unique" the product or service provided by a company in relation to its competitors. It also contains all the value generated by the company. To create this value, the brand needs an effective positioning in the consumer's mind through brand positioning, that is, a constant commitment by the company's marketers to consolidate a real differentiation with

[25] Theorized by Seth Godin.

respect to competitors in order to occupy a privileged position in the minds of consumers.

From a more modern point of view, the concept of Brand has also been associated with the so-called customer experience, i.e. the experience that the consumer lives through the whole process of relationship with the company. It is also important to underline how, in the digital age, the life cycle of products is much shorter than in the past due to a continuous succession of new trends. This has "forced" the structures of companies to be more dynamic and flexible in order to be able to face the needs and the different situations that arise on the market.

The marketing mix, a tool aimed at understanding what and how to offer a product to the customer, has undergone a significant change. Initially it was based on 4 P: Product, Price, Point of Sale and Promotion.

In the first phase and then the one related to product development, this is often offered starting from what are the needs and desires of customers. As far as price formulation is concerned, later on, companies focus on a combination of factors such as costs, value that the customer associates with the product and competitive prices. The value that customers associate with the product is also taken into account together with the value they are willing to pay for it. Once these decisions are made on what to offer, companies should focus on how to offer the product or service in a way that makes it attractive.

First, they should define the distribution locations in such a way that the product is made easily accessible and then they should communicate the information that is of interest to the target customers through communication campaigns such as advertisements, promotions in distribution locations, etc...

Even before the digital age, however, the marketing mix had a considerable transformation by adding to the classic 4 P other 3 P important for the process of selling products and services. Specifically, these P are: Process, People and Perception.

The attention to the process is fundamental to optimize all the steps within the business cycle and ensure higher quality of the product or service offered. The

"People" factor is important to have an even more detailed and correct focus on the reference target in order to optimize sales. The seventh P, or perception, is a very important element to create the right image of the Brand in the consumer's mind.

In the digital age the orientation of the marketing mix has shifted towards a more participatory approach by the customer. In fact, we move from the definition of the so-called "P" to the "C" of the marketing mix: co-creation, currency, community and conversation.

The first factor, in the digital economy, corresponds to a new product development technique. By integrating the customer into the production process of new products, the company is able to increase the chances of success and product enjoyment. The co-creation is also fundamental as it allows a customization of the product or service according to the specific needs of customers, making the offer to the market more attractive and the perceived value will be greater.

With the change in traditional marketing techniques, even pricing strategies (currency) are constantly evolving, in fact, we move from a fixed price to a more dynamic one that varies according to the demand on the market and the efficiency of the production related to the company itself. This new strategy aims to understand, once the customer's need has been defined, at what price the customer is willing to satisfy it.

In fact, those who operate in online markets have the opportunity to collect a large amount of data, through big data analysis, so that the final price is adapted to the various categories of customers. They can also better profile the characteristics of the end user thanks to the history of past purchases, preferences "exposed" on social platforms and other information that they release, even unconsciously, on the web.

Another aspect that has changed is promotion (communication). In traditional marketing, the latter consisted of sending simple promotional messages to groups of customers, resulting in a one-way communication. Nowadays, thanks to social platforms, information and preference sharing sites, and review platforms (the most famous is TripAdvisor), customers have the opportunity to compare and evaluate different brands, making the promotion more subliminal based on consumer interaction.

By adopting a related marketing mix (the C's of the marketing mix) companies will have more chances to make more profit in a digital economy. However, the sales paradigm also needs to be changed. Traditionally, customers have been passive targets of sales techniques; in an online connected world, the corporate vision changes towards a collaborative approach with the customer in order to create commercial value for both actors (company and consumer). Therefore, thanks to the increasingly active involvement of customers in this process, we are moving towards an increasingly transparent marketing of products and services.

Not to be underestimated are the changes that have taken place in after-sales services for customers. In fact, traditionally the customer service formed by the company's employees had to follow rigid processes and specific directives, issued vertically, and this often led to conflicts of interest. In the digital world, however, collaborative customer care is the winning element. Thanks to this collaboration, it is the customer himself who participates in the process using self-service tools and personal resources.

There should be no conflict between traditional and digital marketing; on the contrary, they should accompany the customer in parallel. In fact, in a first phase it is traditional marketing that plays a crucial role by communicating and transmitting what the brand is in its essence and generating consumer interest. Then, in a second phase, when the customer-company relationship becomes more intense, digital marketing takes over. In fact, the primary task of this marketing is to encourage individuals to generate actions and through word of mouth, dictated by satisfaction, to spread positive knowledge of the brand in communities.

To conclude, digital marketing through transparency and responsibility has the task of generating concrete results for the company while traditional marketing has the role of stimulating interaction with individuals.

The nudge strategy is based on the assumption that marketing is the means by which to best express the content created by the company and that it knows how to efficiently and clearly design the information to be sent to the outside world, with the aim of transmitting this information in a truthful and transparent way in order to simplify the choices of end users.

It must therefore be a means through which the choices of individuals are simplified by promoting the company's image and trying to involve the consumer in business activities as co-creators of value.
Communication, therefore, is nothing more than the representation of what the company imposes itself to be through the emanation of the information reflected in the products or services provided.

Let's now consider small gentle, naked pushes, which can be inserted in the communication contexts of companies in order to facilitate the choice of customers:

1. Positioning: The strategic positioning, physical or visual, of something that the consumer can recognize allows the latter to make their choices more easily, without having to stop and think.

2. Reduction: since the amount of information is sometimes redundant, it is good to simplify the provision of such information to facilitate the choice process;

3. Relevance: Provide information to consumers that is relevant to their choices.

In the digital domain, nudge is often applied to the field of neuroscience. Such strategies aim to prick the emotions that drive individuals towards choices guided by spontaneous thoughts, without the mind being subjected to any particular effort.

As mentioned above, the experience the user encounters, especially in online contexts, is the key to these proddings. Nudge marketing plays a persuasive role in this field.

In this field of fundamental importance is the analysis of big data. They are means to increase the power of those who want to push individuals towards certain decisions. For Thaler, the consequence is that big data, "as shown by the tools that have been used to manipulate elections, are very powerful".

In this regard, Alex Pentland, professor at the Massachusetts Institute of Technology (MIT), has highlighted in his research how digital tools and neuropsychic analysis can be used to get a more detailed picture of the general behavior of the population.

From the results obtained, it can be shown that the use of nudges and small incentives issued on a larger scale (e.g. at the national level) to maximise and predict society's behaviour is indeed possible. This process is known as "social physics".

"The greatest limitation of traditional behavioral economics is that it is not systematic and holistic: it cannot predict what is going to happen, but it merely points to some possibility that things may not go right," said Pentland. *"That means you need a data-based approach to understand behavior - for example, social physics - and keep track of what actually happens compared to what you think might happen".*

As mentioned in the previous paragraph, with the introduction of anticipary computing, the use of this data to change people's behavior, present and future, can have negative sides such as the use of cyber-propaganda techniques by governments on social platforms, where there are mainly youthful minds that could be more easily plagiarized.

However, the combination of data processing tools and behavioural knowledge has many positive implications for public life, from health services to transport infrastructure management.

For example, the San Francisco Public Transport Authority has managed to reduce traffic congestion on its network by using large scale GPS data to track and predict user movements, which has been taken into account in the design of smartphone apps to make the whole system more efficient.

In conclusion, the effectiveness of nudge as a marketing tool is to push people to make certain behaviours and decisions by simply changing the context or perspective in which they operate, sometimes leveraging trust and emotional involvement. This innovative approach, which combines behavioral sciences with marketing, aims not only to improve branding performance and business profitability but also to create more value for the end consumer by offering products and services that are increasingly responsive to his needs because, as seen, the consumer himself is the protagonist of the design process.

2.3 Digital marketing. What changes in the relationship with the consumer thanks to digital transformation

While the traditional consumer was only interested in maximizing his buying utility with the only objective of satisfying his desires, theorized by Maslow in the "pyramid of hierarchy of needs"[26]. The new consumers, the digital ones, are looking for the so-called shopping experiences, which can involve him emotionally, making him feel like the absolute protagonist of the whole purchasing process.

In this context, therefore, the individual is taking on an increasingly dynamic role, becoming an influencer and promoter of industry production. E-commerce and furniture have definitely changed the purchasing processes of consumers in all its steps.

In fact in the traditional conception the marketing models were rather linear as they were built on the basis of a process characterized by 5 steps a priori identifiable in:

- **Awareness**: starting from the perception of the need for a specific product/service;
- **Familiarity**: familiarity with a given product;
- **Consideration**: search for information functional to the purchase;
- **Purchase**: actual purchase;
- **Loyalty**: after-sales marketing and assistance activities that are useful to not lose the relationship with the newly acquired customer and that aim at customer loyalty.

[26] This pyramid is subdivided into 5 different levels, from the most "elementary" to those more detailed needs, complex even to reach. The levels were classified in this way:

1. Physiological needs, such as the satisfaction of the need to feed, to breathe, etc. ...
2. Salvation needs, such as moral security, health, physical security, etc....
3. Needs of belonging, such as friendship, affection on the part of a family member, etc....
4. Needs of esteem, such as the need to realize oneself, to obtain respect etc...
5. Need for self-realization, satisfying objectives such as the realization of one's own identity.

In reality, this scheme is now completely subverted in e-commerce, allowing consumers to make faster and more rational choices thanks to the large amount of information available and easily comparable offers. Therefore even the phases that intervene in the purchasing process are sometimes confused, overlapping in response to the multiple stimuli and impulses to which potential customers are subjected.

In fact, the process by which people come to decisions is messy and confusing and will become even more so. Therefore, from the first trigger, which in technical jargon means the first stimulus that triggers the funnel, until the moment of purchase, the process is characterized by an intricate network of touchpoints that changes from person to person.

At this point it becomes interesting to understand how individuals process all the information and stimuli they encounter along the path that precedes the purchase in order to adopt those tricks or gentle urges aimed at influencing the final purchasing decisions of people.

With the spread of the internet, the web has also transformed our ways of comparing products and services, no longer only in terms of price but also of related characteristics.

And especially in an era in which purchases are becoming more and more online, perhaps reaching its maximum expansion with the COVID-19 emergency that has accelerated and increased the transition to online purchases and web searches, it becomes crucial to have clear the "messy middle"[27] and how the consumer's purchasing methods take place in order to be able to insert tricks or technicalities such as nudges that exploit certain cognitive and behavioral bias to lead the individual to make a certain choice.

[27] By messy middle we mean that chaotic and disorderly process that starts from the first trigger, in which all those stimuli and impulses that sometimes overlap and intersect until the final moment of the purchase of a certain product are inserted.

Visualization of the purchase process and the 'messy middle', i.e. the Exploration and Evaluation stages

People are constantly moving between these twin modes of exploration and evaluation, repeating the cycle as many times as necessary to arrive at a final purchase decision. We see the inclusion of nudges in these two phases that intervene a moment before the purchase and that, as we have anticipated above, exploit the cognitive bias that influence the behavior and purchase decisions, pushing the consumer to choose one product rather than another.

Six bias that influence purchasing decisions (source: www.thinkwithgoogle.com)

The 6 behavioral bias mentioned above are found in:

Category heuristics: Short descriptions of key product information can simplify purchasing decisions.

Power of immediacy: the longer you have to wait for a product, the less you want to buy it. These are delivery times based on geolocation with GPS. Amazon uses it. Estimated delivery time of each item depends on the warehouse closest to the home address of the hypothetical consumer.

Social proof: tips and reviews from other people can be very effective. The need for aggregation and sharing are fundamental for human beings so social media becomes a kind of "goad" that pushes to buy that particular product, if it has been shared for example in times on instangram.

Bias of scarcity: a product becomes more desirable if its availability decreases because people in this case are moved by the lever of scarcity. For example, how many rooms in a hotel, theater seats are left? The last 5 ... Okay, then I'll buy now so as not to miss the opportunity.

Bias of authority: the opinion of an expert or a reliable source is particularly influential.

Power of gratuity: a gift included with a purchase, even if not related to the product purchased, can be a great incentive.

In addition to the bias mentioned before, there is also personalization, a nudge that requires a huge investment in listening and understanding of the user who with his behavior launches messages that companies must grasp in order to understand and sometimes anticipate his requests to achieve a differentiated product that meets the needs of the individual.

These bias formed the basis of an experiment on large-scale purchases with real in-market buyers, in which different purchasing scenarios in the categories of financial services, consumer goods, retail, travel and public services were simulated.

Let's see, on the basis of the experiment that was conducted, whether the above bias worked.

In the experiment buyers were asked to choose their first and second favourite brand within a category and then a series of bias were applied to see if people were willing to change their preferences from one brand to another. To test an extreme scenario, the experiment also included an imaginary brand in each category to which shoppers had never been exposed before.

The results showed that even the least effective competitor, a fictitious brand, managed to win about 30% of shoppers' preferences over an established favorite brand when it proved to have multiple advantages, including good quality reviews (social test) and an offer with an extra 20% discount (power of free). And in the most striking case, the fictitious product attracted 87% of the share of consumer preferences when we gave it advantages for all six bias.

The above mentioned experiment revealed how behavioural sciences, when used wisely, are a powerful tool to orient and win customers' preferences.

But how is it possible to apply these nudges to brands by companies? According to an approach that can guarantee the following aspects:

- Ensure the presence of the brand in a strategic way so that your product or service is noticed and remembered by customers as they explore the options.

- Apply behavioral science principles intelligently and responsibly to make your proposal convincing when consumers evaluate options.

- Bring the trigger time closer to the time of purchase in order to reduce the exposure time of your existing and potential customers to competing brands.

- Create flexible and competent teams to go beyond traditional branding and avoid barriers between departments that risk leaving gaps in consumer decision making.

Especially in the digital age in which we find ourselves, therefore, it becomes fundamental to understand the behaviour of consumers, i.e. what they are looking for, what they need, how they spend their money and their free time by identifying the forces that influence consumer decisions. Only after an in-depth study of the user surfing the internet is it possible to identify a winning strategy that could therefore lead the user to buy a product and/or a service or to repeat a customer experience.

The understanding of attitudes and preferences that influence buying behavior comes from the intersection of various social sciences including psychology, sociology, economics, marketing and neuromarketing, a recent study that investigates the emotions and complex decision-making paths between the synapses of the brain that guide the choices through spontaneous thinking, creating the conditions that favor a behavior without having to think about it, without the intervention of the rational part of our intellect.

The study of consumer behavior also investigates the "social" influences that have a significant impact on the consumer such as family, friends but also the target groups identified on a blog or facebook page, rather than opinion leaders.

Despite the fact that consumer behaviour is difficult to predict, we can say that new research methods have shed new light on this issue and especially in the digital area new tools are coming to our aid, which, thanks to the help of the internet, prove to be fundamental to our purpose.

These are the so-called Big Data (CRM Customer Relationship Management), which are the data relating to consumer behaviour and purchasing habits that are collected in large databases allowing a detailed examination of the behavioural factors that contribute to the customer's intentions to buy a particular product.

This data also helps in the segmentation of the market which is becoming more and more behavioural and which can be used to develop strictly targeted or personalized marketing strategies.

Understanding the dynamics involved in consumer purchasing and consumer behaviour becomes a fundamental challenge for marketing.

In order to understand the mental processes used in purchasing decisions, the concept of "black box" is often used in which the interaction between internal and external stimuli takes place and where the different cognitive and affective processes used by consumers to reach a final decision take place.

The objective, therefore, is to light a beacon on the black box so as to understand where to intervene and to be able to effectively "prodde" the user through those light persuasive forces that guide the choices towards a specific goal.

2.4 The crucial nature of social networks. Facebook, Twitter, and the tools to guide potential customers through funneling. The sequence of steps to get the desired action taken

We mentioned in the previous paragraphs the difference between companies before the digital revolution, i.e. those that operated with traditional marketing, i.e. a market-driven vision, which saw the needs of customers as the only direction to follow in order to satisfy their desires in a profitable way, and companies operating in digital contexts. The entire marketing process has changed, segmentation, targeting and positioning are processed with different optics, the marketing mix changes and the means of communication to reach customers are different and new.

The real turning point comes with the introduction of social networks that have changed not only the lifestyle of all consumers, but also the phases of the traditional marketing process. So we start talking about social media marketing, not marketing campaigns anymore, but social media marketing, passing through marketing planning.

A social media marketing plan is nothing more than a brief account of all social media activities and all the results that the company sets out to achieve by exploiting the potential of social networks.

In order to be effective and well-structured, social media marketing planning must have an internal analysis of customers' prospects, the objectives inherent to their expected position in the medium term and a description of the use of all the social platforms that the company intends to use to achieve these results.

As mentioned above, it is important that the plan is concise but the more detailed it is, and the more accurate the company, the higher the level of achievement of the objectives set. In detail, to be effective, *a social media marketing plan*[28] consists of six necessary phases:

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[28] Described in P. Kotler's social media marketing book.

1. Identification and description of social media marketing objectives: The first step is the definition of the company's objectives and how it intends to achieve them. From a digital and social point of view, when the company sets its objectives, it should use a SMART approach, i.e. Specific (identifying a specific field where a change or improvement can be made); Measurable (using statistical indexes to quantify the progress achieved step by step); Achievable (Trying to align the company's general objectives and more specific objectives on a single vision); Realistic (Based on available resources, the company should outline achievable objectives); Time-related (Indicating the time available to achieve the objectives).

2. Do a social media audit: In this second phase, even before drawing up the actual social media marketing plan, the company should carry out an analysis on the actual use of social media, which are the platforms that the target clientele uses the most, understand if they should be updated, eliminated or simply maintained.

3. Choosing the most relevant social platforms to work on: In phase three, it is necessary to identify what type of online presence to carry out in accordance with the company's mission and objectives.

4. Take inspiration from industry social media leaders, competitors and opinion leaders in online communities: It is important to understand how to act and take inspiration from influencers and those considered experts in the field. They can provide relevant information about the type of content to express and how to do so.

5. Create a content plan and program for social media marketing actions: Each social media marketing plan should have a *content marketing*[29] plan within it and should also include the various actions it wants to include on social media in a social calendar so that it is always up-to-date and able to change certain content at the right time.

[29] "Content marketing is a type of strategic marketing that consists of designing, structuring and distributing valuable content in order to attract a target audience to your website or social network, create a relationship and ultimately increase sales"; Wikipedia.

6. <u>Experiment, evaluate and modify the social media marketing plan:</u> Of fundamental importance in this last phase of the plan is to constantly subject the social media marketing plan to experimental tests aimed at understanding the actual effectiveness of the plan created.

Consumer behaviour, thanks to social media, is constantly influenced both in terms of information retrieval and in purchasing attitudes, opinions and post-purchase impressions.

It is therefore clear that communication has undergone significant changes. In these terms, social networking has distinguished itself from traditional communication tools, mainly through social platforms through which consumers are able to converse and exchange views with each other.

In this way, companies are able to get in touch with the consumer through blogs, sponsoring or having other individuals or organizations sponsor the content under discussion and it is the task of the company to influence the conversations that consumers have established in a C2C perspective.

But how can a company actually control, understand and influence consumer behaviour in the digital age, having in front of it a well-informed person, who exploits socials in their favour and with such a marked competition in the market?

To date, in the online world, the tool that most effectively influences consumer behavior is Funnel, but before going into detail it is useful to describe the social platforms most used by individuals and most useful for businesses to carry out funneling techniques and to direct them then trying to involve them in an interactive multimedia experience full of bi-directional stimuli between company and consumer.

In fact, it is now clear that digital technology has triggered an irreversible process that has twofold implications: on the one hand, before making a purchase, the customer consciously consults the web in order to optimize it through the comparison with the various alternatives, on the other hand, it is the web that needs the customer to propose the options most appropriate to him by studying his preferences and the traces in this sense left by the consumer pushing him in a certain direction.

1. FACEBOOK

Facebook, launched by Mark Zuckemberg in February 2004, is the American giant of online social media, based in California and is the most used networking service by the entire world population. The online presence of companies on this platform is therefore essential. Facebook has two types of social services with different purposes available in its organizational structure: personal profiles and Facebook page. While the first is intended for use by individual users and is the main structure of the platform, Facebook pages have mainly corporate purposes.

In fact, Facebook is also widely used by companies for the promotion of their brands through the publication of organic posts and advertisements, the Canvas.
An engaging and totalizing experience almost to be defined as immersive because when the user clicks on the content - which apparently looks like a link, with preview and caption - the post appears on the whole screen offering the possibility to browse through videos and photos freely as if it were the page of a site.

The difference, however, is that the canvases are much faster in uploading multimedia content, allowing an immersive navigation offering different types of content to interact with. This allows you to create an interactive experience with your audience, sometimes personalized without incurring additional costs compared to common Facebook ads, thus promoting your marketing in a targeted and more effective way.

Another "corporate" feature recently launched by facebook in the e-commerce sector is Facebook shop, which allows you to sponsor and sell your products both on this platform and on istangram.

With this virtual showcase it will be possible to insert all the products without any numerical limit and without the need to create the catalogue on another platform and then implement it on Facebook; it will also be possible to customize the product catalogue dividing them into categories to make navigation easier and it will also become possible to establish a two-way communication relationship with customers, who will be able to send a message in real time and ask all the useful questions directly from the showcase.

Also for statistical purposes this tool is very useful: you can see the total number of views, clicks and all the other key performance indicators (KPIs) useful to monitor the trend of a given product.

2. TWITTER

Unlike Facebook, Twitter is a microblogging platform that sets limits and restrictions on individual posts. The characterizing element of Twitter is definitely the "Tweet" and that is the message, composed of a maximum of 280 characters. The peculiarity of these messages is that each tweet is stored on a database, called timeline. The union of each database, composed of timelines, forms a dense network of information that become a powerful pool of data from which you can extract elements to start business intelligence activities.

It is also important to point out that on Twitter there is an algorithm that traces the quotes of rather long words and phrases, putting in the foreground the topic that is discussed more in a given period of time. The Trends section is also an excellent tool to see the interest of Twitter communities in the time frame analyzed. Companies also have client applications such as TweetDeck or Hootsuite, which allow them to monitor multiple keywords in real time, so they are always up-to-date.

Today's companies have had to face these innovations thanks to the advent of digital technologies, changing their vision and marketing techniques, as well as the tools aimed at attracting the interest of consumers, their behavior during the various phases of the purchasing process and the loyalty techniques concerning the post-purchase phases.

To make this happen, it is necessary to understand the Funnel model, its evolution and its fields of application.

As explained above, before the digital age, companies' approach to the market was focused on push type strategies, dictated by broadcasting type communication strategies, theorized on the one-to-many scheme, typical of mass communication. The main function of marketing in that particular context was to interact, through the classic communication channels (radio, TV, press, communication in the physical store, etc. ...), with the consumer to direct him to the choice of the product or service that could meet his needs.

With the advent of the Internet, this unidirectional model no longer has the same effectiveness because the consumer is no longer a passive user but an active and interactive subject in the decision-making and purchasing process, and is also able to change the decisions of other consumers. In the digital context, on the other hand, the decision-making process increasingly seems to be a circular process where all the phases of the funnel condition each other and aim at achieving the final objective. The important thing is the experience that the consumer perceives through all the contact points in the interaction with the company.

The funnel is a *"marketing model traditionally used to describe and analyze the path to purchase, i.e. the path taken by the consumer during the purchasing process, from the moment of awareness of the existence of a certain product, to the purchase of the product itself"*[30].

Literally funnel means "funnel" and is nothing more than a metaphor that explains the skimming that manifests itself during the stages of the consumer's decision-making process, starting from a multiplicity of known products or brands up to the choice of the final purchase.

In marketing the concept of funnel has evolved progressively but the concept on which it theorizes is based on the Lead Generation, that is how companies find, manage and transform consumers into paying customers.

The power of this model lies in knowing how to use the funnel tool creating a strategic path to transform a stranger, in a person who has information or knows the company, to one who trusts and wants to buy the products or services of the company itself.

[30] from the Marketing Glossary.

There are several models of funnel, mainly six:

1. Optin Lead Capture Funnel: This type of funnel is used when you want to collect contacts and addresses, offering consumers a video, pdf or other to attract attention.

2. Sales Funnel: In this context the funnel that is created is specific and ad hoc to help the consumer in the buying process and to encourage him to buy more.

3. Webinar Funnel: Here a funnel model is built on the basis of a Webinar. It is nothing more than a neologism, it comes from the coining of the words web and seminar.

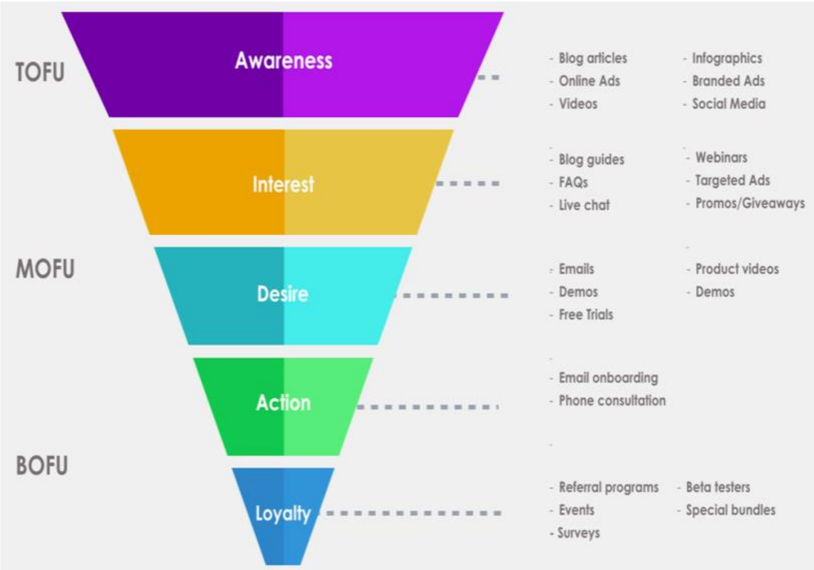
4. Membership Funnel: It is mainly used to promote membership with periodic subscription (through a payment).

5. Launch Funnel: This model is also based on finding contacts in return for an incentive to attract consumer interest (such as free video tutorials if the consumer leaves his email contact on a link).

6. Custom Funnel: This is the most detailed and most expensive funnel model for the company as each process is customized according to the attitudes, tastes, habits and desires of the individual.

Although there are different definitions of funnel depending on the nature of business in which it is contextualized, the model known as Traditional Funnel seems to be the most articulated, complete and to be taken as a reference because it does not end at the time of purchase but continues with the loyalty of the new customer.

The following figure represents this model:



(i) AWARENESS : Awareness is the first phase of the funnel where the consumer, through advertising, acquires information and awareness of the brand or product in question. In this phase, at a general level, the consumer conceives in his mind a product category and evaluates and considers a set of products or services within it.

(ii) INTEREST: In this second phase, the consumer has verified and informed himself about the characteristics and information related to the brand, thanks to search engines, word of mouth, reviews, etc., and is included in an ideal list where the company becomes so familiar and therefore recognizable by the individual on the market.

(iii) DESIRE: At this stage, the potential customer compares, with the tools available to him/her, the prices, offers and characteristics of a restricted range of brands or products, but only after having developed greater awareness of the companies under analysis.

(iv) ACTION: This is the final action stage, i.e. the purchase, but it is not considered as the final stage of the customer's journey.

(v) LOYALTY: The customer, once purchased the product or service, verifies whether his needs and expectations are met on the basis of the experience of consumption of the product that will guide future purchasing decisions. If this customer is satisfied, he or she will not only tend to buy back the product or service, but is willing to spread a positive image of the product or service to other consumers.

This traditional funnel model can also be conceived as a conversion funnel as the five states of the classic model are divided into three macro areas.
These areas are:

- **TOP OF THE FUNNEL (TOFU).** The first macro-area of the conversion funnel is based on the assumption that the consumer is aware of the existence of the product or service or brand in question. The first phase therefore coincides with awareness, i.e. the notoriety of the product or brand in the mind of the individual. To achieve this result the company will have to develop advertising campaigns through traditional methods (TV campaigns, events, etc. ...) or online (social media marketing, display advertising, etc. ...).

- **MIDDLE OF THE FUNNEL (MOFU).** In this phase, called middle of the funnel, the consumer learns all the information necessary to carry out a detailed assessment of the brands or products in question by analysing all the components, such as price and quality, that characterise the final benefit of the individual. The company will have to make sure that it is present in the consumer's consideration set, trying to satisfy his needs.

- **BOTTOM OF THE FUNNEL (BOFU).** This is the final stage of this process that manifests itself with the consumer's purchase intention related to the product or brand that has satisfied their interests. In this phase a specific conversion event is analysed. The individual performs the action related to the purchase, desired by the company, thanks to the stimuli issued by the (advertising) content propagated in the previous phases such as the subscription to a newsletter.

It is therefore during the above mentioned phases that various nudging strategies can be grafted to push the user browsing online to buy a specific product by inserting as skillfully as possible in its funnel.

As we have seen the new social platforms offer us this possibility and one is offered by facebook, being able to use this channel to structure a sales channel. It starts from the exploitation of the audience on facebook by entering among the contacts that are closer to its target and could then well respond to an input aimed at conveying the message of purchase of that particular product.

In the planning of this strategy, knowledge of potential customers, their interests, expectations and needs in each phase is essential. This will give the brand a competitive advantage over others. Through the use of different types of content and ad hoc ads to attract users' attention, we can adopt the nudging strategies previously analyzed but applied to web advertising: this will be the next step that we will go through shortly in the next chapter.

2.4.1 The digital revolution: the new opportunities offered by blockchain in digital marketing

Technological progress has made the world a "digitally revolutionized" platform, allowing people and industries to evolve faster and be increasingly interconnected. On the one hand, it has increased profit opportunities and productivity for companies, but at the same time it has boosted their competitiveness. This is why companies are now making technology an important lever on which to invest to achieve success.

The digital revolution, as we will see, is not only based on technology but needs people who are the real key to increase the value of the transformation and allow its sustainability over time. This means permeating technology into the corporate culture and therefore into organizations by making staff more informed and prepared for change.

The digital phenomenon has involved several sectors in a transversal way and therefore in the economy and finance we have witnessed the modification of global distribution networks allowing a greater range of products and services with much shorter procurement times, or the robo advisors who offer digital financial advice used mainly by a young public.

But the last frontier that comes to our aid from digital technology is certainly the blockchain: a sort of distributed public register that records transactions between two parties in an efficient, verifiable and permanent way.

Let's imagine, then, that the data on the transactions made by the users will flow into a huge virtual register. Users are given a "key" that identifies them and their digital portfolios. Periodically (every 10 minutes), the technology collects a good part of these transactions in blocks that are linked together like a chain.

But the real strength of the blockchain lies in its decentralized structure that guarantees high security in terms of privacy over the same time: no one really owns it because it is located on many devices and servers around the world.

In addition to the financial sector, the blockchain is also beginning to be used in digital marketing, offering multiple advantages. One of these is the cancellation of intermediaries between advertisers and users who are involved in the distribution of data.

Every action we take in the marketing field must almost always pass through intermediaries and the data that comes back after facing multiple changes from entity to entity, deteriorate in quality and in the end we don't really know who they belong to, thus requiring additional time and resources to understand the response of our audience.

Because it's a transparent, encrypted chain, companies with blockchain technology can easily determine how many people are viewing their ad or making a particular click.

The process with the blockchain is therefore made more efficient and possible as the negotiation between the parties takes place directly and decentrally, without an authority to control and direct the processes.

This leads to a reduction in additional costs and an increase in profit margin. The current online ad structure is highly inefficient, expensive and complex as advertisers incur high costs for displaying their ads on websites or online platforms. And sometimes success is not even assured as this does not necessarily reach the target audience. The only parties that get the maximum benefits are intermediaries such as Google or Facebook.

However, blockchain-based companies have recently started to take advantage of technology to introduce a simpler and more beneficial system for all parties. A company called Brave uses blockchain to allow users to decide what type of advertising they want to see.

The Blockchain can also be used to create a tokenized currency to produce loyalty programs. Through tokenisation, a brand can create its own currency that can then be used by its customers as a reward to make an additional purchase, encouraging customer loyalty.

For example, Loyal is one such platform that uses tokenisation on blockchain for customer loyalty programs. The impact of blockchain on digital and online marketing is so significant that many blockchain-based digital marketing projects have already begun to evaluate and develop solutions.

An example could be the proposal that has been made in this area by the Lombardy Region for the creation of a blockchain that could provide a regional cryptocurrency with which to assign "credits" as a result of the virtuous behavior of citizens.

The application of cryptocurrencies is nothing more than an example of nudge because it pushes citizens to behave in a correct civic way and to obtain a prize.
The same credits can then be used for the payment of local taxes, thus creating an integration with the local taxation system. With a nudge approach, therefore, innovative services could be developed, creating an induction functional to the welfare of the community.

CHAPTER 3

3.1 The soft push in online marketing: practical cases of success using nudging technicalities

Who doesn't remember the famous payoff "altissima, purissima, Levissima" with the climber Messner who drank the famous water from high altitude springs in the 90s? Probably this spot remained in the collective scenario but even if it was an excellent starting point, it represented at the same time its limit: the brand was continuously associated with the mountain world.

But Levissima was much more than that and wanted to get down from the heights to involve a more urban and everyday context and therefore to embrace a wider audience, that of the every day climbers, that is to say all those who in their lives have a destination to conquer, small or large.

Levissima therefore wants to become the water "for your thirst for life". In order to achieve this new and challenging goal, the brand owner uses the facebook page to create practical and quick tips for Levissima users, every day climbers.

These motivational tips, of which we will soon see examples, have been implemented through one of the most innovative tools provided by social networks, the canvas that, as we said, offers the user an engaging experience, a full immersion in various multimedia content that can be images, videos, carousels, text and links through the wise use of nudging techniques.

In particular, the canvas starts with a video that shows the behavior to be adopted followed by the technical explanation of nudge followed by other examples that are based on the same principle, in order to consolidate the technique through which the message is conveyed.

Finally, a link directs the user to the section of the magazine Levissima, dedicated to every day climbers where they collect their stories, stories of people who thirst for life and for this reason have achieved the goals set by their daily challenges.

The brand, therefore, through this online campaign designed by Ogilvy Change, decided to rely on Behavioral Economics using all those cognitive nudging techniques that - by exploiting the potential of social networks - were considered an opportunity to achieve the goal.

His audience of everydayclimbers, in which each one of us can probably identify with, is represented by people who, in facing daily challenges with the right determination, sometimes find themselves wavering a bit because they encounter an obstacle along their path that seems insurmountable: it is at that moment that you may need a little push from the outside, an encouragement that allows us to start again. All right, but how?

Levin's equation, reported below, has taught us that to modify a given behaviour one can choose to intervene on the context or directly on the individual person:

$$B = f(p \longleftrightarrow e)$$

Where B precisely stands for Behaviour which in turn is function or rather the result of the interaction between the personality of an individual and the environment in which he acts.

Clearly it is much easier to act on the context lever, a standard element, rather than acting on the single person because a single intervention on the environment is able to modify and therefore to influence multiple ways of acting.

This was also the choice of Levissima that encouraged everyday climbers to reach their goal by changing the context within which they move.

Here are the tips on facebook: through the wise use of practical and quick tips on everyday life, acting as a nudge, you train the determination by prodding the individual's action in such a way as to make the effort through which the goal is achieved!

3.2 Framing, chunnking and social proofing applied by Levissima

This technique is adopted from the field of psychology and shows that by acting on the context by modifying it, it is possible to influence the behaviour itself. Think about the shape of a glass and how it can act on a simple action: drinking water.

With the same amount of water, a low and wide glass will seem to contain a smaller amount of water than an elongated and narrow glass. The result? With the first glass you are led to drink much more water but without any effort, that is, you will do it unconsciously.

Some tips on facebook aim to improve individual daily hydration by playing with the shape of the glass.

Other Canvas used by Levissima instead use another nudge technique known as Chunking. This technique is also borrowed from psychology and is aimed at creating the notivation to reach goals that are usually far away in time, dividing the path into many small goals that once achieved create satisfaction and therefore stimulate the behavior of the individual to reach the next goal.

In the Levissima campaign these tips aim to stimulate individual physical activity, for example by trying to replace the use of public transport with a healthy walk on the way home to work. But as we have said, it is necessary to act on the lever of determination: for this reason the route has been divided into stages - identified in the different stops of the tram - making the user aware to get off one stop each time before.

It's a way to make the distant goal less demotivating by easily reaching the set goal. The small success brought home every day creates the right dose of determination and encouragement that leads to the achievement of the final goal.

Finally, another technique used by the brand that usually proves to be very effective is social proofing, according to which the behavior of an individual is strongly influenced by the opinion of other individuals and will tend to replicate what others already do.

Such an attitude is found since the beginning but today even more so this social phenomenon is amplified by social networks where at any time we can know the opinion of others that is "posted" on facebook rather than on instagram by influencers or bloggers that is often perceived by users as "relevant motion" to the point of conditioning their behavior.

There is then another mechanism that creeps into social proofing: the fact that many individuals are adopting a certain behavior, that given behavior or action is perceived as the best. This technique is also used here by Levissima to increase motivation linked to physical activity.

One of these tips, taken up again in the questionnaire described in the fourth chapter and which will be given to a wide audience of users, reads as follows: *"It's easy to be motivated if you are surrounded by people who share the same passions as you. The social context in which you make your decisions has a positive impact on your choices".*

So a demonstration of strength is given to us in a simple action: to do jojjing in a park where we are surrounded by people who practice the same sport. Seeing this action carried out by other individuals will probably tend to increase our desire to jog and we will probably overcome fatigue, boredom or other negative stimuli.

One of Levissima's tips said just that:

"We are pack animals and very often we find ourselves making decisions following the example of others around us, or the basis of their judgment. It is our nature but these dynamics are not necessarily negative: we can use them to our own advantage, to motivate ourselves and achieve our goals".

Speaking of results after six months and six published canvases, +140k engaged users, +10K interactions were obtained, which are very positive numbers and, very important, a mineral water brand like Levissima could compare with other brands like Adidas, Nike, Gatorade finding the right language to talk about issues more similar to the brands just mentioned such as determination and challenges to face every day helping people to adopt the right behaviors to win their challenge.

Of fundamental importance was also the tool chosen to deliver such content: facebook proved to be the right tool to transform a niche content with a rather academic tone into a pop topic accessible to a heterogeneous audience.

The canvas then with its engaging multimedia content did the rest: and Levissima reached, even on social networks, its highest peak!

Fig. 1 Screenshot of Canvas Facebook dedicated to social Proofing

3.3 The "Moving gesture" campaign designed by Cimade

Another example of an online advertising campaign that uses nudging strategies on social networks in order to influence a certain user behavior is the one carried out by Cimade in October 2016 on facebook.

Cimade[31] is a Paris-based association founded in 1939 that aims to show active solidarity and political support for migrants, refugees and displaced persons and asylum seekers and irregular foreigners.

Specifically, given the particular social context in France with reference to the issue of immigration, which represents a serious social problem, a large part of French public opinion shows indifference towards immigrants by showing attitudes of rejection and total closure, increasingly demanding the expulsion of migrants abroad.

It is in this social context that Cimade has created the digital campaign that we are about to analyse, created to raise public awareness of the cause of migrants, through a gentle push that becomes a little more pervasive to the point of requiring at some point an interaction with the user, i.e. active participation.

The campaign uses the video carousel tool of facebook and is based on the idea of making the user relive the history of migrants, with all the problems, difficulties, vicissitudes they face once they land in France, leading them to a sort of identification with the main character. The innovative element consists in giving the possibility at the end of the carousel video to make swipe, i.e. to move nimbly (with a simple lateral movement with the thumb) along the short film to move for example at the beginning of a new video in which the difficulty has been overcome.

This has given the possibility to create stories of longer duration, involving more and more the user, who, at a certain point, is asked, thus activating him/her in a real

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[31] In particular, Cimade operates in the following areas:

- legal assistance to foreigners detained in administrative detention centres, management of health and social institutions, training and linguistic adaptation. These activities are provided by public funding and conventions;

- reception of foreigners in legal hotlines, international solidarity actions, interventions in prisons and detention facilities, raising public and political awareness of the association's issues. These activities are financed mainly from the association's own funds (source: Wikipedia).

way, if he/she wants to give a concrete help to advocate the migrants' cause through a fundraiser destined to Cimade, deciding in this way whether to concretely help the character of the story or at least - through the sharing of the video just watched with his/her circle of friends - further sensitizing public opinion on this issue.

In particular, three stories have been conceived, each consisting of five videos, with the aim of telling in a realistic way the most critical situations that emigrants experience every day and that we may not even imagine.

The three carousels represent the migrants' obstacles by contextualizing three different types of situations with three different characters (The Story of Elias, Irena and Zeinab):

- the "jungle of Calais" which illustrates in a plausible way what can happen at the borders;
- the illegal employment of people without a residence permit;
- the administrative procedures for obtaining and renewing residence permits.

Even the choice of characters, in order to make it as realistic as possible, was not accidental since people, currently legal immigrants, have really lived such difficulties, leading to build an experience as engaging as possible.

Let's come to the results: after only one month of activation of the campaign on facebook (the only channel for the campaign), a reach of 6.7 million French people was recorded, which involved 5.9 million views and more than 50,000 interactions between likes, shares and comments.

Beyond the numbers that can more or less give a quantitative representation of the phenomenon, we can say that, from a qualitative information point of view, 73% of people between 45 and 54 years old exposed to the campaign agree on the opinion that *"people should be able to move freely"*, while 44% of people between 35 and 44 years old, after watching the videos, say they are ready to "*mobilize and take action for migrants*".

So here is how a *"simple gesture on the smartphone can change things by influencing people in a positive way towards the right path"*. Here's how the goad worked, too.

Fig. 2 The Moving Gesture campaign can also be found at https://vimeo.com/208457239.

3.4 The use of Nudge in digital: Apps

As we have seen, the skillful use of goads is now a pervasive reality in many areas and in the digital age, in addition to the increasing number of online campaigns that use gentle urges, even Apps - increasingly downloaded on our smartphones - now make extensive use of these strategies in the form of various gimmicks that push the user to achieve the goal set.

As an example, an App that deals with the management of personal finance is GIMMI 5[32], an application that through a game mechanism and prodding aims to influence the user's behavior in order to encourage the accumulation of a certain monthly budget.

Gimmi 5 has been awarded as the best App at FintechAge Awards 2019, the prestigious award given by Blue Financial Communication to the most dynamic players in the Fintec sector. To date, this application counts the registration of 300K users, allowing them to save 50 million Euros for a generated value of 3 million Euros with 10,000 targets achieved.

The program opens with a statement with a strong motivational value that reads as follows*: "you don't need large sums to start accumulating capital and achieve your goals. Imagine saving the equivalent of one coffee a day and one beer a week. In a year you have saved 625€. Not bad, right?"*

Day after day you can choose whether and how much you want to save in total freedom and without constraints by simply clicking on the app, getting Joink. At the end of the month Gimme5 will calculate the sum of your Joinks, which will be fed with the payment method you prefer; you can for example choose between transfer, RID/SDD, Credit Cards and Satispay.

Moreover, with the wise use of automatisms, which act as a default condition that can be modified by the user, the so-called Gimme5 automatic rules, it is possible

[32] The service is the result of an initiative by AcomeA SGR: an asset management company independent of banking groups, led by professionals with long experience in the sector, which has over 50,000 customers and assets under management of approximately EUR 1.5 billion.

to set automatic Joinks or periodical investments, in order to personalize the app experience to the maximum, leading the user to save in an easy and effortless way.

In addition, the app in question, in accordance with the nudge philosophy that leaves the individual free to act, does not place constraints as the user is always free to save money depending on his possibilities by choosing the speed most suited to his needs among the Short Term, Dynamic or Aggressive profiles.

Once a month, the amount saved is invested in the chosen fund.

The operation of the App is based on a path of concrete objectives to be achieved that "stings" and directs the user's behavior so that the user can better manage his personal finance. In fact, saving without an objective can be difficult, therefore the App is based on the structuring of concrete objectives, which measure the progress achieved.

Therefore you start by setting your savings goal, defining the amount you want to achieve and you start saving; with each joink the user will be closer and closer to his goal.

With Gimme5 you can also set up to five goals at a time. Another mechanism on which the App is based and that uses the use of nudges, useful to encourage the user to save money, is that of social proofing. In fact, even in this context the opinions and judgements of others are relevant: with Gimme5 you can share your goals and get help to reach them from those close to you.

Moreover, the user can also support the people he cares about and contribute to making their dreams come true.

Fig. 3 represent the GIMME5's initial page

Another app that takes advantage of such an approach is FITBIT, which offers the possibility to be downloaded on smartphones, the application "for everyone's fitness" with which you can stay fit and achieve your goals in an easy way.

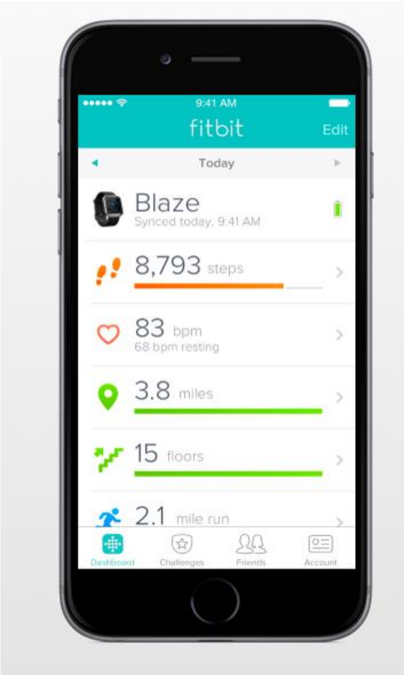
The exercises recorded are displayed in the user's training calendar so that the user can recheck the results achieved and use data and trends to make progress towards his goal. Each goal achieved also shows the calories burned, a mechanism that acts as a goad as it pushes you to do more and more, will come the achievement of a new goal.

In addition, with fitbit you can share an image or selfie once you have reached the maximum of the exercise. The user's image and statistics can be sent to friends and followers on any social network or via e-mail and SMS, again as proof of how important the social context is for the achievement of goals, influencing the behavior of individuals and involving even the laziest people!

In particular on the Fitbit site there is a whole section that tells true stories of various users, people from all over the world who have changed their lives with Fitbit, leading to the reading of what motivated them.

Once again the opinion and judgement of others can be revealed as the basis of our choices.

Fig. 4 represents some of the details of the physical activity on FITBIT



3.5 Nudging and environmental sustainability. Offline advertising campaigns

Nudge tools are widely used by communication agencies to promote targeted communication campaigns both for companies that want to bring their products to market and for public administrations that promote social development. It is precisely policy makers who have the power to develop and define guidelines and strategies regarding the most important and significant issues for society and politics, are effective in encouraging individuals to behave virtuously.

In these pages we report some experiences of the application of nudges in off-line campaigns focused mainly on the theme of environmental sustainability and we verify what the results have been.

In some contexts individuals may incur the possibility of suffering damage related to more or less predictable circumstances. Sometimes they suffer damage by taking excessive risks and letting their decisions be influenced by incorrect or inaccurate information.

Rather than imposing prohibitions, limitations that individuals often find it difficult to respect or, even worse, ignore, the same Administrations resort to and try to intervene through incentives, whose "mission" is precisely that of obtaining optimal results for the entire community, without depriving individuals of freedom or possibility of choice. All this without exaggeration as they could have the opposite effect.

A central point of these new theories consists in overcoming human irrationality by trying to anticipate the direction that the behaviour of individuals will take.

Such anticipations go in the direction of promoting norms and producing rules in a wide variety of fields, including economic policy. Institutions also sometimes make errors of judgment in trying to take measures to solve collective problems. Governments are increasingly resorting to such theories to make public policies more effective.

It is for this reason that experts in behavioural issues that public administrations use and seek to identify mechanisms that can support citizens in making better decisions in their daily lives, exposing them to stimuli and remedying the mistakes they are often led to make in a predictable way.

Sometimes, all that is needed are expedients, stimuli or modifiable contexts to promote better choices without changing the constraints available to individuals, constraints to which they are anchored.

This behaviour is called "status quo bias": individuals tend to remain anchored to the present situation, even from the new situation they could gain advantages.

The world today is becoming increasingly aware of the cause of the environment: in fact, people all over the world have taken action to prevent the collapse of our planet earth. Advertising campaigns aimed at raising public awareness have as their objective the containment of waste of non-renewable resources, the reduction of plastics in the seas, the reduction of waste in order to recycle everything that can be reused, while maintaining a cleaner and more sustainable environment.

There are many advertising campaigns dealing with the pollution caused by plastics, i.e. the dissemination and storage of plastic products in the environment that alter the environmental conditions in which animals or plants or any living thing live.

These advertising campaigns show us disastrous scenarios that make us think that the time has come to take action for this cause and that if we do not act immediately (and we are already behind schedule) the consequences will inevitably lead to temperatures rising by at least two degrees, the visible effect of which will be a rise in sea levels.

Yet between the awareness of the risks for the planet resulting from our poorly defensible and sustainable lifestyles and the real change of pace of our habits (such as the reduction of waste, separate collection, less use of plastics or non-renewable energy), there is an unacceptable behavioural gap.

Individuals, as rational beings, should be able to change, prompted by such alarming cry, their attitudes towards this problem, but their behaviour is often far from being aware of the resolution of such problems.

The task of the Administrations, of politics and their administrators is to encourage, in any field, a correct behaviour towards environmental and non-environmental issues, which involve the life of every citizen.

The best way to address and involve the conscience of individuals, it would not seem to be the application of some theory, but the recommended path would be the use of the practice of the "gentle push", or sweet rules, or tools that are actually able to change the action of the individual for the benefit of the whole community, without the application of punishments provided by law.

The question we ask ourselves at this point is: "Why do people often engage in bad habits despite having made an explicit choice to avoid such behaviour". The answer is to be found in the behaviour of the individual who often makes mistakes in a predictable way.

And if it is quite difficult to change the behaviour of the individual citizen, environmental policies combined with the above mentioned methods can be a winning strategy.

An example of the use and application of nudge and its incisiveness is how to limit the waste of towels still clean in hotels.

In fact, a tag is often placed on the sink with an invitation saying "90% of people do not throw the towels on the floor" instead of the ban "do not throw them on the floor". In this way it is suggested, if possible, the reuse of the same, in order to avoid the waste of water and limit the use of detergents needed for washing, which contribute to the pollution of the seas.

Here the social invitation and the desire to conform and join with others, emulating them, makes it possible, in a virtuous way, to push the individual and the community to engage in green behaviour.

Remaining always in the field of sustainability and green, we cite another example of nudge. About ten years ago a campaign was promoted in Japan in which, in order to limit the consumption of air conditioning, and therefore carbon dioxide emissions in the air, workers were invited to wear light clothing in the workplace instead of a jacket and tie.

The invitation was welcomed and the result was surprising, as there was indeed a substantial reduction in air pollution.

Another example of nudge always aimed at eliminating waste was prepared in Germany in 2014. The experiment consisted of replacing the criterion of the odometer in the car with an automatic mechanism that calculated the fuel costs for each trip made. The result, of course, was to reduce fuel consumption in order to reduce the outlay as much as possible.

We must point out that individuals often declare themselves to be informed about various issues, such as sustainable consumption, that is, the consumption of electricity produced from renewable sources, but then in reality only a small number of people are inclined to sign contracts for the supply of energy from renewable sources, or buy products, or items with a low environmental impact.

In fact, we have to admit that there is a gap to be filled between the unawareness, the lack of information of individuals and the initiatives actually implemented or executed, as they are often reluctant to change.

Different techniques are used to facilitate environmentally friendly attitudes.

Here we are going to identify some examples of the application of nudges developed through the creation of ad hoc advertising campaigns, in order to involve the community in paying more attention to the various issues that affect our lives.

The issues of resource saving, energy saving and waste and waste management increasingly involve the moral sphere of people.

In order to reduce energy consumption, displays showing energy consumption in the home have been introduced. Not only did seeing how much energy has already been consumed lead people to optimally regulate their own consumption, but what drove people to reduce consumption was above all to consider the negative effects on the environment and health.

The distribution of old bills to households has also contributed to the reduction in consumption, as this comparison has enabled them to compare current consumption with past consumption or that of households in the neighbourhood (social comparison). This comparison has led to a significant reduction in consumption.

At the same time, the experiment mentioned above also concerned the dissemination to users of messages containing, for example, information on the negative effects on the environment and health caused by current energy consumption.

This strategy led to a reduction in consumption in the households that had read the messages.

There are three prerequisites that fall within the sphere of the *"gentle push"*: soft interventions, environmental education and awareness campaigns.

The first step to be taken is to provide people with information that must be accessible, clear, simple. Often, if the information alone is not enough to guide people's behaviour to make choices that are also useful for the community, this information is supported by other techniques.

Another theme where nudges are present concerns the information on food product labels that indicate the sustainability of the product and direct individuals to the purchase of such goods. On the label is indicated the goodness of the product as the non-use of pesticides, or other chemicals harmful to humans and the environment.

Another example concerns the energy efficiency of household appliances. The letters of the alphabet are used to indicate that the appliance has less consumption (A) than another appliance whose label indicates the letter E indicates higher consumption. This strategy has led people to buy more efficient appliances in order to achieve a reduction in consumption.

Another nudge related to energy efficiency is real time information, or smart grid networks, i.e. the possibility to have in real time the count of how much is being consumed and therefore to moderate and control consumption. The results were very convincing.

Often, however, individuals do not try to make efforts to change their idea or position or to give answers to the questions to which they are submitted so they align themselves with the choices of other individuals while being aware that the choice adopted by other subjects may not be the correct one. In this case it is said that they act by default, i.e. through an option already chosen by others and is particularly effective so as to generate positive impacts on the quality of the environment.

The second option, on the contrary, concerns the inertia of people who sometimes postpone the choices in order not to change the default options that work as a reference point or status quo and any detachment is seen as a loss.

Another example of intervention on the physical environment, mainly concerned the issue of separate collection, recycling and reduction of food waste. The suggestion could be the simple positioning of the different bins in condominiums in an easily accessible way and placing the undifferentiated bin further away from the paper, plastic, etc., which sometimes for pure laziness individuals put in the undifferentiated bin not respecting the correct indications in order to obtain a correct waste disposal.

Also with regard to food waste the suggested intervention can lead to a positive effect. The use of small serving dishes can push people not to fill the dish very much without wasting food. The option also included inviting people to fill the plate several times if necessary.

To conclude, we analyze an important advertising experience that has made the difference in the introduction of separate collection in the city of Bari.

The mission is precisely to intervene on the culture of daily life of the people of Bari making it respectful not only of today's citizens but also of those of tomorrow.

In order to do this, we thought of an awareness campaign that would leave behind fines and bans in order to introduce simple expedients that would go straight to the heart of the people of Bari, focusing on respect for children and the generations of tomorrow.

In fact, it is well known that punitive or deterrent practices, such as the introduction of cameras positioned in critical areas of the city characterized by the abandonment of bulky waste, or the provision and fines for bad behavior, have not proved to be sufficient. More had to be done: that is, transforming the fear of fines into the awareness of a gesture that turns into a benefit.

Another element of difficulty consisted, in addition to transforming an incorrect behaviour of people in waste management with effective punches, in addressing the same message to the heterogeneous target of the population of Bari, characterized by individuals with different social and cultural back ground.

The founding elements of this campaign, initially developed door-to-door, were two: the logo and the play off.

The brand takes up the traditional symbol of the waste cycle but, having to aim at the soul of the people of Bari, it turns it into a heart, pushing them to make a gesture of love for the environment, a proper recycling of waste, while the slogan reads *"Who loves you makes the difference"*.

The latter pushes to make a correct differentiation for a moral responsibility towards the generation of today and tomorrow, an act of love and respect. The information campaign is characterized by a poster depicting a little girl knocking on a door exclaiming *"knock-knock, everyone's ready to collect, the door to door has arrived"*, and therefore an attempt was made to act unconsciously on the weak point of people who have children or grandchildren, children indicating people to adopt a correct behaviour.

This communicative process was supported by the social network, acting as a platform for sharing and organizing the project itself, which at the same time took on a fundamental relational role.

3.6 Covid-19: the contribution of behavioural sciences in emergency management

The nudge strategies that we have analysed so far, are not only applied in advertising campaigns that exploit digital tacnology, but also to promote environmental sustainability. Their pervasiveness is demonstrated by the fact that they have been and are also applied in everyday life, and in particular, in today's everyday life unfortunately cratered by a health emergency.

In fact, we will soon see the behavioral bias developed by individuals in this period, analyzing at the same time the techniques coming from behavioral science that can help us to have better, more rational behaviors, turning limits into accidents.

Today we find ourselves in a completely anomalous context, characterized by the emergence of COVID-19. This new scenario has given rise to irrational behaviour on the part of individuals caused mainly by cognitive bias.

It is precisely in this context that behavioural sciences, by modifying the structure and context, influence and direct people towards choices aimed at maximising utility and personal well-being, through the use and implementation of nudges.

So the management of this crisis can become an opportunity since nudges, by applying changes to the context, influence our behaviours towards better choices.

After a careful analysis of the behaviors that have arisen in this new scenario and the methods of interpretation given by the Behavioral Sciences, proposes a method in 5 steps to address and make the most of their communication in light of the new scenario that will be created at the end of the health emergency.

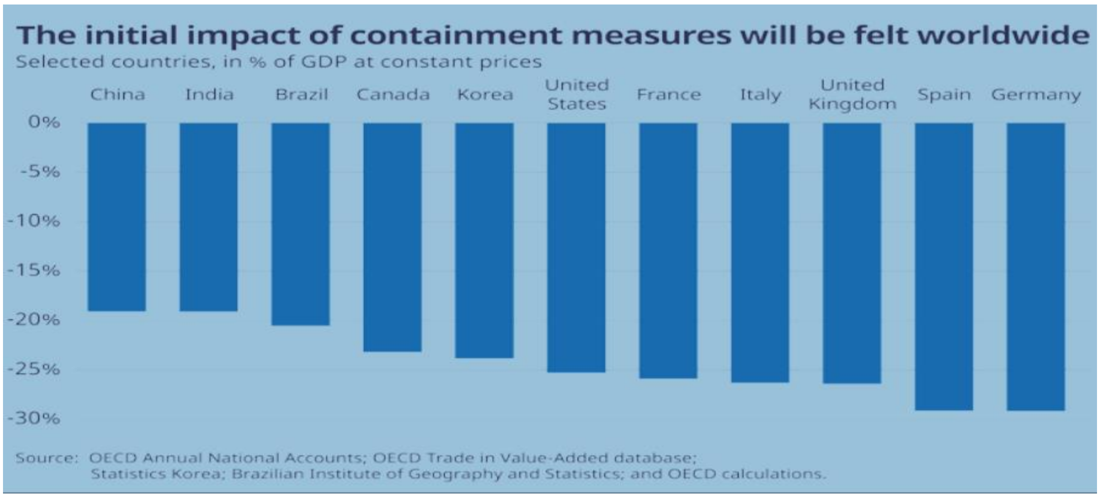
The behavioural sciences, in fact, help us to describe the mechanisms underlying the reactions of individuals, brands and governments, interpreting the present, and imagining the future scenario.

One of the aspects of fundamental importance in this new reality is the extreme importance that the behaviors of individuals assume to contain or vice versa spread the virus, and here the help of behavioral sciences can make the difference: studying human behavior, with all its cognitive bias and sometimes irrational reactions becomes a variable to be studied as an economic or epidemiological parameter.

This pandemic phenomenon has involved the entire world population, causing a very high number of sick and dead people in the world. This event is characterized by unpredictability (since there have been no previous signs that have made the expansion of the phenomenon predictable), extreme relevance (since an event such as this has influenced and changed "normality") and plausibility (since there is a tendency to rationalize this event through explanations aimed at making this phenomenon plausible).

This pandemic has, as mentioned above, disoriented individuals, companies and governments, conditioning the habits of the entire planet. This has had considerable repercussions above all on the financial level. In fact, stock exchanges all over the world with their indices such as the FTSE, the Dow Jones Industrial Average and the Nikkei have recorded the biggest falls ever recorded since 1987.

Many economies are falling into a recession like no other and the following is a graphic representation of the impact of the lockdown on the economies of individual countries with double-digit GDP falls:



Source: Covid-19 "The Brand and People", April 2020, Ogilvy.

As uncertainty and the new crisis take hold, behavioral sciences become an important means to better understand the current situation and identify effective solutions that allow to analyze and understand the irrational, apparently meaningless choices of individuals, changing, when appropriate, their behavior using nudge techniques.

All this has therefore pushed us to reprogram our behavioural models to face the crisis we are experiencing, adapting to a new "normality".

In chapter 1 we addressed the theme of cognitive bias that characterize the irrational choices of the individual, choices that are processed by systems 1 and 2 of our brain. The panorama created by COVID-19 means that system 1, and therefore the most irrational and primitive system of the human brain, can take over when certain choices are made: in this moment probably emotions such as anxiety, fear, uncertainty of the present take over generating non-rational decisions.

Analyzing certain behaviors that occurred during this phase it was possible to trace them back to the various cognitive bias.

Among the cognitive errors committed we find the Overconfidence bias. This error causes individuals to underestimate the risks resulting from their actions due to excessive security, for example when quarantine is violated. Other bias that have emerged are:

- The illusion of validity: due to an increasing tendency to rely on sources that are inexperienced but at the same time charismatic, famous or important for certain categories of individuals;
- The Bandwagon effect: this error occurs when individuals perform certain actions only because they are taken by the majority of the population, such as the purchase of masks even when not recommended;
- The Zero-risk Bias: this bias has led people to literally empty supermarkets because of a distorted perception of danger that at least apparently seems impossible to control; it may seem strange but entire shelves of toilet paper have been emptied. This is because we are accustomed to having control of the situation and the solution of a problem, even if it is a small problem that is like stock management at home, gives us a pleasant feeling of security.

- The Scarcity Bias: this cognitive error causes individuals to have a distorted view of a product's value, so much so that a health product like the amuchina during the lockdown period has reached exorbitant prices. In the consumer's mind psychological elements play a fundamental role in this process.
- Information Bias: Due to high uncertainty in the near future, during the quarantine period, people were looking for answers about a large amount of information sources, as one of our greatest fears is the unknown. An excessive amount of information, often not all of it authentic, leads the consumer to make behavioural mistakes, confusing him/her.

In the face of these irrational behaviours, we see how brands have exploited and can make the most of this particular condition of crisis and fear, turning the critical issues of the moment into opportunities to be seized. Nudges have therefore been used immediately in communication contexts.

As already mentioned in the previous chapters, depending on how a sentence is presented in the eyes of the consumer, the perception of it may vary even though the meaning is always the same. For example:

(i) Since the entry into force of the obligation to remain locked indoors, the police forces have had to carry out approximately 210,000 checks.

(ii) since the entry into force of the obligation to remain indoors, more than 95% of the persons checked were behaving correctly.

The meaning of the two scenarios, as already mentioned, is exactly the same, but the perception of communication is exactly the opposite.

It is the task of communication, through nudges, to guide the behaviour of individuals in the right direction, helping to frame the contexts of action in a more rational and logical way.

Behavioural sciences are the instrument capable of accompanying people's decisions through the exploitation of techniques easily applicable to the cognitive bias described above. Before enunciating and explaining these techniques, it is important to underline how, as a whole, they can be grouped under 3 macro-objectives:

1. PROSPECTIVE: techniques based on "perspective talking" help individuals to have a correct perspective before making decisions. In order to have such a perspective, however, it is necessary to have a different perspective from the traditional, classical one, which is adopted automatically. It is necessary to frame and analyze the current situation but with a futuristic vision, contextualizing the information of the present towards a long view perspective;
2. CONSCIOUSNESS: in the current scenario, due to too much unreliable information and data and fake news circulating on the web, the objective and real vision of people can be compromised. The techniques and tools that work on awareness, aim to guide people's attention only on the really relevant information;
3. VALUES: This macro-objective, unlike the two previous ones that worked on decision making, aims to allow individuals to make valuable choices. Understanding the real reason behind a choice strengthens decisions by raising their awareness.

It is precisely on the basis of these three objectives that brands should implement their communication strategy, taking on the tone of leaders, since in times of loss and total uncertainty people are looking for leaders who can reassure them and accompany them along this long path, becoming their reference figures.

These three macro-objectives (perspective-awareness-value) allow brands to work on tangible objectives through the implementation of nudges. Specifically, the nudge techniques on which they work are:

- Framing: framing is nothing but the context in which the information is presented, therefore, as previously seen, brands or entities in general can reformulate the information by changing the context in which it is inserted. For example, say that a number X of individuals has violated the quarantine or that a number Y has respected it.
- Hyperbolic discount: It consists in moving an expense or a commitment forward in time rather than doing everything at the same time for fear that this action cannot be done in the future. Consequence of such action will be a decrease in the cost perceived by people (in a hyperbolic way).
- Tracking: This nudge technique clarifies what is correct and what is wrong to do, so that overconfidence bias is eradicated and people are more aware of the actions taken.

- Salience: To make the information more memorable and salient, use real numbers, real behaviors. If you are reporting data, highlight quantities and relationships with appropriately designed graphs.
- Information Feedback: To make this nudge technique effective, it is necessary to present detailed and sometimes immediate and continuous information to consumers, through concrete examples, in order to better contextualize what is happening.
- Social Proofing: This technique is important to activate value-oriented behaviour. To do this, it is necessary to show consumers, through influencers, models and reference persons, what are the right behaviours or information to implement.
- Reciprocity: This is an excellent tool to activate common behaviors because when someone performs certain actions towards us, we feel the need to reciprocate such action. That's how we can achieve correct mass behaviors in the long term.
- Consistency: Individuals often tend to behave in a way that is consistent with the idea of themselves. Through this nudge technique, showing how the behavior of most individuals has changed, the rest will tend to detach themselves from the previous view by conforming to the mass view.

In particular, for brands that deal with Food, Luxury and Fashion, it could be useful to make the consumer re-emerge medium-long term prospects that seem to be forgotten today, as they focus on a rather limited vision in time, stimulating, for example, the comparison on issues other than the covid emergency such as commitment to the environment, sustainability, made in Italy.

On the other hand, for brands that deal with services such as travel and tourism, it could be useful to include among the options to choose some that provide a way out to respect the fears and anxieties that people in this particular historical moment are experiencing.

This obviously without particular constraints and pressures, because we remember that the push must be gentle and must always contemplate and respect the free will of individuals. Therefore, it will not be appropriate to push or pressure with insistence towards the purchase of a certain product, making one feel the urgency to return to pre-covid consumption.

In the context of the emergency, we have witnessed irrational behaviours, dictated by anxiety and fear, which have seen consumers spend very high amounts of money on the purchase of products considered at that time as saving (sanitizing gel and masks).

The brand's task is to re-establish a glimmer of rationality in the mind and in human behaviour, moving from fear to values, finding a reason for our choices and a meaning for our actions.

Therefore, in order to take advantage of the opportunities that this health emergency scenario can offer, we need to start from the understanding of the new needs of the consumer (first step) in order to orient a new offer by identifying the areas of intervention for brands (second step).

At this point it is possible to insert nudges by designing the user's experience around the chosen strategies, applying them in multiple ways and contexts, starting from advertising to identify digital experiences, proposed with attractive multimedia content (third step).

Finally, we have the testing activity (fourth step), which sets in motion a process of validation of the results achieved by analyzing them in order to eventually implement the appropriate corrective measures (fifth step), thus identifying areas of continuous improvement.

In conclusion, it is important to underline once again the importance of nudges, especially in scenarios of imminent change and uncertainty.

The COVID-19 has undoubtedly altered our normality by modifying our more consolidated habits, those of brands and the world economic system, but through the implementation of the above mentioned techniques, situations of uncertainty and fear can turn into opportunities.

In this regard Gideon Lichfield, an expert and economic-technological journalist said:

"To stop coronavirus we will need to radically change almost everything we do: how we work, exercise, socialize, shop, manage our health, educate our kids, take care of

family members. We all want things to go back to normal quickly. But what most of us have probably not yet realized — yet will soon — is that things won't go back to normal after a few weeks, or even a few months. Some things never will."

CHAPTER 4

The purpose of this concluding chapter is to analyze the opinion that the consumer has when faced with different nudge strategies, while also examining the effect that these latter strategies have on consumers themselves.

The effectiveness of these nudge techniques have certainly already been demonstrated in the past but what is interesting to test is how the consumer considers them and specifically to understand whether individuals are more influenced by these new methods than traditional ones.

The purpose of this paper is to confirm or refute the statement that consumers are positively influenced by social marketing communication using nudge techniques. To do this, an empirical analysis was carried out based on the involvement of a heterogeneous group of 255 people, who were given a questionnaire aimed at understanding their attitude towards certain campaigns that adopt two different scenarios: one that uses descriptive techniques aimed at conveying the message of doing or not doing something, the other that instead employs certain nudge strategies within its communications.

The results have been processed with the statistical software SPSS. In the following we will provide a quantitative analysis of the results obtained, from which we will draw some conclusions.

4. 1 METHODOLOGY:

The questionnaire was administered to a heterogeneous sample of people, randomly identified, aged between 18 and 72 years, with different socio-cultural background in order to be as representative as possible as it aims to represent all categories of consumers.

As a strong point of the chosen method there is the circumstance that the questionnaire is filled in individually and there is no tendency to be influenced by other people's choices (group thought /groupthink).

In fact, the recipients are free to choose the alternative they prefer because the purpose is only to investigate their attitude and their attitude to nudge techniques without leading them specifically to obtain a specific result.

Therefore, 4 macro-themes have been created, for each of which two scenarios have been identified: a purely descriptive one that indicates the behavior to be adopted without the use of "gentle pushes" and one that uses nudge techniques. To introduce the questions related to each scenario there is an image representing the theme proposed to the actors of the questionnaire. Referring to this image, they are asked to indicate (using a likert scale from 1 to 7) how much they agree or disagree with the statements of the questionnaire itself.

The macro-themes declined in the nudge strategy are shown in the following table:

THEME	SCENARIO NON NUDGING	SCENARIO NUDGING
Health promotion by encouraging the use of stairs.	Ex. Sign displayed near some escalators in subway stations.	Ex. "piano" stairs that emit the same sounds as the musical instrument, located near subway stations (such as in Odenplan in Stockholm).
Promotion of environmental sustainability through the	Ex. sign placed in stations, bus stops, airports and public places: "Do not	Ex. Ashtrays and bins located near stations, bus stops, airports and

adoption of Green behaviors	throw cigarette butts or garbage of any kind on the ground, respect the environment and those around you.	public places with overlaying questions in common interest such as: politics, university preparation, environmental issues, etc..
Bait Effect : Proposed biennial subscription of a magazine.	Formerly a subscription to a hypothetical magazine, for which there are 3 possible options to choose from (control group)	Ex. subscription to a hypothetical journal for which there are 2 possible options to choose from (experimental group)
Promotion of personal hygiene in public places.	Ex. To encourage the hand washing of doctors and patients, in the hospital, there is a sign to promote hygiene that reads as follows: "Prevent infection with proper hand hygiene".	Ex. Always hospital environment but this time, instead of the sign there are footprints and hands that lead to an amuchina dispenser.

Within the questionnaire, after the 4 macro-themes with the illustration for each of them of the two different scenarios, a video was administered through which we wanted to investigate the effectiveness of the technique called social proofing, i.e. the influence that social dynamics can have on the adoption of a certain behavior by an individual.

The video chosen was a canvas on Facebook created by Levissima brand addressed to its users, the so-called #everydayclimbers, that is those who never give up and pursue their daily challenge, small or large, and specifically shows a person jogging in a park populated by other people who are performing the same sport.

The message that we want to convey through this campaign from the slogan "competition can turn into fuel" is that the behavior of other people can be fundamental for the individual to influence his or her behavior and choices.
Therefore, on the basis of the above mentioned video some questions have been designed to understand and test the attitude and effectiveness that social proofing has on the end user.

The questionnaire was carried out respecting the anonymity of the people who were asked to indicate in a generic way some information such as age, gender, profession and past knowledge about the use of nudges in social marketing communication.

The test was conveyed through social media such as whatsapp, instagram and Facebook, forwarding the link that the parent platform of the questionnaire generated. The computer platform used to create the questionnaire is Qualtrics, while the data analysis was carried out through the SPSS software.

Through the latter software, an analysis, mainly descriptive, was carried out both of the sample (and of the scenarios forming part of the questionnaire. Through a sentiment analysis, then, we tried to understand and highlight the effects of nudging techniques on respondents and their subsequent feelings and emotions, concluding with the consequent analysis of their behavior.

4.2 LIMITS AND CRITICISMS OF THE METHODOLOGY:

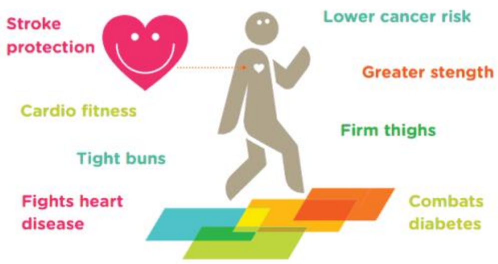
Although the chosen group is heterogeneous in its case it is clear that the results cannot be used to represent the vision and behavior of all individuals. Similarly, with regard to the choice of the nudges used in the various scenarios, restrictions are found in their use because a questionnaire cannot adequately represent those nudges that are based on odours, physical and tactile perceptions.

Another limitation to highlight is that those who responded to the questionnaire are faced with an artificial context created ad hoc to test their perceptions, and therefore the experiment can not exactly replicate the attitudes and emotions that may arise in the face of an authentic and real situation of nudge and consequently the study simply aims to understand and grasp the opinions and feelings that consumers face.

Now, before analyzing the data that emerged from the study carried out, let's see how the above questionnaire was structured, reporting below what was submitted to our sample:

Macrotheme 1: Nudge and Fun

SCENARIO 1



Let's imagine that this sign is placed near some escalators in subway stations whose aim is to encourage the use of stairs.

Referring to the image seen above, on a scale from 1 (totally disagree) to 7 (totally agree) indicates how much you agree with the following statements:

1. After seeing the image, I will use stairs rather than escalators;
2. Going up the stairs arouses positive feelings in me;
3. This image doesn't arouse any change in me;
4. I consider this communication strategy to be effective so that I can take the stairs rather than the escalators.

SCENARIO 2

Imagine piano scales, which emit exactly the same sounds as the musical instrument, like the ones in Stockholm's Odenplan metro station designed to encourage physical activity!

Referring to the image seen above, on a scale from 1 (totally disagree) to 7 (totally agree) indicates how much you agree with the following statements:

1. After seeing the image I am more inclined to use stairs rather than escalators;
2. Climbing such stairs arouses positive feelings in me;
3. I would take escalators regardless of the type of stairs;

4. I find this communication strategy effective so that I can take stairs rather than escalators.

Macrotheme 2: Nudge and environmental sustainability

SCENARIO 1

E.g. sign placed in stations, bus stops, airports and public places: "Do not throw cigarette butts or garbage of any kind on the ground, respect the environment and those around you.”.

Referring to the image seen above, on a scale from 1 (Totally disagree) to 7 (Totally agree) indicates how much you agree with the following statements:

1. After reading this sign, avoid throwing cigarette butts or litter on the floor;
2. The sign seen above particularly attracts my attention;
3. 3. Reading the sign, it arouses in me more respect for the environment and for others;

SCENARIO 2:

Ashtrays and baskets located near stations, bus stops, airports and public places with overlaying questions in common interest such as: politics, university preparation, environmental issues, etc..

In particular, you are asked to express your opinion on the question on the container (in this case "Could the government do more to deal with pollution?") by throwing the cigarette butt in the appropriate section chosen.

Referring to the image seen above, on a scale from 1 (Totally disagree) to 7 (Totally agree) indicates how much you agree with the following statements:

1. After reading this sign, avoid throwing cigarette butts or litter on the floor;
2. The image seen above particularly attracts my attention;
3. 3. Reading the sign, it arouses my curiosity and I will express my opinion by throwing the garbage in the appropriate containers;

Macrotheme 3: Bait Effect

Imagine you have to subscribe to a magazine of your interest. You have several possibilities, choose from the following options by marking the chosen alternative with an X:

SCENARIO 1: Control group:

Option 1 49 Euro → digital format

Option 2 95 Euro → paper format

Option 3 95 Euro → digital and paper format

SCENARIO 2: Experimental group:

Imagine you have to subscribe to a magazine of your interest. You have several choices, choose from the following options:

1. Option 1 49 Euro → digital format
2. Option 2 95 Euro → digital and paper format.

Macrotheme 4: Hygiene Promotion

SCENARIO 1:

Imagine you are in a hospital where proper hand hygiene is essential. To encourage the hand washing of doctors and patients there is a sign to promote hygiene that reads: "Prevent infection with proper hand hygiene".

Referring to the image above, on a scale from 1 (Totally disagree) to 7 (Totally agree) indicates how much you agree with the following statements:

1. This image facilitates the hand washing process;

2. This communication strategy goes quite unnoticed, it doesn't push me to wash my hands;

3. Seeing the previous image I have positive feelings and so I will wash my hands.

SCENARIO 2:

We are always in a hospital environment but this time, instead of the sign we find footprints and hands that lead to an amuchina dispenser.

Referring to the image above, on a scale from 1 (totally disagree) to 7 (Totally agree) indicates how much you agree with the following statements:

1. This image facilitates the hand washing process;

2. This communication strategy goes quite unnoticed, it doesn't push me to wash my hands;

3. Seeing the previous image I have positive feelings and so I will wash my hands.

MACROTHEME 5: Everyday Climbers

View this link. It's a Facebook post created by the Levissima brand in which are included some tips - that is practical and quick tips -- addressed to Levissima users: the so-called #everydayclimbers that are those who never give up and chase their daily challenge, small or big.

https://www.levissima.it/climbers/magazine/self-motivation/social-proofing-nudge/

After watching the video "You know that competition can turn into fuel" and the tips posted by Levissima on Facebook, you think that seeing other people jogging in a park (cross the number corresponding to the chosen option):

1. encourages you to run more and not to stop in front of the first obstacle (physical tiredness, boredom, etc.);
2. leaves me indifferent;
3. it has no particular effect on me, on the contrary, it demotivates me in reaching the goal.

4.3 ANALYSIS AND DISCUSSION:

The sample of 255 people is represented in its composition by 150 Males (59% of the sample) and 105 Females (41%), (See tab. n. 1). Those who participated in the survey are mostly students (159 equal to 61% of the sample), (See Tab. n. 2 and graph n. 1) from 21 to 24 years old with a percentage of 50.1%, as can be seen from the tables and graphs below:

Tab. n. 1

Sesso:

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	F	105	41,2	41,2	41,2
	M	150	58,8	58,8	100,0
	Totale	255	100,0	100,0	

Tab. n. 2

Frequenze

Statistiche

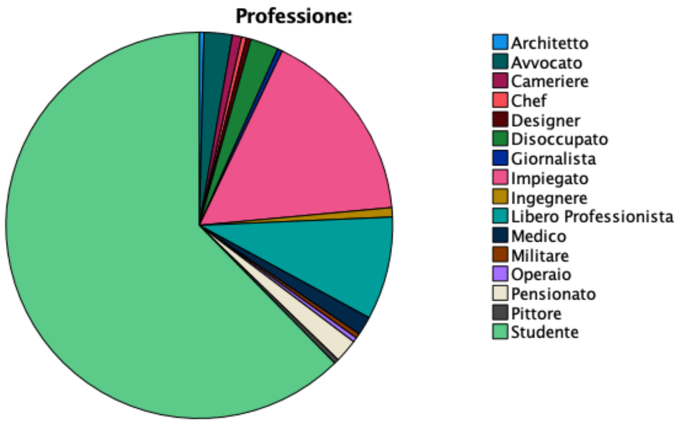
Professione:

N	Valido	255
	Mancante	0

Professione:

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	Architetto	1	,4	,4	,4
	Avvocato	6	2,4	2,4	2,7
	Cameriere	2	,8	,8	3,5
	Chef	1	,4	,4	3,9
	Designer	1	,4	,4	4,3
	Disoccupato	6	2,4	2,4	6,7
	Giornalista	1	,4	,4	7,1
	Impiegato	42	16,5	16,5	23,5
	Ingegnere	2	,8	,8	24,3
	Libero Professionista	22	8,6	8,6	32,9
	Medico	4	1,6	1,6	34,5
	Militare	1	,4	,4	34,9
	Operaio	1	,4	,4	35,3
	Pensionato	5	2,0	2,0	37,3
	Pittore	1	,4	,4	37,6
	Studente	159	62,4	62,4	100,0
	Totale	255	100,0	100,0	

Graph n. 1

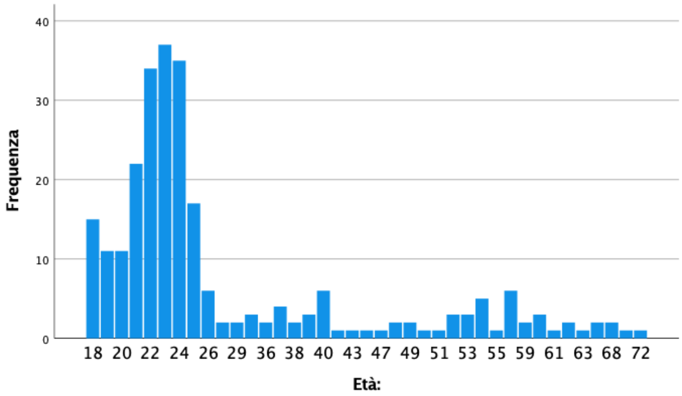


Tab. n. 3

Età:

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	18	15	5,9	5,9	5,9
	19	11	4,3	4,3	10,2
	20	11	4,3	4,3	14,5
	21	22	8,6	8,6	23,1
	22	34	13,3	13,3	36,5
	23	37	14,5	14,5	51,0
	24	35	13,7	13,7	64,7
	25	17	6,7	6,7	71,4
	26	6	2,4	2,4	73,7
	27	2	,8	,8	74,5
	29	2	,8	,8	75,3
	34	3	1,2	1,2	76,5
	36	2	,8	,8	77,3
	37	4	1,6	1,6	78,8
	38	2	,8	,8	79,6
	39	3	1,2	1,2	80,8
	40	6	2,4	2,4	83,1
	42	1	,4	,4	83,5
	43	1	,4	,4	83,9
	44	1	,4	,4	84,3
	47	1	,4	,4	84,7
	48	2	,8	,8	85,5
	49	2	,8	,8	86,3
	50	1	,4	,4	86,7
	51	1	,4	,4	87,1
	52	3	1,2	1,2	88,2
	53	3	1,2	1,2	89,4
	54	5	2,0	2,0	91,4
	55	1	,4	,4	91,8
	57	6	2,4	2,4	94,1
	59	2	,8	,8	94,9
	60	3	1,2	1,2	96,1
	61	1	,4	,4	96,5
	62	2	,8	,8	97,3
	63	1	,4	,4	97,6
	65	2	,8	,8	98,4
	68	2	,8	,8	99,2
	70	1	,4	,4	99,6
	72	1	,4	,4	100,0
	Totale	255	100,0	100,0	

Graph n.2



Still analyzing the sample, it is certainly important to know that 178 people out of 255 had no previous knowledge of nudge techniques, and this allows us to better analyze the behavior of the sample in front of the selected scenarios (See tab. n. 4 and graph n. 3).

Tab. n. 4

Conoscenza pregressa delle teorie di Nudge?

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	Si	77	30,2	30,2	30,2
	No	178	69,8	69,8	100,0
	Totale	255	100,0	100,0	

Graph n. 3

As said before, the sample is given the opportunity to express for each question a score that varies from 1 (totally disagree) to 7 (totally agree).

Turning to the actual analysis of the questionnaire, and therefore of the behavior undertaken by the sample with respect to the scenarios presented, we can say that, in the scenario concerning the theme of health promotion by encouraging the use of scales and without the presence of nudge techniques, the sample responded, for the most part, between 4 and 5 with an average of 4.56 for the first question, 4.4 for the second, 3.90 for the third and 4.64 for the fourth.

With the insertion of the nudge within the same context, it immediately stands out to the eye how the behavior of the population has changed significantly.

In fact, although the objective was exactly the same as the previous situation, and therefore that of the promotion of physical health through the use of stairs, the sample seems to be more intrigued and stimulated since the responses recorded within the questionnaire are between 5 and 6, except for a question that reads as follows: "I would take escalators regardless of the type of stairs" in this case the sample average recorded is 3.18.

This data further confirms the initial hypothesis because by altering the initial context and making the consumer's curiosity is stimulated, people's attitudes change and consequently also their emotions. Below are the results that emerged with reference to the 5 macro-themes, each of these declined in the nudge and non nudge scenario (See tab. n. 1):

Tab. n.1

Statistiche descrittive

	N	Minimo	Massimo	Media	Deviazione std.
Dopo aver visto l' immagine, utilizzerò le scale piuttosto che le scale mobili	255	1	7	4,56	1,678
Salire le scale suscita in me sensazioni positive	255	1	7	4,40	1,701
Tale immagine non suscita in me alcun cambiamento	255	1	7	3,89	1,945
Questa strategia di comunicazione la reputo efficace per far sì che possa prendere le scale piuttosto che le scale mobili	255	1	7	4,64	1,760
Dopo aver visto l' immagine sono più propenso ad utilizzare le scale piuttosto che le scale mobili	255	1	7	5,70	1,495
Salire tali scale suscita in me sensazioni positive	255	1	7	5,77	1,405
Prenderei le scale mobili a prescindere dal tipo di scale	255	1	7	3,18	1,858
Reputo questa strategia di comunicazione efficace affinché possa prendere le scale piuttosto che le scale mobili	255	1	7	5,65	1,519
Dopo aver letto tale cartello evito di buttare mozziconi di sigaretta o rifiuti per terra	255	1	7	5,57	1,622
Il cartello visto in precedenza attira particolarmente la mia attenzione	255	1	7	4,51	1,818

Leggendo l'insegna, questa suscita in me maggiore rispetto per l' ambiente e per il prossimo	255	1	7	4,89	1,826
Dopo aver letto tale insegna evito di buttare mozziconi di sigaretta o rifiuti per terra	255	1	7	6,15	1,240
L'immagine vista in precedenza attira particolarmente la mia attenzione	255	1	7	6,21	1,157
Leggendo l'insegna, questa suscita in me curiosità ed esprimerò il mio parere gettando i rifiuti negli appositi contenitori	255	1	7	6,25	1,122
Immagina di dover sottoscrivere un abbonamento di due anni ad una rivista di tuo interesse. Hai diverse possibilità, scegli tra le seguenti opzioni contrassegnando con una X l'alternativa scelta:	128	1	3	1,70	,934
Immagina di dover sottoscrivere un abbonamento di due anni ad una rivista di tuo interesse. Hai diverse possibilità di scelta, scegli tra le seguenti opzioni:	127	1	2	1,28	,449
Tale immagine facilita il processo di lavaggio delle mani	255	1	7	4,49	1,770
Questa strategia di comunicazione passa abbastanza inosservata, non spinge a lavarmi le mani	255	1	7	4,04	1,725

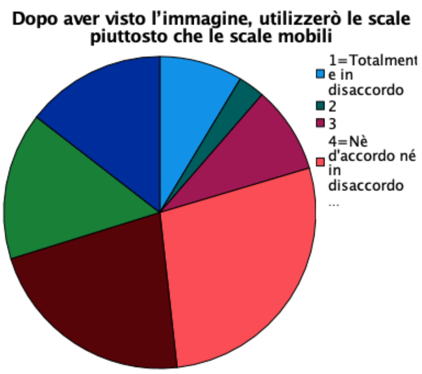
Vedendo l'immagine precedente ho sensazioni positive e quindi mi laverò le mani	255	1	7	4,64	1,571
Tale immagine facilita il processo di lavaggio delle mani	255	1	7	5,47	1,521
Questa strategia di comunicazione passa abbastanza inosservata, non spinge a lavarmi le mani	255	1	7	2,87	1,869
Vedendo l'immagine precedente ho sensazioni positive e quindi mi laverò le mani	255	1	7	5,48	1,466
Dopo aver visto il video "Lo sai che la competizione può trasformarsi in carburante" ed i relativi tips postati da Levissima su Facebook, ritieni che vedere altre persone fare jogging in un parco (crocia la il numero corrispondente all'opzione prescelta): incentiva a correre di più e a non fermarti davanti il primo ostacolo (stanchezza fisica, noia ecc):	255	1	7	5,09	1,514
mi lascia indifferente:	255	1	7	3,57	1,777
non ha su di me nessun effetto particolare anzi, mi demotiva nel raggiungimento dell' obiettivo	255	1	7	3,13	1,750
Conoscenza pregressa delle teorie di Nudge?	255	1	2	1,70	,460
Numero di casi validi (listwise)	0				

If we wanted to focus on the results obtained simply from the first question reported in both scenarios (nudge and not nudge) that reads "after seeing the image, I will use the stairs rather than escalators", we note that after seeing the sign that encourages the use of 37 respondents - ie 14% of them (See Tab. 5) - will use the same instead of escalators, while in the case of the piano stairs designed in Stockholm station 98 people totally agree with the above statement equal to 38% of the respondents which becomes 65% (See Tab. 6) if we also take into account the subjects who expressed a degree of agreement equal to 6 (therefore very high).

Tab. n 5 "Macro theme health promotion encouraging the use of the scales – Scenario 1 (not Nudge)"

Dopo aver visto l'immagine, utilizzerò le scale piuttosto che le scale mobili

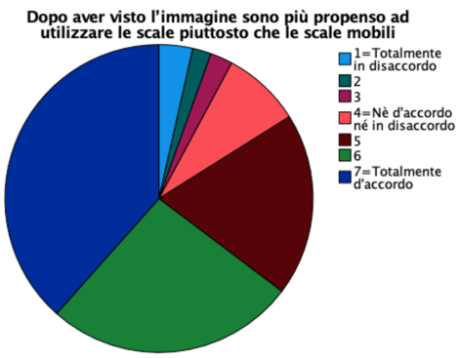
		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1=Totalmente in disaccordo	22	8,6	8,6	8,6
	2	7	2,7	2,7	11,4
	3	23	9,0	9,0	20,4
	4=Nè d'accordo né in disaccordo	71	27,8	27,8	48,2
	5	56	22,0	22,0	70,2
	6	39	15,3	15,3	85,5
	7=Totalmente d'accordo	37	14,5	14,5	100,0
	Totale	255	100,0	100,0	



Tab. n 6 "Macro health promotion theme by encouraging the use of stairs - Scenario 2 (Nudge)".

Dopo aver visto l'immagine sono più propenso ad utilizzare le scale piuttosto che le scale mobili

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1=Totalmente in disaccordo	9	3,5	3,5	3,5
	2	5	2,0	2,0	5,5
	3	6	2,4	2,4	7,8
	4=Nè d'accordo né in disaccordo	21	8,2	8,2	16,1
	5	49	19,2	19,2	35,3
	6	67	26,3	26,3	61,6
	7=Totalmente d'accordo	98	38,4	38,4	100,0
	Totale	255	100,0	100,0	



Similarly, if we dwell on the question "this communication strategy I consider effective to make it take the stairs rather than escalators", we see that in the non nudge scenario 18% of people are totally in agreement (See tab. n. 7) while in scenario 2 where we have the use of nudge the percentage rises to 37%.

If we also consider grade 6 on the likert scale then in percentage terms 64% of the people who have expressed a positive opinion about the effectiveness of the communication strategy based on nudge (see tab. n. 8).

Tab. n. 7

Questa strategia di comunicazione la reputo efficace per far sì che possa prendere le scale piuttosto che le scale mobili

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1=Totalmente in disaccordo	20	7,8	7,8	7,8
	2	17	6,7	6,7	14,5
	3	18	7,1	7,1	21,6
	4=Nè d'accordo né in disaccordo	53	20,8	20,8	42,4
	5	64	25,1	25,1	67,5
	6	37	14,5	14,5	82,0
	7=Totalmente d'accordo	46	18,0	18,0	100,0
	Totale	255	100,0	100,0	

Tab. n. 8

Reputo questa strategia di comunicazione efficace affinché possa prendere le scale piuttosto che le scale mobili

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1=Totalmente in disaccordo	8	3,1	3,1	3,1
	2	8	3,1	3,1	6,3
	3	8	3,1	3,1	9,4
	4=Nè d'accordo né in disaccordo	18	7,1	7,1	16,5
	5	51	20,0	20,0	36,5
	6	68	26,7	26,7	63,1
	7=Totalmente d'accordo	94	36,9	36,9	100,0
	Totale	255	100,0	100,0	

Also the second macro theme analyzed by the selected sample obtained similar results, highlighting even more clearly how through subliminal inputs and without any constraint people's behavior can be improved especially with regard to collective well-being.

The theme exposed in the second scenario is the promotion of environmental sustainability through the adoption of Green behaviors. The questions asked to the sample obtained a score between 4 and 5, in the case of the scenario without the presence of the nudge, ie simply subjecting the sample to the vision of the prescriptive sign that reads "Do not throw on the ground cigarette butts or waste of any kind, respect the environment and those around you.

Instead, through the adoption of a gentle push implemented by means of binders - cigarette ashtrays with overlaying questions of common interest through which you are asked to express their opinion on the question on the container (in this case "Could the government do more to deal with pollution?") by throwing the cigarette butts in the chosen section, the population has once again changed its behavior and the score assigned to the related questions is between 6 and 7.

This means that clearly the nudge technique allows the sample to engage in behaviors aimed at maximizing this collective well-being by avoiding throwing any kind of waste on the ground as they are intrigued by the "promotional campaign" and the way it is presented.

As done for macro-theme 1, we now analyze for macro-theme 2 the partial results extrapolating the results obtained from one of the questions of the questionnaire related to both scenario 1 (not nudge) and scenario 2 (nudge) (see tab. n. 9 and 10).

Tab. 9 Macrotheme 2 – Scenario 1 (Non Nudge)

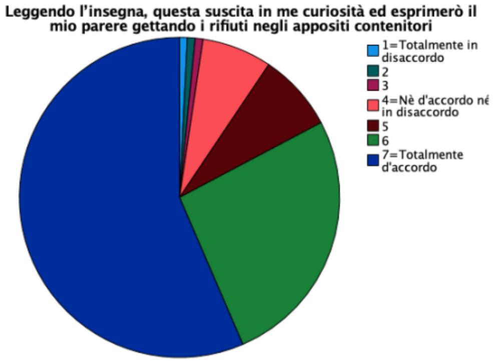
Leggendo l'insegna, questa suscita in me maggiore rispetto per l' ambiente e per il prossimo

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1=Totalmente in disaccordo	15	5,9	5,9	5,9
	2	21	8,2	8,2	14,1
	3	15	5,9	5,9	20,0
	4=Nè d'accordo né in disaccordo	49	19,2	19,2	39,2
	5	50	19,6	19,6	58,8
	6	36	14,1	14,1	72,9
	7=Totalmente d'accordo	69	27,1	27,1	100,0
	Totale	255	100,0	100,0	

Tab. n. 10 Scenario 2 – Nudge

Leggendo l'insegna, questa suscita in me curiosità ed esprimerò il mic parere gettando i rifiuti negli appositi contenitori

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1=Totalmente in disaccordo	2	,8	,8	,8
	2	2	,8	,8	1,6
	3	2	,8	,8	2,4
	4=Nè d'accordo né in disaccordo	18	7,1	7,1	9,4
	5	20	7,8	7,8	17,3
	6	67	26,3	26,3	43,5
	7=Totalmente d'accordo	144	56,5	56,5	100,0
	Totale	255	100,0	100,0	



In the third scenario we do a different experiment. Through a randomization performed on the SPSS software, the population in the sample was divided into two groups and each of them was given a different question. We see, with this experiment, if different alternatives lead the individual to make a different choice.

In the control group, that is the one with three options available, we try to eliminate option 2, that is the alternative clearly less convenient than the others, the so-called null alternative. If we were really rational individuals, the presence or absence of this option should not influence our decision in relation to the other two remaining options.

In fact, even after the elimination of the null option, the choice of the subscription should fall back on the same alternative initially chosen, without discounting the influence of external factors that in this case coincides with the deletion of an option.

Here then, in the condition of control, the hypothesis of having a paper and digital subscription for the same price as an exclusively paper one turns out to be a tempting offer. An offer that was not taken into account in the same way when, in the experimental condition, not there was an alternative that made salient how convenient it was, in fact, while in the case of the control group the sample mean was 1.70, thus moving more towards option 2, in the case of the experimental group, instead, the sample mean is 1.28 preferring option 1.

This simple example shows how in situations of uncertainty, where we do not know our preferences so well, we are subject to all external influences. For the same task, a variation in choice alternatives will be enough to "anchor" us to a different initial alternative that will lead us to a different choice.

This particular situation has been defined by Kahneman and Tvesky as "heuristics of anchoring", as already explained in previous chapters, where heuristics means a "short cut of thought" that intervenes in some decision making to save time and resources employed, but that does not always prove functional, thus leading us to make mistakes.

Tab. n. 11 Macro theme 3 – Controlling Group

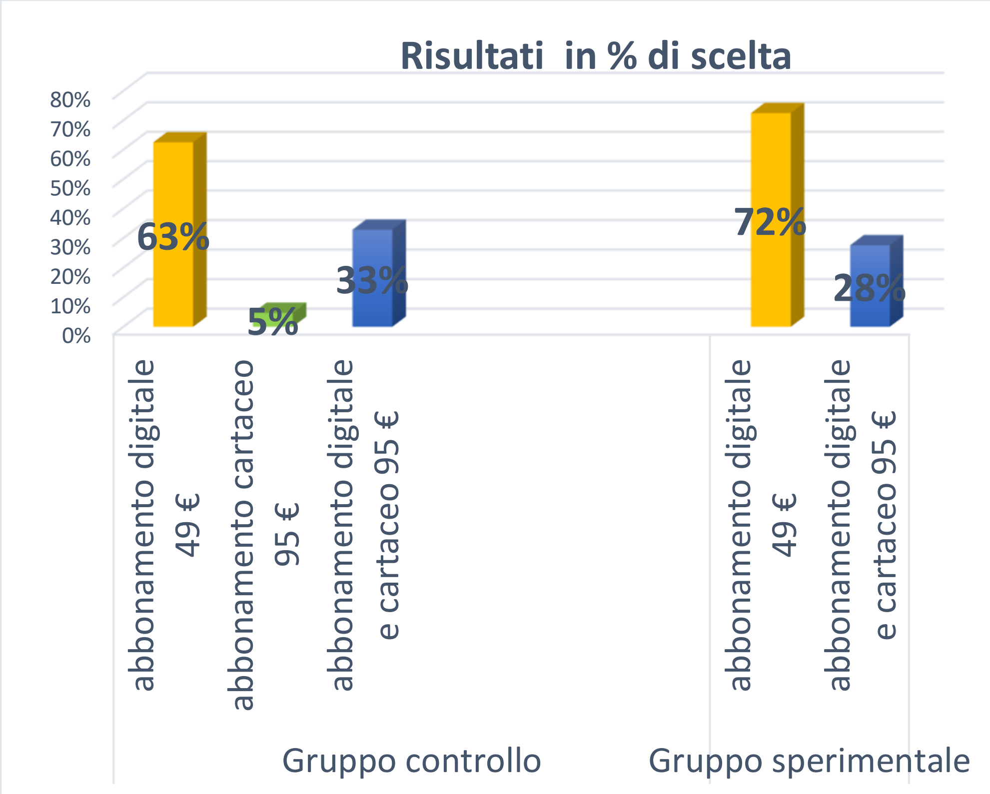
Immagina di dover sottoscrivere un abbonamento di due anni ad una rivista di tuo interesse. Hai diverse possibilità, scegli tra le seguenti opzioni contrassegnando con una X l'alternativa scelta:

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	Opzione 1 = 49 Euro, formato digitale	80	31,4	62,5	62,5
	Opzione 2 = 95 Euro, formato cartaceo	6	2,4	4,7	67,2
	Opzione 3 = 95 Euro, formato digitale e cartaceo	42	16,5	32,8	100,0
	Totale	128	50,2	100,0	
Mancante	Sistema	127	49,8		
Totale		255	100,0		

Tab. n. 12 Macro theme 3 – Sperimental group

Immagina di dover sottoscrivere un abbonamento di due anni ad una rivista di tuo interesse. Hai diverse possibilità di scelta, scegli tra le seguenti opzioni:

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	Opzione 1 = 49 Euro, formato digitale	92	36,1	72,4	72,4
	Opzione 2 = 95 Euro, formato digitale e cartaceo.	35	13,7	27,6	100,0
	Totale	127	49,8	100,0	
Mancante	Sistema	128	50,2		
Totale		255	100,0		



In the fourth and final scenario we show once again how nudge techniques are strongly persuasive and manage to change the approach and attitude of the population.

In fact, while with a traditional promotion of personal hygiene in public health facilities and hospitals, the score assigned to the questions by the sample is between 4 and 5, in the second case, promoting the same concept but with the application of nudge and thus giving space to creativity and curiosity, the value assigned has progressed to a value between 5 and 6.

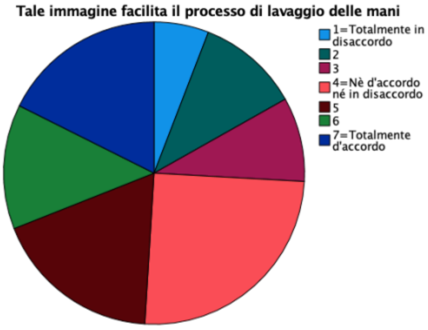
Even in this specific situation, to give more concreteness to the application of this strategy, there is a question about the feelings that the individual person feels when he or she is faced with such a situation and specifically if this type of promotional campaign goes unnoticed. The score assigned to this question is significantly low and this allows us to draw the expected conclusions.

We meet the above in terms of numbers and graphs, and in particular we see that about 30% of individuals (adding the grades 6 and 7 of the likert scale) against a prescriptive sign said that this image facilitates the process of hand washing, while said percentage rises to 56% in the scenario characterized by the inclusion of a nudge strategy that involves the representation of footprints that lead to an amuchina dispencer:

Tab. n. 13 – Macro theme 4 Scenario 1 (non nudge)

Tale immagine facilita il processo di lavaggio delle mani

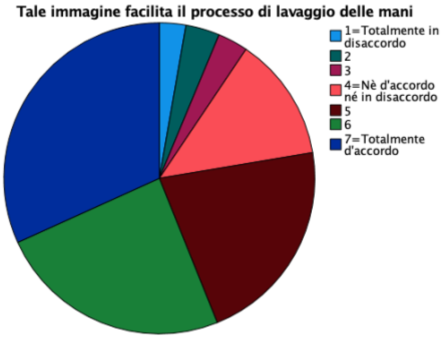
		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1=Totalmente in disaccordo	15	5,9	5,9	5,9
	2	28	11,0	11,0	16,9
	3	23	9,0	9,0	25,9
	4=Nè d'accordo né in disaccordo	64	25,1	25,1	51,0
	5	46	18,0	18,0	69,0
	6	34	13,3	13,3	82,4
	7=Totalmente d'accordo	45	17,6	17,6	100,0
	Totale	255	100,0	100,0	



Tab. n. 14 – Macro theme 4 Scenario 1 (non nudge)

Tale immagine facilita il processo di lavaggio delle mani

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1=Totalmente in disaccordo	7	2,7	2,7	2,7
	2	9	3,5	3,5	6,3
	3	8	3,1	3,1	9,4
	4=Nè d'accordo né in disaccordo	33	12,9	12,9	22,4
	5	55	21,6	21,6	43,9
	6	62	24,3	24,3	68,2
	7=Totalmente d'accordo	81	31,8	31,8	100,0
	Totale	255	100,0	100,0	

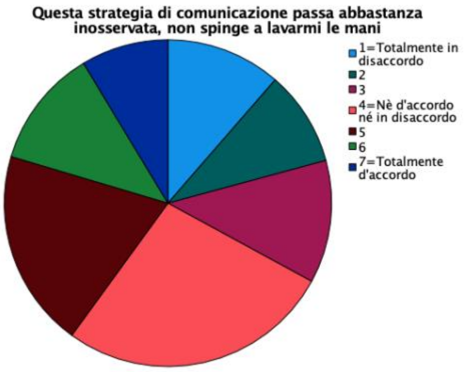


As proof of the effectiveness of the nudge strategy we see in the table below (See Tab n. 15) that the majority of the sample (51%) does not agree with the statement "this communication strategy goes quite unnoticed, it does not push to wash my hands", confirming once again the goodness of the data, that is the circumstance that the individuals have suffered a strong influence of the footprints depicted on the floor, which have pushed them more to perform the desired behavior as an objective (washing hands).

Tab. n. 15 – Macro theme 4 – scenario 2 (Nudge)

Questa strategia di comunicazione passa abbastanza inosservata, non spinge a lavarmi le mani

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1=Totalmente in disaccordo	80	31,4	31,4	31,4
	2	51	20,0	20,0	51,4
	3	45	17,6	17,6	69,0
	4=Nè d'accordo né in disaccordo	35	13,7	13,7	82,7
	5	10	3,9	3,9	86,7
	6	14	5,5	5,5	92,2
	7=Totalmente d'accordo	20	7,8	7,8	100,0
	Totale	255	100,0	100,0	



We close the study with the analysis of the results obtained with reference to the administration of the video created by the brand Levissima addressed to its users, the so-called #everydayclimbers, i.e. those who never give up and pursue their daily challenge, whether small or large, and specifically shows a person jogging in a park populated by other people who are performing the same sport.

As seen above, the message that we want to convey through this campaign from the slogan "competition can turn into fuel" is that the behavior of other people can be fundamental for the individual to influence his or her behavior and choices.

Therefore, on the basis of the above video were designed the questions in the following tables (See tables 16, 17, 18) aimed at understanding and testing the attitude and effectiveness that social proofing has on the end user.
And the effectiveness is soon demonstrated!

In fact if we consider the higher grades of the likert scale, that is very agree and totally agree (6 and 7), we notice that 44% of people see other people who are performing the same sport, have an incentive to run more and not to stop in front of the first obstacle while 27% have a neutral attitude.

The result is confirmed by the fact that individuals do not agree with the fact that this video leaves them indifferent (about 46%) while about 30% of the sample has a neutral attitude.

On the contrary, to the question "it has no particular effect on me, indeed it demotivates me in achieving the goal", about 57% of the sample does not agree with this statement (adding the results obtained with grades 1, 2 and 3 of the likert scale).

Tab. n. 16 – Macro theme 5 – Video Social Proofing

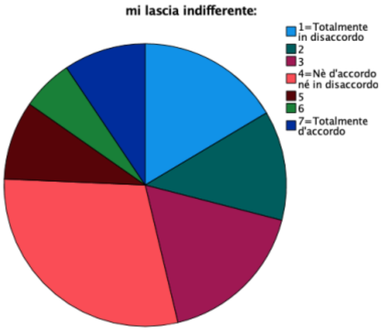
Dopo aver visto il video "Lo sai che la competizione può trasformarsi in carburante" ed i relativi tips postati da Levissima su Facebook, ritieni che vedere altre persone fare jogging in un parco (crocia la il numero corrispondente all'opzione prescelta): incentiva a correre di più e a non fermarti davanti il primo ostacolo (stanchezza fisica, noia ecc):

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1=Totalmente in disaccordo	6	2,4	2,4	2,4
	2	10	3,9	3,9	6,3
	3	12	4,7	4,7	11,0
	4=Nè d'accordo né in disaccordo	68	26,7	26,7	37,6
	5	48	18,8	18,8	56,5
	6	54	21,2	21,2	77,6
	7=Totalmente d'accordo	57	22,4	22,4	100,0
	Totale	255	100,0	100,0	

Tab. n. 17 – Macro theme 5 – Video Social Proofing

mi lascia indifferente:

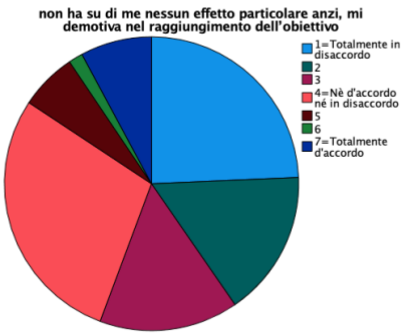
		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1=Totalmente in disaccordo	42	16,5	16,5	16,5
	2	32	12,5	12,5	29,0
	3	44	17,3	17,3	46,3
	4=Nè d'accordo né in disaccordo	75	29,4	29,4	75,7
	5	23	9,0	9,0	84,7
	6	15	5,9	5,9	90,6
	7=Totalmente d'accordo	24	9,4	9,4	100,0
	Totale	255	100,0	100,0	



Tab. n. 18 – Macro theme 5 – Video Social Proofing

non ha su di me nessun effetto particolare anzi, mi demotiva nel raggiungimento dell'obiettivo

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1=Totalmente in disaccordo	62	24,3	24,3	24,3
	2	41	16,1	16,1	40,4
	3	39	15,3	15,3	55,7
	4=Nè d'accordo né in disaccordo	73	28,6	28,6	84,3
	5	16	6,3	6,3	90,6
	6	4	1,6	1,6	92,2
	7=Totalmente d'accordo	20	7,8	7,8	100,0
	Totale	255	100,0	100,0	



4.4 CONCLUSION:

We are now at the end of this journey that began with a traditional approach aimed at first to the knowledge of nudges and their application, then trying to understand how the human mind works when it has to make choices, learning that homo economicus is not always as rational as the neoclassical theories analyzed, and that it often gets caught in the network of behavioral distortions that can occur (the so-called Bias) when it has to make a choice.

We have fathomed and analyzed the various cognitive bias and cast a light on the shadows that sometimes characterize human decision-making processes, identifying a way out that leads the individual out of the decision-making impasse and that pushes him "in a gentle way" to implement the best choice through the application of nudges. All this leaving him free to choose and play his best alternative without any constraint whatsoever.

We have tried to give greater and greater clarity to the concept of nudge by focusing and reviewing the various strategies that use it and that have been, in particular, declined both in the digital world, which increasingly characterizes our era (online advertising and related practical cases of success, such as the Levissima case, or apps for smartphones that use nudges), both in the offline world (gentle urges aimed at achieving more green behaviors in terms of environmental sustainability), up to an unusual and unpublished examination of nudges and behavioral sciences in a context of health emergency such as the one we are living with the Covid-19.

We have therefore demonstrated the pervasiveness of the nudge in various areas, up to the daily life.

But perhaps the most intriguing thing about this journey in the behavioral sciences was to answer this question: what attitude does an individual have when confronted with traditional communication techniques compared to other than the use of nudge strategies? Which are the most effective in directing the individual towards the adoption of a certain behavior?

To answer this question we moved from theory to practice by carrying out an experimental study through the adoption of an empirical approach aimed at studying how the human mind reacts when it is subjected to different stimuli: some descriptive and prescriptive and others that instead employ nudge strategies and gentle urges that lead to the adoption of certain behaviors.

So we used a questionnaire that I specifically created whose objective was to test, through simple graduated questions with the help of the likert scale, what was the reaction of the participants in front of each of the macro themes identified and analyzed developing for each of them, two scenarios (nudge and not nudge).

On the results, obtained through the administration of the above mentioned questionnaire to a heterogeneous sample of 255 people, a quantitative statistical analysis was carried out from which we obtained some qualitative implications that showed how in general communication methods using nudge strategies are more appreciated than traditional methods that ask to do or not to do something.

And the appreciation is greater every time the individual is faced with practical, fun and witty nudges that instigate their curiosity and create a link, a link between the advertising campaign and real life that you are facing every day.
It becomes crucial to include the factor "fun" in mass communication both because it is kept more in mind (in the cd. long term memory) and because it involves the individual more.

The positive impact found by people to nudge strategies is due to the fact that people normally like to have freedom of choice without any constraint and therefore it has been observed that indirect communication strategies are more accepted and shared.

However, it has also been shown that the perception that consumers have of nudge strategies are not the same, but vary according to the characteristics of the strategies themselves and consumer attitudes.

This is because there are certain nudges that are not well understood by individuals or others (such as text nudges) that have little or no impact.

Hence the need to vary, calibrate, graduate and dose the different strategies with different and continuous stimuli, as long as they are always light, a gentle push precisely, since nudge is not a universal concept, and therefore belies the classic statement "one size fits all".

This is both because there are some factors including culture and habits that make this strategy parametrable on the basis of the target audience (for example in Italy a certain strategy works, while in another country you will observe a different result), and because a different intensity of nudge (for example too high) could lead to an unwanted result.

So these new communication strategies should be continuously retouched, modified or implemented to ensure that consumers always have the curiosity that drives them towards certain choices.

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