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Nudging strategies and acceptance of Human Resource policies: The case of framing and social proof heuristic

Carolina Barco Caroço

Master's in Human Resources Development Policies

Advisor:

Doctor Nelson Campos Ramalho, Assistant Professor, ISCTE Instituto Universitário de Lisboa

June, 2022

Department of Political Economy

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Acknowledgments

First of all, I would like to express my sincere gratitude to my supervisor Professor Nelson Ramalho, for his constant availability and remarkable commitment and support, so that I could succeed throughout the process of my dissertation.

To my grandma, Maria Teresa Caroço, who unfortunately could not follow this process to its final product, but who was the main reason for starting it. The blind trust placed in me, was the reason to never lose focus, I am eternally grateful to her.

Finally, I feel extremely grateful for the unconditional love and incredible support of my family, friends, and boyfriend, who helped me get through the most stressful moments. They never gave up on me and that was what encouraged me to always do my best.

Resumo

A Economia Comportamental propõe-se ultrapassar as limitações dos modelos económicos tradicionais que pressupõem que o agente económico maximiza a função utilidade, assumindo assim um processo de decisão racional. A teoria nudge inscreve-se neste âmbito e procura oferecer mecanismos que reduzem estas decisões subótimas. Exista embora um vasto corpo teórico e um acervo de estudos empíricos em torno da sua eficácia em contextos comportamentais diversos, há escassez de estudos sobre a eficácia do nudge para favorecer a aceitação de políticas de RH. Trata-se de uma área de implementação relevante, dada a dependência do êxito dessas políticas para com a real aceitação dos agentes organizacionais e visados.

Para dar resposta a esta lacuna de investigação, o presente estudo pretende compreender até que ponto a utilização do nudge resulta numa prática eficaz o suficiente para, através de um contexto de comunicação, favorecer a aceitação de políticas de RH.

Com base numa amostra de 228 indivíduos, foi realizado um estudo quantitativo experimental 2x2x2, onde os participantes foram confrontados com dois estímulos, compostos por dois nudges diferentes (enquadramento e heurística da prova social) e com direções de influência favorável vs. desfavorável. Os resultados mostram que o nudge enquadramento *per se* não produz resultados, mas em associação à heurística de prova social, leva a um aumento da aceitação das políticas de RH que se procuravam favorecer. Conclui-se assim que as estratégias de nudge não têm eficácia garantida, nem equivalente entre si, e que há um efeito cumulativo na sua ação.

Palavras-chave: Nudge, Políticas de RH, Economia Comportamental, Enquadramento, Heurística da Prova Social

JEL Codes: D91, M12

Abstract

Behavioral Economics aims to overcome the limitations of traditional Economic models that assume that the economic agent maximizes the utility function, thus prescribing a rational decision process. The nudge theory falls within this scope and seeks to offer mechanisms that reduce these suboptimal decisions. Despite the existence of a substantial body of theory as well as empirical studies around its effectiveness in different behavioral contexts, there is a shortage of studies on the effectiveness of nudging in favoring the acceptance of HR policies. This is a relevant area of implementation, given the dependence of the effectiveness of such policies on the actual acceptance by organizational actors and those targeted.

To address this research gap, the present study aims to understand to what extent nudging results in an effective practice and sufficient condition, through a communication context, to foster the acceptance of human resource policies.

Based on a sample of 228 individuals, a 2x2x2 experimental quantitative study was conducted, where participants were confronted with two stimuli, consisting of two different nudges (framing and social proof heuristics) and with favorable vs. unfavorable influence directions. The results show that framing *per se* does not produce results but that, in association with the social proof heuristic, it leads to increased acceptance of the HR policies that were sought to be favored. It is thus concluded that nudge strategies are not guaranteed to be effective, nor are they equivalent to each other, and that there is a cumulative effect in their joint action.

Keywords: Nudge, HR Policies, Behavioral Economics, Framing, Social Proof Heuristic

JEL Codes: D91, M12

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CHAPTER 1

Introduction

1.1. Research Problem

Economics models offer an imprecise characterization of human behavior, since its premises mostly assume that people choose to optimize their utility without biases in their rational choice process. Acknowledging this, a branch of Economics – Behavioral Economics – has been developing to enrich the field, namely by using psychological knowledge.

Behavioral Economics establishes that, through choice architecture, cognitive biases can be used to guide behaviors. Cognitive biases may be driving many ill-decisions, but they are also an open door to influence in subtle ways by means of choice architecture. This has become to be known as nudging. Nudging gained ground in Economics, as Behavioral Economics developed, but also in many other behavioral sciences or applied social domains such as public policy, organizational compliance, and generally all citizenship behaviors.

Although nudging immediately raises the specter of unethical manipulation and astuteness as an illegitimate means to achieve ends, whatever they are, it can also protect people from their own behavioral errors that depart from the same cognitive biases. The key question is to know if free will is entirely free or if it is also conditioned by the individuals' environment? If indeed, our choice architecture is naturally built so to incorporate information from our surroundings, then, our free will is always conditioned by whoever (willingly or not) design those surroundings. Therefore, nudging, *per se*, cannot be taken as unethical. As any tool, it can be used for good or bad.

In the Human Resources Management (HRM) domain, this practice has attracted the attention of several researchers (e.g., Dash, 2020; Battaglio, 2020) but has not been much explored empirically, despite some exceptions (Grunewald et al., 2017; Esposito et al., 2017; Musarra, 2019; Mobekk et al., 2020). Thus, there is a research gap as to the actual usefulness of this practice in the HRM domain and how it can be operationalized.

1.2. Research Goals

Taking as an example the experiments of Kahneman and Tversky (1981), who confronted experimental subjects with decisions based on mathematically symmetric forms of information (but psychologically asymmetric), this study proposes to test to what extent a similar approach facilitates, the acceptance of Human Resources (RH) policies or practices, when one needs to solve organizational problems. The two ways of applying nudge chosen for this test are framing and social proof heuristic.

Based on this assumption, the motivating question of this research is: How effectively, can one define a communication context (nudge) that favors the acceptance of HR policies? Will concomitant nudge strategies, namely framing and social proof heuristic, produce cumulative effects?

In short, we intend to explore to what extent the way a certain proposition is worded, through positive or negative framing, can influence the level of agreement, or not, with that proposition, under the condition that nudge must be subtle enough so that the subjects do not feel their freedom of choice threatened.

1.3. Structure

To achieve this purpose, this dissertation comprises six chapters. This introduction presents the problem that motivates this study, the questions that offer a research direction, namely in terms of theoretical and empirical objectives, and its structure. The next chapter, which concerns the literature review, will offer an overview on the policies and practices that make up HRM, with an articulation between its nature and the cognitive biases that can interfere on its acceptance/application process. The main concepts will also be defined, and the Nudge theory will be identified and explained. Then, some examples of the use of nudge in the HRM domain will be given. Chapter three further refines the empirical research by stating the method as well as data collection and analysis while chapter four will analyze the results. Finally, chapter five will discuss and conclude.

CHAPTER 2

Literature Review

2.1. Human Resources Management Policies

Although satisfaction at work is a critical and dynamic factor that varies from person to person and within the same person from time to time (Andrade et al., 2011), there are organizational policies that, by being oriented towards employees and their needs, can overcome possible sources of uneasiness, and contribute to maximize aspects such as motivation, productivity, physical, psychological, and social well-being. These policies belong to the HRM system structure that comprises HR principles, policies, and practices among others (Arthur & Boyle, 2007). According to these authors, HR principles are the guiding values, beliefs, and norms conducive to achieve HR and organizational objectives, which translate into HR policies, seen as "organizational goals or objectives for managing human resources" (p.79). These policies ultimately produce HR practices, i.e., they help choosing the practices pertaining to HR functional domains, e.g., which staffing, training, compensation, or performance appraisal to deploy (Kepes & Delery, 2006). According to CIPD (2022) HR policies can be organized as regards the temporal focus, i.e., at early employment stage (e.g., induction policies), during employment (e.g., rewards policies, health, safety and well-being policies, employment relations policies, learning and development policies, among others) or at the ending of employment policies (e.g., termination modes).

Thus, HR policies are the driver of the HR practices. HR practices are understood as the actions taken to improve the performance of the organization, attracting, and retaining people with the most appropriate skills to its objectives (Sousa et al., 2006). As a result, these practices change behaviors, improve skills, increase performance, and provide the means to develop objectives and achieve goals. Consequently, they are intended to reduce deviant, counterproductive behavior, absenteeism, presenteeism, and general malaise.

To better understand some of these practices and policies – Recruitment and Selection, Training, Performance Appraisal, Career Management and Compensation and Benefits – and how much they are permeable to subjectivity biases, this study will now present their main characteristics and contributions.

2.1.1. Recruitment and Selection

Recruitment and selection refer to all the HRM procedures and methods that aim to ensure that an organization has the talented people it needs, to perform a particular function (Armstrong & Taylor, 2020). But first, it is essential to mention that while recruitment is seen as attracting potential

candidates, selection includes the whole process, from the moment in which the presumed candidates are called to the decision of admission (Ribeiro, 2007). This is one of the main targets for HRM policies which is understandable since the quality of organizational management depends on the quality of people who are attracted and selected (Cunha et al., 2010).

Recruitment and selection policies concern preferences given to alternative priorities in designing and executing this function. Organizations must decide whether the recruitment process envisages internal applicants (i.e., looking for new job opportunities at their current company), external (i.e., searching for new employment possibility at an external company), or both (Ployhart et al., 2017).

In recruitment, the sources used in the search and engagement that the organization needs, can also be distinguished according to their internal or external nature, and should be adapted depending on the function that is intended to occupy. The effectiveness of the candidate attraction process involves fairness and empathy in constructing the requirements, so the following steps should be considered during this stage: analyze the strengths and weaknesses of the organization as an employer; develop the employer brand and employee value proposition; analyze the requirement; consider how the requirement should be satisfied (Armstrong & Taylor, 2020). In Selection, it is necessary to decide who should be involved in judging the suitability of candidates and what techniques should be used to assess their potential. Thus, and through selection methods and techniques, it is possible to elect the candidates most closely related to the desired profile by the organization. All these processes should consider criteria that ensure the fairness of the procedures and the ethics of the recruitment and selection processes (Ferreira, 2013).

There are sets of best practices such as those listed by Marchington et al. (2020) but these authors warn that knowing the best techniques is as important as becoming aware of one's own limitations.

There are several factors related to the recruitment process that determine the extent to which candidates are attracted – recruitment sources, recruiters, job-related attributes, management practices – and these can be influenced by cognitive bias that determine the effectiveness of the whole process (Whysall, 2018). A well-known bias that affects selection is the halo effect, this is defined as a tendency to judge, and leads decision-makers to assume unrelated and unknown characteristics as being consistent with those they know, whether these are good or bad (Forgas & Laham, 2016). So, these practices, albeit critical for HRM, are open to individual biases that depend on how each player accepts or approaches them.

2.1.2. Training

According to Cunha et al. (2010), training is a process, formal or informal, planned or not, which aims to develop new knowledge, skills, attitudes, and behaviors relevant to the performance of a given

activity. It assumes a central role in the development of organizations and the people who are part of them, since it introduces changes at the cognitive and behavioral level, enhancing the performance of employees and, consequently, adding value to the organization.

Professional training is recognized as a complex process, which involves a type of learning that simultaneously develops personal, social, and professional characteristics (Cardim, 2009). This provides a set of technical learning specific to each work context, which, according to Cunha et al. (2010), we can place within four areas of intervention (of training) at the professional level: the transmission of information, the change of attitudes towards work, the development of work skills, and the development of concepts.

Training is now considered a strategic investment and no longer a cost, since it contributes to the sustained performance of the organization, but the pervasive fear of change, poses challenges for both the design of training programs and the delivery of training (Stone et al., 2007).

Over the years, training and development in organizations has undergone major changes, both scientifically and practically. As the nature of work has adapted to new market demands, the objectives of training have progressed toward an approach that looks at more than improving employee skills, it has become a way to improve the effectiveness of teams and increase the competitiveness of organizations (Noe et al., 2014). There have been strong trends, such as the new emergence of theoretical research on training, the increased consideration of the role of internship and training, the evaluation on learning that occurs outside the classroom context (technology allows learning to take place anywhere, anytime), and the understanding of the impact of training, occurring at different stages of analysis. Alongside these critical trends, there have been advances, particularly on issues related to training criteria, trainee attributes, training design and delivery, and the training context (Bell et al., 2017).

One of the key issues in training pertains to the training transfer, which refers to how extensively employees transpose their learnings from training into their daily job (Park, 2007). Among the many factors that facilitate or deter such purpose, lies the support given by supervisors, which depends how much they value the training (Holton & Baldwin, 2003). This means that alongside the practices that offer a high-quality training effectiveness is the sheer acceptance of such training as being relevant for the job. Once again, an individual biased perception can condition the effectiveness of this other HR practice.

2.1.3. Performance Appraisal

According to Fernandes and Caetano (2007), it is possible to define performance appraisal as a process through which an assessment is made about the performance of employees while doing their duties.

This is a practice that is increasingly emerging to improve effectiveness and efficiency, contributing with productivity to increase the levels of competitiveness that allow sustained growth generating employment, wealth, and quality of life (Seixo, 2007).

Although the nature of performance appraisal, within an organizational context, has an informal character, occurring in a constant and systematic way, all organizations benefit – or should benefit – from a more formal (cyclical) system of performance appraisal that evaluates and assesses all the work developed by employees, considering not only the result, but also the procedures that designed its achievement (Fernandes & Caetano, 2007).

Because the agents of performance appraisal are individuals, and such activity entails judgment, there have been identified several biases that turns performance appraisal into a subjective exercise (Lunenburg, 2012) which is not surprising at all given it is an activity that is sensitive to its social context (Levy & Williams, 2004) which means how performance appraisal policies are conceived and communicated will most likely affect its vulnerability to subjectivity.

Both performance appraisal and the performance management process have been topics of interest to researchers. According to DeNisi and Murphy (2017), although related, these topics are differentiated in that performance appraisal refers to a formal process that is based on a set of dimensions and results in the assignment of a rating that will serve as the basis for a variety of decisions regarding the employee. Performance management refers to the activities, policies, procedures, and interventions designed to help employers improve their performance. These include aspects such as feedback, goal setting and reward systems. Thus, according to the same authors, it is a process that begins with performance appraisal and then aims to improve individual performance against the strategic goals of the organization.

The evaluation can be carried out using different evaluators, and it is up to each appraiser, according to the hierarchical position held and the function performed, to assess the aspects that they observe best. The following sources are identified as being used: the direct supervisor, the HR department technician, colleagues, subordinates, self-assessment, customers, and the 360º feedback – which combines the participation of several assessors (Bernardin & Wiatrowski, 2013). Regarding performance appraisal methods, these can be directed to behavior – portraying the strengths and weaknesses of the employee, his or her potential and suggestions for improvement – or to business performance – defining strategic objectives (Armstrong & Taylor, 2020).

This dimension of HRM is recognized, since Douglas McGregor or Frederick Herzberg, as an important motivational factor (Cunha et al., 2010). However, it is important that employees understand the contribution they have to the success of the organization, aligning their actions with the organizational strategies (Fletcher, 2001).

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2.1.4. Career Management

Defining the term Professional Career has proven to be a matter of controversy among some authors, partly due to the changes that have occurred in recent years – globalization, organization restructuring, technological change, government policies, societal developments, and cultural norms – since they have contributed to increase a more fluid relationship between the individual and the work (Gunz et al., 2020). In this study, we draw on a definition by Greenhaus et al. (2018), which characterizes Career Management as a set of activities undertaken by a person to pursue and direct their career path by developing, implementing, and monitoring career goals and strategies.

According to Baruch (2022), careers are very important not only because they enable people to be contributing and integral members of society, but because they represent a source of identity and satisfaction. It is a facet of an individual's life that goes beyond the professional barrier and contributes to making dreams come true, leaving a legacy, inspiring others, and creating relationships, which is why it is so important to manage them in the best way possible.

Developing and planning careers is about assessing, aligning, and reconciling needs, opportunities, and changes, using various approaches and methodologies, occurring at both the organizational and individual levels (De Vos et al., 2008). It involves following and organizing the evolution of workers in the hierarchical structure of the company and is a procedure that aims to motivate and retain the best talents, which can be made easier through a well-defined performance analysis (Sousa et al., 2006). According to Kaye and Giulioni (2015), we can also note that the quality of career development depends largely on the ability to communicate, through an ongoing and informal basis, between subordinates and managers, about the various aspects of their careers.

Career management is a complex field and its evolution into a broader concept has proven to be one of the most important challenges for the HR function in organizations (De Vos & Cambré, 2017). In this sense, also the theoretical research that initially focused on the guidelines to be provided to companies, on the design of effective succession strategies, have started to prioritize practices that can serve as support to workers, in the achievement of their career goals (Bagdadli & Gianecchini, 2019). As mentioned, these practices include a variety of programs and interventions, designed to achieve business goals, while at the same time workers can meet their personal needs and aspirations (Doyle, 2000). Even though, as Clarke (2013) has shown, workers take responsibility for their career, companies continue to support their professional development through career management actions.

Although career management depends on the influence of many external factors, it is also important to consider the individuals' physical movements, psychological transitions – namely between levels, jobs, employers, occupations, and industries – but also their interpretation and perception of events, alternatives, and career outcomes (Sullivan & Baruch, 2009). This practice has been mostly based on wrong assumptions about the rationality of the career choice process (Krieshok

et al., 2009). Recently, Lent and Brown (2020) explore how much decisional heuristics permeate the career choice models to highlight it mostly as a process where individuals are prone to guide themselves not by rational choices but rather by bounded rational processes resourcing, e.g., to the availability heuristic. Taking this example, when choosing to adopt a certain occupation or making a career movement, individuals may easily recall the latest occupations they have been into contact due to a recency effect.

2.1.5. Compensation and Benefits

The employment relationship is composed of two elements, the employee, and the employer, in which the first one exchanges the desired effort for the compensation that the second one offers. Compensation and benefits systems focus on the elements that make up this exchange and shape both the relationship between the company and the employee, and the overall composition of the workforce, through actions that motivate employee attraction and decision making (Fulmer & Li, 2022).

According to Camara (2011) rewards are a component of compensation that has as its main objective to meet the social needs of employees. It is important to mention that rewards can be not only in the form of money – extrinsic rewards – but also as intrinsic rewards, oriented to aspects such as professional recognition, prestige, and challenging and motivating work (Murayama, 2022). The specific form of the rewards should reflect the business strategies and talent attraction/retention strategies (Werner & Balkin 2021).

Considering that compensation and benefits systems can be a source of motivation, as long as managed with this purpose, it is essential to ensure an appropriate, fair and balanced reward management – since the comparison between the performance achieved and the reward received is inevitable -, which should be in line with the company's culture and strategy, ensuring internal, external and individual equity, in order to avoid conflicts and foster motivation among employees (Camara, 2011). Compensation and benefits are expensive practices, and for this reason can lead to the inability of companies to set competitive salaries and benefits, inhibiting their ability to hire talent and increase turnover. This management can be made easier using data analytics and artificial intelligence, combining information about salary benefits, and other HR practices, with information about attitudes and behaviors (Oswald et al. 2020).

According to Pfeffer (1998), practices related to compensation and benefits management can have a significant impact on the behavior of organizational members. However, the search for the reward is not a sufficient condition to genuinely change the attitudes and behaviors of employees. They may, rather, contribute to their temporary modification (Camara, 2011). Despite this and

recognizing that employees vary in their preferences for different combinations of pay and benefits, reward and compensation systems influence these preferences, which determines the acceptance and effectiveness of these systems within organizations.

Based on the studies conducted by Mouton and Bussin (2019), the stronger the employees company brand perception, the greater their willingness to work for lower pay and benefits. In this sense, the organization can use methods directed at the cognitive biases of employees, to promote greater engagement with the company, without the monetary counterpart via the compensation system. Additionally, as the provision of conditions that nurture a sense of equity and fairness is critical in compensation and benefits (Pascual et al., 2010), the effectiveness of this practice depends on social comparison which is, *per* definition, a subjective judgment. Therefore, any compensation and benefits policy are dependent on cognitive processes, and therefore, subjected to cognitive biases as all social judgments are (Yzerbyt, et al., 2008).

Overall, HR policies and practices are essential tools for the sustained functioning of an organization, and it is assumed that once approved and made known, a policy will exert effects, however, only if there is a social validation of this policy by those targeted (employees) (Barrena-Martínez, et al., 2017) as well as by line managers (CIPD, 2022). This social validation is based on group norms, perceptions of justice, expectations of effectiveness, and trust in the body that issued the policy (that it is competent, that it has integrity, and that it is benevolent), and that will influence the acceptance and effectiveness of several HRM processes (Stone et al., 2007). Thus, the effectiveness of such policies and practices is mostly determined by the cognitive processing of individuals implied with such practices (e.g., the HR decision maker, the HR technicians, or any of the employees affected by the policy or practice).

However, as highlighted in each of the functional domains reviewed above, there are biases in cognitive processing that can be detrimental to the organization and even to the workers themselves (Kahneman, et al., 2011). In this sense, it is important to understand how to avoid these biases or, if they are intrinsic, how to mobilize them to protect the implementation of organizational policies and help improve the quality of decisions. This is where nudging comes in (Kahneman, et al., 2011).

The worth of any HR policy is a judgment on its effectiveness. As CIPD (2022, p.1) claims: "no matter how well any policy is written, it's their effective communication and implementation, particularly by line managers, that's crucial in ensuring their effectiveness". This draws attention to some nudging techniques.

2.2. Nudge Theory

Economics models have mostly relied on assumptions about human behavior that are inaccurate. These are based on conditional optimization, i.e., the assumption that people choose to optimize, based on unbiased choices. However, since Herbert Simon's landmark work on bounded rationality (Simon, 1990) decision making theory, also in Economics, have been acknowledging such assumptions have limitations. This has been captured more recently by Richard Thaler (2015) that systematized such limitations of these assumptions, as the optimization problems that individuals face are too difficult to be solved by themselves, and the beliefs on which they rely, to decide on a wide variety of issues, are not unbiased.

In the last couple decades, the strong resistance against an enriched version of Economics, has been weakened under the aegis of the emerging Behavioral Economics (Mullainathan & Thaler, 2000) which added the disciplines of psychology, sociology, and neurology to neoclassical Economics. In this version, the main weaknesses of the Economic model were recognized: human beings do not choose rationally, and their beliefs are not always correct.

All these factors point to a new form of management: nudge, which applies knowledge from behavioral science to design the organizational context and potentiate unconscious thinking and behavior in concordance with organizational goals (Ebert & Freibichler, 2017). Nudge is described as "(...) a small feature of the environment that attracts our attention and influences behavior" (Thaler, 2015, p. 312), i.e., these are practices that aim to change and optimize behaviors, without restricting freedom of choice. Thus, through ideas from Behavioral Economics, inspired by theorization on nudge, it is possible to build human resource practices that control the architecture of choice to drive organizational mission, vision, and values.

Nudge theory was advanced by Thaler and Sunstein (2021), who introduced the concept of choice architecture, defining it as designing a context that allows people to make choices. In this domain, stimuli or nudging are introduced to allow decision-makers to significantly foster one specific type of behavior. According to the authors, acting in this way, with the aim of influencing decisions to meet goals, translates into a form of libertarian paternalism, which does not limit people now of a decision, but rather consciously tries to guide them towards improving their lifes.

As stated, nudge management is based on developments in Behavioral Economics, which in turn were inspired by the dual process theory of mind (Ebert & Freibichler, 2017). Based on Trope (1986) and Gilbert et al. (1988), Thaler and Sunstein (2021) recognize that the brain integrates two types of thinking: one intuitive, automatic, and therefore faster, called the automatic system, and the other more slow, reflective, and rational, called the reflective system. The coexistence of both types of thinking suggests that even though common sense (related to the automatic system) is useful in

making many decisions, there is a high probability that it can give rise to systematic errors, given the lack of consideration that occurs at such moments. Also, decision making is easily hindered by time pressure and limits to cognitive capacity (Shiv & Fedorikhin, 1999).

The theory that common sense is not always an effective tool for decision making was first developed by the psychologists Tversky and Kahneman (1974), who identified three heuristics that can be considered as common-sense rules, because people rely daily on different judgment heuristics that result in faster decisions, and these are intended to minimize possible failures.

The first is called anchoring and happens when a person relies on a familiar anchor as a starting point for a decision, later adjusting that information according to what he or she considers appropriate (Turner & Schley, 2016). If, for example, we are asked how many people live in Spain, we start by thinking of the number of Portuguese inhabitants, which will be a more familiar number, and through this reference we assume an approximate number, with always a margin for error.

The second heuristic is the availability rule, where the decision maker estimates the probability of an event based on how easy "instances or association [with that event] come to mind" (Tversky & Kahneman, 1973, p. 20). That is, if we take a very common example and think of a person who is going to travel, the most likely situation is that he or she will take out travel insurance, due to the constraints imposed by covid-19. Even though this scenario might not happen under normal circumstances, in the future, and because it is an example that will be more available in the automatic system, the probability of enduring will remain after covid-19. Thaler and Sunstein (2021) add that the automatic system is strongly aware of the risks associated with the most available examples to the memory, not being necessary to resort to more rational thinking, in risky situations.

Finally, representativeness is identified as a decision support strategy, which shows the extent to which factor 'A' is representative of 'B', based on stereotypes (Kahneman & Tversky, 1972). Although it may seem confusing, representativeness allows people to decide based on the stereotype they have of 'B', asking themselves to what extent this image is like 'A'. If we think about the profile of a marathon runner, at first the image that comes to mind is that of a thin person, not a small fat one, simply because there are more runners with this physical structure. Thaler and Sunstein (2021) state that despite a preconceived idea may correspond to the truth, it can easily lead people to confuse random fluctuations with causal patterns.

These three heuristics were earlier acknowledged in the 1970s, and other have subsequently been proposed that can be applied to different situations (see, for example, Gigerenzer & Gaissmaier, 2011). Acknowledging the heuristics can be instrumental to prevent bias. With these findings in mind, it is possible to explore heuristics to yield positive, desirable outcomes designing the environment in which people make choices so that when heuristic judgments are applied, the resulting choice reflects the most positive outcome among a set of established goals (Campbell-Arvai et al., 2014).

It is important to map the mechanisms the automatic system (i.e., common sense) uses but it is more important to know how to manage nudging so to make good use of these mechanisms into leveraging the positive impact by means the choice architecture. That said, we identify below some ways to apply nudging.

Ways to apply nudging include default, social-proof heuristic, attention shift, and framing (Johnson et al., 2012; Leigh, 2015). Default options consist of putting, as the option you want to be chosen, the one the decision makers automatically receive if they do not specify otherwise (Brown & Krishna, 2004 cited in Campbell-Arvai et al., 2014). This is a promising strategy in the sense that it exploits the likelihood of decision-making biases. Specifically, loss aversion – happens when a person dislikes 50-50 symmetrical bets, with the aversion increasing with the absolute size of the bets (Kahneman & Tversky, 1979) - and the endowment effect – defined as attributing additional value to things that belong to us, simply because we own them (Kahneman & Tversky, 1979). It additionally, eliminates the need for people to confront trade-offs that they find difficult, even if they are not (Campbell-Arvai et al., 2014).

The social proof heuristic is also known as the herd effect[1] and departs from the premise that most people learn from others, and therefore social influence is important in the sense that it allows them to effectively orient their behavior (Cialdini, 2009). Cheung et al. (2017) conducted a study showing that shopping on an empty stomach can encourage impulsive choices (related to the automatic system and usually leading to self-control failures) if there is no social proof heuristic. This research shows that hungry consumers do not always opt for a less healthy choice when faced with a self-control conflict. But the outcome of the choice depends on contextual cues that lead consumers with a tendency to make quick decisions following a social proof heuristic. Thus, it is possible to work with, rather than against, the impulse triggered by hunger to promote successful self-control behaviors.

The attention shift (Serences & Yantis, 2006) happens when the relevance of a product is increased by being positioned in places of evidence and, consequently, attention is drawn to it (Thaler & Sunstein, 2021). A very common example of this form of nudge arises when consumers choose to buy healthier foods by having them placed on shelves that are at eye level. Research conducted by Van Gestel et al. (2018) tested the extent to which healthy food products, placed on the checkout counter of a kiosk, were sold more, compared to unhealthy alternatives that despite not being displayed at the checkout counter, were kept available, so as not to alter the condition of freedom of choice. This study showed that the nudge, besides being effective, was well accepted by the customers.

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[1] As both terms (social proof heuristic, and herd effect) express two emphases of the same effect, we opted to use them interchangeably according to their relevance to the specific reasoning explained.

Finally, framing is a practice where the choices are dependent on the way problems are presented. Some of the most famous examples of framing effects were developed by Kahneman and Tversky (1981), who confronted experimental subjects with decision making based on mathematically symmetric but psychologically asymmetric forms of information. These authors put us in the scenario of a heart patient who will have to undergo a difficult operation. If this patient is told that 90 out of 100 of the patients who have already had this operation are still alive, he/she will be much more likely to be convinced to have the operation than if he/she is told that 10 out of 100 of the patients have died. Also, doctors are more likely to recommend the operation if they receive the information in a positive light.

Change people's behavior in a significant way, and through nudges, has advantages in terms of cost, time, and results. They are easy and cheap to implement (Hansen et al., 2016) and, so far, have proven to be very useful tools in accomplishing their goals, showing a positive correlation between what human behavior is predicted to do and what it does can be influenced to act in accordance with nudging cues. This has been sustained by a liberal paternalistic doctrine that justifies nudging based on fostering better choices to be made by helping people overcome natural human limitations (Thaler & Sunstein, 2021).

However, this issue has also raised serious doubts with many researchers who question the ethics of nudging, pointing to it as a form of manipulation. According to Mols et al. (2015) nudging represents a form of governance that has shown evidence of its success because studies that do so ignore some facts. Firstly, they ignore that many successful nudges are not nudges. For example, in the UK, news broke that Her Majesty's Court and Tribunal Services (HMCTS) ran a successful trial by using personalized text messages to remind people to pay their fines in court. In this trial, the rate of people paying their fines increased from 5% to 33% (The Guardian, May 2, 2013). However, it is known that nudge is designed so that the intended option is chosen unconsciously, so it is not clear why this intervention is characterized as nudge. According to Mols et al. (2015) the behavior change resulted from well-understood persuasion techniques that appealed to social norms and acceptable behavior. Added to these reasons is the fact that these people were under the surveillance of an authority.

Secondly, they overlook the ethical concerns such practices may entail. Thus, it is assumed that the likelihood of lasting behavioral change is greater when there is a change in social identity and internalization of norms. Sunstein (2016) also introduces a new concept associated with this form of management, coercion, which characterizes the restriction of freedom of action, whether for better or worse, and the possible cause of unintended negative consequences. To this question of whether nudging is considered coercion or manipulation, the author answers by drawing a parallel between these concepts, showing that people, despite opposing coercion, show much less skepticism towards nudging.

We can conclude that the nudge is not a coercive influence, so it does not threaten autonomy or dignity, and dignity concerns are the ones that often motivate the most implicit objections to nudges. According to Sunstein (2016), ethical objections to nudges do not have sufficient force, since both choice architecture and nudges are inevitable (so it is pointless to unwelcome them), obligatory, and defensible (regardless of the values on which they rest). It should be noted that still, not all forms of nudge or choice architecture are acceptable.

The biggest fear related to the use of nudge comes from blocking or restricting freedom of choice, and it is always necessary to safeguard that decision makers can make other choices even if they conflict with their own interests. However, if applied well, nudges only have benefits, and this might have been one of the grounds upon which Richard Thaler received the Nobel prize in 2007. Assuming benefits from any novel technique usually overcome costs, we endeavor into exploring their use in cooperation with HRM policies.

2.3. Uses of Nudging in HRM

The concept of nudge has also come to be noticed in the business context, and the sciences that study it have expanded their research methods and objects of inquiry through insights from social science domains. In this sense, company managers have also begun to choose strategies related to emotions and external factors, given the influence of these aspects on people's behavior (Barsade & O'Neill, 2016).

Organizations, by identifying and raising awareness of alternative forms of behavior, that are not required by law, are applying nudge to their employees, to improve internal procedures, reduce costs and increase the quality of work (Singler, 2018). So, when faced with various challenges that they want to see solved, or at least minimized, they can nudge which is a less resource-intensive solution.

The idea that people are more often influenced by emotions and external factors, than was known until recently, has been put to good use by managers in companies. This can be explained by research from Behavioral Economics, which shows that aversion to unfairness and inequality play an important role when evaluating employee performance (e.g., Kampkötter & Sliwka, 2016). Likewise, one of the assumptions in decision making that people use all the available information is not grounded, e.g., in policy making. Schuett and Wagner (2011) found that politicians do not use all available information and are prone to hindsight bias, i.e., a cognitive bias that *ex post facto*, overestimates the predictability of any given occurred event. This is due to the characteristic cognitive limitations of human beings, which not only benefit marketing experts, but also election researchers and, more recently, HR managers.

Often the most practical and quickest solution is not always the most logical, especially in the view of more traditional companies, companies like Google have been investing in innovative strategies related to the work environment, designing with the intention of providing more moments of relaxation among workers. They have also created micro-kitchens, enabling people from different departments to socialize and the enhance creativity by nudging people to share their knowledge (Bock, 2015).

These approaches always have as a final goal, to increase the productivity of employees and enhance their success, since these features are also a strategic advantage of companies against their competitors. To eliminate possible biases to their employees' performance (Ebert & Freibichler, 2017), companies can choose to, for example, decrease the time spent in meetings, as these can be excessive. This can start from an action as simple as changing the default meeting time, through the tools that are used for this purpose, since, as we have seen before, people are much more likely to choose the default options, because they do not imply an additional effort.

By using nudges, it is also feasible to reduce costs without causing employee discontent. A study conducted by Brown et al. (2013) shows, once again, that default options work, and work in the organizational context. Here the temperature of the thermostats was reduced by one degree, and workers were guaranteed the ability to change the temperature whenever they wanted, thus resulting in a reduction in electricity consumption during the winter period.

Since we can admit that decision making depends on the context in which we are embedded and that choices vary depending on this context, the nudges that facilitate the achievement of something can often be fallible because, after all, they are made by and for people. HR managers may forget, procrastinate, or fail in some way when it comes to assisting themselves or the employee in accomplishing their task. Even if the failure is unintentional, mistakes do happen, so it is necessary to avoid certain sludges like lack of communication or on the other hand overcommunication, those related to emotions like embarrassment or stigma, and the clunky and inelegant processes (Soman, 2021).

In sum, nudging is an important tool at the service of the best interest of society, organizations, and the individuals (depending on how it is designed). Still, findings pertaining to poor decision making and how nudge can build upon the architecture of choice to improve outcomes, have been mostly replicated as proven by Camerer et al. (2016) research, that replicated 18 of the best-known Behavioral Economics studies, and reach the same conclusion of 14 of such studies.

The use of nudge to influence people in an organizational context, can result in a new opportunity to improve individual behaviors and consequently the organizational environment, namely by promoting the acceptance of practices adopted to refine the context that manipulates quick thinking to improve efficiency, effectiveness, and motivation (Ebert & Freibichler, 2017). Thus, we believe that

companies and managers may have one more resource that can help improve employee performance through HR practices and policies.

Overall, in designing HR policies, literature converges into the idea that nudging could be put to good use into improving the probability that such policies are welcomed by those affected. Framing strategy seems to play a central role into deciding how to write the policies and therefore, we hypothesize that:

H1: The repeated use of framing increases the chances of accepting a given HR policy.

Considering the nudging strategies available, we think they can be combined to produce positive effects. Namely we depart form the premise that both social proof strategy and framing exert effects on the decision maker to hypothesize that the positive effects from social proof and framing are cumulative but vary according to their consistency.

H2: A favorable social proof together with positive framing increases the chances of accepting a given HR policy.

H3: An unfavorable social proof together with negative framing decreases the chances of accepting a given HR policy.

H4: A combination of favorable social proof together with negative framing increases the chances of accepting a given HR policy.

H5: A combination of unfavorable social proof together with positive framing increases the chances of accepting a given HR policy.

Method

3.1. Research design

Following previous research on nudging (e.g., Grunewald et al., 2017; Esposito et al., 2017; Musarra, 2019; Mobekk et al., 2020) we intend to test how much two different nudges (framing and social proof heuristic) can facilitate the acceptance of certain human resource practices. Some of the mentioned researchers had already conducted studies with these nudges, but none that combined the use of the two simultaneously, testing its various forms (negative and positive statement). Thus, we have drafted a scenario-based study, with a factorial 2x2x2 between-subject design with a control group. A factorial design was chosen, and this consists in studying simultaneously one or more factors (i.e., independent variables), estimating the effects of each factor at various levels of the dependent variable, that is, testing all possible combinations between them, resulting in an experimental outcome (Kalaian & Kasim, 2008). This design was selected over other methods (e.g., qualitative, or survey-based quantitative) because it is the suitable to examine effects in Behavioral Economics and to establish causal inference (Oxoby, 2006).

In total, eight treatment groups were created with each participant randomly assigned being exposed to different nudges (scenario 1 group 1: favorable framing + favorable framing; group 2: favorable framing + unfavorable framing; group 3: unfavorable framing + favorable framing; group 4: unfavorable framing; + unfavorable framing; added to equivalent number of groups for scenario 2 corresponding to matching favorable/unfavorable framing + favorable/unfavorable social proof heuristic) plus one control group for each scenario. The nudge effect results from the way the information is presented (i.e., with a positive or negative frame, in the case of framing) and from clear and consistent instruction about how other companies act (in the case of herd effect). Each group received different information in an online questionnaire, while the control group received no additional information, so to gauge any effect. After the nudge is applied, subjects in each treatment group were requested to answer a question using an 8-point Likert scale where 1 corresponds to a negative decision such as "I do not support it at all" and 8 to a positive decision indicating "I fully support it".

By previewing a control group, we could also waive the manipulation check. This manipulation check is usually required in this sort of research design, but the nature of nudging is a tacit one, i.e., it cannot be made explicit to be nudging. However, the manipulation check would necessarily made it explicit by asking the subjects whether e.g., most individuals would favor or not a given choice (to

gauge social proof heuristic). Additionally, manipulation checks have been criticized due to their potential biasing effect on the experiment itself (Hauser et al., 2018).

3.2. Stimuli

The stimuli comprise two scenarios, drafted to expose the subjects to a story concerning a HRM situation where the pros and cons of adopting a given measure (matching a policy) are presented, asking later for a decision in favor or against its application (see appendix A).

3.2.1. First Stimulus

The first scenario is written purposively to nudge subjects towards a specific decision by using framing. It concerns a decision pertaining giving or not support to a job post redesign proposal. The stimulus has two paragraphs and starts by exposing a dilemma to ensue with providing information in such a way that either frames thinking towards supporting the proposal or towards rejecting the proposal.

The dilemma reads as follows:

"XPTO strived to achieve a work structure characterized by its flexibility and adaptability. For this reason, it adjusted the design of the workstations, to promote a hybrid regime of service provision (remote or face-to-face). Despite the better management guarantees and other aspects related to job security and convenience, not all workers were satisfied with these changes. Workers' dissatisfaction with the change process leads to loss of motivation, extra costs, and risks and, consequently, lower-than-expected results[2]."

The favorable framing text reads as follows:

"When confronted with this situation, an expert in organizational change said that the company made a very correct decision in going ahead with the restructuring of the jobs, even without first talking to a professional. This is because there is a 50% chance of success even when workers are resistant to change[3]."

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[2] In the original, a Portuguese version was used, as follows: A empresa XPTO esforçou-se por alcançar uma estrutura de trabalho caracterizada pela sua flexibilidade e adaptabilidade. Por este motivo, ajustou a conceção dos postos de trabalho, com o intuito de promover um regime híbrido de prestação de serviços (de forma remota ou presencial). Apesar das melhores garantias de gestão e de outros aspetos relacionados com a segurança e conveniência de emprego, nem todos os trabalhadores se mostraram satisfeitos com estas alterações. A insatisfação dos trabalhadores face ao processo de mudança leva à perda de motivação, de custos e riscos extra e, consequentemente, resultados abaixo do esperado.

[3] In the original portuguese version used: Quando confrontado com esta situação, um perito em mudança organizacional disse que a empresa tomou uma decisão corretíssima ao avançar com a reestruturação dos postos de trabalho, mesmo sem antes ter falado com um profissional. Isto porque há 50% de hipóteses de sucesso até quando os trabalhadores se mostram resistentes à mudança.

This positive framing stimulus ends by reinforcing the positive framing, asking the subject "After listening to the expert, to what extent do you think the restructuring decision was right?"

The unfavorable framing text reads as follows:

"When confronted with this situation, an organizational change expert said that the decision to go ahead with job restructuring without first talking to a professional was a big mistake. This is because there is a 50% chance of failure when workers are resistant to change[4]."

This negative framing stimulus ends by reinforcing the negative framing, asking the subject "After listening to the expert, to what extent do you think the restructuring decision was wrong?"

The stimulus ends by asking subjects to signal in a 1 to 8 points scale (1 = Right decision, 8 = Wrong decision) their judgment.

As a control group, this same story was shown without any sort of framing. Thus, these stimuli counted on five possible conditions: 1) favorable-favorable, 2) favorable-unfavorable, 3) unfavorable-favorable, 4) unfavorable-unfavorable, and 5) neutral.

3.2.2. Second Stimulus

The second scenario adds complexity to the first one as it is intended to cross both framing nudge and social proof heuristic nudge. This scenario envisages a distinct story from the first as it concerns a decision pertaining giving or not support to a hiring headhunting service to target an IT manager. The stimulus closely follows the structure of the previous but starts by getting the subject to follow someone else's decision, shows the dilemma, frames the subject, and asks for the decision. The social proof text can be either nudging towards being favorable or unfavorable to hiring headhunting service.

The pro-headhunting social proof text reads as follows:

"Companies often face the need to attract talent for top management roles. On average, 80% of successful companies choose to pay more and hire specialized recruitment firms in this field, called headhunters (specialized professional/qualified executive search firms)[5]."

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[4] In the original portuguese version used: Quando confrontado com esta situação, um perito em mudança organizacional disse que a decisão de avançar com a reestruturação dos postos de trabalho, sem antes falar com um profissional, foi um grande erro. Isto porque há 50% de hipóteses de fracasso quando os trabalhadores se mostram resistentes à mudança.

[5] The portuguese version: As empresas enfrentam, frequentemente, a necessidade de atrair talento para funções de gestão de topo. Em média, 80% das empresas bem-sucedidas optam por pagar mais e contratar empresas de

The against-headhunting social proof text reads as follows:

"Companies often face the need to attract talent for top management roles. On average, 80% of successful companies choose to do so by their own means, rather than hiring headhunters (specialized professional/qualified executive search firms)[6]."

The dilemma reads as follows:

"Knowing that it is vital to hire a new highly qualified person to run the company's IT, the management had to decide whether to go ahead with headhunting. However, headhunting is expensive, and the company does not have enough budget, unless it cuts the budget for the rewards plan, which will have direct consequences on its competitiveness. Alternatively, you can execute the reward plan in full by recruiting by your own means (but with a higher risk of failure)[7]."

The favorable framing reads as follows:

"Knowing that companies that choose to use headhunters for this type of recruitment have a 60% success rate, indicate to what extent you would support management's decision to move to headhunting[8]."

The unfavorable framing reads as follows:

"Knowing that companies that choose to use headhunters for this type of recruitment have a 40% failure rate, indicate to what extent you would support management's decision to move to headhunting[9]."

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recrutamento especializadas neste domínio, chamadas de headhunters (empresas especializadas de procura de profissionais/executivos qualificados).

[6] The translation to its original version: As empresas enfrentam, frequentemente, a necessidade de atrair talento para funções de gestão de topo. Em média, 80% das empresas bem-sucedidas optam por fazê-lo por meios próprios, em vez de contratarem headhunters (empresas especializadas de procura de profissionais / executivos qualificados).

[7] In portuguese reads as follows: Sabendo que é vital contratar uma nova pessoa altamente qualificada para dirigir o IT da empresa, a direção deparou-se com a necessidade de decidir se avançava por via do headhunting. Porém, o headhunting é dispendioso e a empresa não tem orçamento suficiente, exceto se cortar no orçamento do plano de recompensas, o que terá consequências diretas na sua competitividade. Em alternativa, consegue executar o plano de recompensas na totalidade se fizer o recrutamento por meios próprios (mas com maior risco de insucesso).

[8] In the original portuguese version used: Sabendo que as empresas que optam por usar headhunters para este tipo de recrutamento têm uma taxa de sucesso de 60%, indique em que medida apoiaria a decisão da direção de avançar para o headhunting.

[9] The version originally used: Sabendo que as empresas que optam por usar headhunters para este tipo de recrutamento têm uma taxa de fracasso de 40%, indique em que medida apoiaria a decisão da direção de avançar para o headhunting.

The stimulus ends by asking subjects to signal in a 1 to 8 points scale to which extent the subject would offer his or her support to hiring headhunting service where (1 = Definitely would not support, 8 = Definitely would support).

Similarly, to the previous stimulus, a control group was designed by drafting a neutral condition. Thus, this stimulus counted on five possible conditions: 1) favorable social proof-favorable framing, 2) unfavorable social proof-favorable framing, 3) favorable social proof-unfavorable framing, 4) unfavorable social proof-unfavorable framing, and 5) neutral.

3.3. Procedure

An online questionnaire was designed in Qualtrics to expose respondents to one of the conditions in both scenarios. This software allows for a random selection of the conditions and each subject would be exposed to a single condition in the first scenario (among the five possible) followed by another randomly chosen condition from the second scenario (also among the five possible). The purpose of this random assignment is to ensure that each subject's condition would not be used to influence their response by assuming that a person's profession might make them more predisposed to one type of response, for example.

Participation occurred by means of an invitation via an email or through a social network such as LinkedIn, to freely participate in the study. The introductory text identified the study's nature as being a master thesis, the name of the researcher, the guarantees of anonymous participation and confidential nature of data, the expected time it would take to complete the questionnaire as well as explicit indication that the respondent could quit at any time without any consequence for him or herself. It was also showed a debriefing message with the researcher's contact information, should any doubt arise both concerning the study or its authenticity, and thanking the participants for their contribution to the study. As no explicit consent was initially requested, the sociodemographic questions were not mandatory. Participation was anonymous and confidentiality in data processing was guaranteed. Data collection took place during April 2022.

3.4. Sample

The sample comprises 228 valid responses. The sample is mostly masculine (53.9%), with participants mean age of 31.7 years-old (SD = 10.1) ranging from a minimum age of 18 to a maximum age 59 years. Participants are mostly single (58.8%) albeit married / common household compose a substantial part of the sample (36.4%). The sample is highly educated (65.4% have a college degree or higher-level diploma) from a varied range of subjects (mostly Social Sciences, Economics & Management, Science & Technology, and Humanities, by this order). In terms of their professional situation, 78.4% of the

participants are working (*n* = 178), of these, 113 do not work in HRM (63.5%) and 115 does not hold supervisory positions (64.6%). Overall, the sample can be characterized as young and well educated, being mainly employed, and not connected to HRM or management positions. As the subjects were ascribed randomly to each experimental conditions, the sample sizes vary. So, table 1 shows the sample sizes per condition for both stimuli.

Table 1 - Sample sizes per condition

Conditions	Stimulus 1		Stimulus 2	
	n	%	n	%
1 Favorable-Favorable	51	22.4%	36	15.8%
2 Favorable-Unfavorable	31	13.6%	40	17.5%
3 Unfavorable-Favorable	66	28.9%	53	23.2%
4 Unfavorable-Unfavorable	42	18.4%	49	21.5%
5 Neutral	38	16.7%	50	21.9%

3.5. Data Analysis Strategy

The analysis of the present study's data was performed by using the IBM SPSS Statistics software. Data was firstly screened for invalid cases, i.e., responses that were incomplete to the point of being of no use. This identified 29 cases to be excluded, most of these were only entries in the questionnaire without even having answered a single question. The remaining cases were 100% completed.

As is typical in this sort of experimental design, hypotheses are tested via mean comparison while controlling for possible influence of confounding variables. Thus, we opted to run ANCOVA (Analysis of Covariance) which is a mix of ANOVA and regression analysis. ANCOVA tests whether the independent variable influences the dependent variable, after the influence of covariates has been removed. So, in this case, the dependent variables are decisions 1 and 2, the independent variables are the five conditions presented and the covariates are age, gender, education, HRM connection and position in the company hierarchy. Thus, the effect that could influence the decision (i.e., the covariate) was eliminated, to understand whether the choice facing the presented scenario could be influenced by each individual's sociodemographic characteristics.

CHAPTER 4

Results

This section reports findings separately for stimulus 1 and stimulus 2. It starts by showing results pertaining to the assumptions of ANCOVA to then show the effects found.

This analysis has some assumptions namely pertaining to the homogeneity of variances between conditions, which is tested with Levene's statistic, as well as the requirement that the covariates are not strongly correlated with the dependent variables (i.e., .80 or higher).

Table 2 shows the bivariate correlations as well as descriptive statistics for both the outcome and covariates.

Table 2 - Descriptive and bivariate statistics

	Min-Max	Mean/Freq	SD	1	2	3	4	5	6
1. Decision_S1	1-8	4.21	2.19	--					
2. Decision_S2	1.8	4.19	2.16	.161*	--				
3. Age	1-59	31.7	10.1	.008	-.026	--			
4. Gender	1-2	53.9% M	--	.044	.071	.227**	--		
5. Education	1-6	3.85	.83	-.145*	-.050	-.218**	-.235**	--	
6. Work in HRM	1-2	63.5% No	--	.084	.041	.339**	.393**	-.429**	--
7. Hierarchy	1-2	64.6% No	--	-.053	-.022	-.404**	-.211**	-.009	-.080

This table shows that only one of the covariates has a significant correlation with one outcome variable (Decision_S1) but this correlation has a magnitude clearly below the threshold of .80, thus observing this assumption. Likewise, both Levene's tests for equality of error variances for stimuli 1 and 2, showed no heterogeneity in any of the cases (Table 3).

Table 3 - Levene's test for equality of error variances

Dependent variable	F	df1	df2	Sig.
Decision_S1	.762	4	223	.546
Decision_S2	.564	4	223	.689

Once we have verified the necessary prerequisites, we can proceed with the ANCOVA. The first consideration concerns the means for the outcome variables in both stimuli 1 and 2 (Table 4).

Table 4 – Means by condition

Conditions	Stimuli 1		Stimuli 2	
	Mean (1-8)	S.D.	Mean (1-8)	S.D.
1 Favorable-Favorable	4.03	1.99	5.50	1.96
2 Favorable-Unfavorable	4.19	2.30	3.77	2.16
3 Unfavorable-Favorable	3.60	1.92	4.41	2.01
4 Unfavorable-Unfavorable	4.16	2.16	3.42	2.03
5 Neutral	5.52	2.33	4.10	2.16

Table 5 shows findings for ANCOVA tests conducted on stimulus 1 (related to framing nudge) and Table 6 shows the pairwise comparisons between conditions.

Table 5 - Test of between-subjects effects for Decision_S1

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Correct Model	128.605[a]	9	14.289	3.256	<.001	.118	29.304	.980
Intercept	71.467	1	71.467	16.285	<.001	.070	16.285	.980
Age	7.651	1	7.651	1.743	.188	.008	1.743	.260
Gender	1.726	1	1.726	.393	.531	.002	.393	.096
Education	25.891	1	25.891	5.900	.016	.026	5.900	.677
HRM	.871	1	.871	.199	.656	.001	.199	.073
Hierarchy	9.695	1	9.695	2.209	.139	.010	2.209	.316
Cond1	99.243	4	24.811	5.654	<.001	.094	22.614	.978
Error	956.707	218	4.389					
Total	5119.000	228						
Corrected Total	1085.311	227						

a. R^2 = .118 (Adjusted R^2 = .082) b. Computed using alpha = .05

Table 6 - Pairwise comparisons for Decision_S1

(I) Cond1	(J) Cond1	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
1	2	.017	.485	1.000	-1.360	1.394
	3	.608	.398	1.000	-.520	1.735
	4	.013	.442	1.000	-1.241	1.266
	5	-1.448*	.452	.016	-2.729	-.166
2	1	-.017	.485	1.000	-1.394	1.360
	3	.590	.457	1.000	-.706	1.887
	4	-.004	.501	1.000	-1.426	1.417
	5	-1.465	.517	.050	-2.931	.001
3	1	-.608	.398	1.000	-1.735	.520
	2	-.590	.457	1.000	-1.887	.706
	4	-.595	.418	1.000	-1.779	.589
	5	-2.055*	.435	<.001	-3.290	-.820
4	1	-.013	.442	1.000	-1.266	1.241
	2	.004	.501	1.000	-1.417	1.426
	3	.595	.418	1.000	-.589	1.779
	5	-1.460*	.471	.022	-2.797	-.124
5	1	1.448*	.452	.016	.166	2.729
	2	1.465	.517	.050	-.001	2.931
	3	2.055*	.435	<.001	.820	3.290
	4	1.460*	.471	.022	.124	2.797

Based on estimated marginal means. * The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

By analyzing these tables, we see that the conditions 1, 3 and 4 differ from the control group, which suggests that the nudge had some effect, but do not differ from each other (i.e., do not follow

the intended effect). The average decision favorability in the condition corresponding to the control group was found to be more favorable than the experimental conditions (5.52). Since the existing differences were not strong enough to translate into the detection of the intended specific effect, the application of nudge in the form of framing in stimulus 1 was not successful. These findings reject hypothesis H1[10].

Moving on to stimulus 2 which joins the social proof heuristic with framing, table 7 shows findings for ANCOVA tests and Table 8 shows the pairwise comparisons between conditions.

Table 7 - Test of between-subjects effects for Decision_S2

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Correct Model	108.107[a]	9	12.012	2.758	.004	.102	24.823	.953
Intercept	14.367	1	14.367	3.299	.071	.015	3.299	.440
Age	4.208	1	4.208	.966	.327	.004	.966	.165
Gender	4.231	1	4.231	.972	.325	.004	.972	.166
Education	.016	1	.016	.004	.951	.000	.004	.050
HRM	.019	1	.019	.004	.948	.000	.004	.050
Hierarchy	.589	1	.589	.135	.713	.001	.135	.065
Cond2	102.299	4	25.575	5.872	<.001	.097	23.490	.982
Error	949.402	218	4.355					
Total	5066.000	228						
Corrected Total	1057.509	227						

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[10] The repeated use of framing increases the chances of accepting a given HR policy

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Table 8 - Pairwise comparisons for Decision_S2

(I) Cond1	(J) Cond1	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
1	2	1.806*	.492	.003	.410	3.203
	3	1.181	.460	.108	-.122	2.484
	4	2.141*	.466	<.001	.819	3.463
	5	1.452*	.460	.018	.147	2.758
2	1	-1.806*	.492	.003	-3.203	-.410
	3	-.625	.442	1.000	-1.878	.627
	4	.335	.449	1.000	-.937	1.607
	5	-.354	.451	1.000	-1.633	.925
3	1	-1.181	.460	.108	-2.484	.122
	2	.625	.442	1.000	-.627	1.878
	4	.960	.414	.214	-.215	2.136
	5	.271	.414	1.000	-.903	1.446
4	1	-2.141*	.466	<.001	-3.463	-.819
	2	-.335	.449	1.000	-1.607	.937
	3	-.960	.414	.214	-2.136	.215
	5	-.689	.423	1.000	-1.888	.509
5	1	-1.452*	.460	.018	-2.758	-.147
	2	.354	.451	1.000	-.925	1.633
	3	-.271	.414	1.000	-1.446	.903
	4	.689	.423	1.000	-.509	1.888

Based on estimated marginal means. *. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Condition 1 differs from all the others, including the control group, to the exception of condition 3. This means that the concomitance of the two types of favorable-to-the-decision nudging "favorable

social proof, and positive framing", are effective in increasing the likelihood of alignment with the decision. This supports hypothesis H2[11]. However, such is not observable in the case of concomitant negative nudging, thus rejecting hypothesis H3[12]. The use of mixed nudging with antagonistic valences (favorable-negative or unfavorable-positive) did not produce any measurable effect as compared to the control group, thus rejecting hypotheses H4[13] and H5[14], respectively.

Considering that the experimental design exposes the same individual to two deliberation situations, it is possible (as suggested by the positive correlation between S1 and S2 decisions, $r = .16$, $p < .05$) that there are cumulative effects, whereby the second decision could be influenced in some way by the first. Likewise, it is important to check to which extent the same individuals may have fallen into the same type of condition in S1 and S2, for example, if they have been exposed to a condition of favorability (condition 1) in both situations. To test this, we conducted a chi-square test of independence. Table 9 shows the relative frequencies per cell, crossing the five conditions from both stimulus_1 with stimulus_2.

Table 9 - Conditions per stimuli crosstabulation

% of Total		Stimulus_2 conditions					
		1	2	3	4	5	Total
Stimulus_1 conditions	1	3.9%	4.4%	3.5%	5.3%	5.3%	22.4%
	2	1.3%	3.1%	3.5%	3.1%	2.6%	13.6%
	3	5.3%	5.3%	6.6%	7.0%	4.8%	28.9%
	4	1.3%	2.2%	7.0%	3.5%	4.4%	18.4%
	5	3.9%	2.6%	2.6%	2.6%	4.8%	16.7%
Total		15.8%	17.5%	23.2%	21.5%	21.9%	100.0%

As evidenced in the table, there is no apparent pattern of associations, which is expectable when using a random assignment of conditions. This is also corroborated analytically by the chi-square statistic ($X^2(16) = 15.178$, $p = .512$).

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[11] A favorable social proof together with positive framing increases the chances of accepting a given HR policy.
[12] An unfavorable social proof together with negative framing decreases the chances of accepting a given HR policy.
[13] A combination of favorable social proof together with negative framing increases the chances of accepting a given HR policy.
[14] A combination of unfavorable social proof together with positive framing increases the chances of accepting a given HR policy.

Levene's test indicated that homogeneity of variances is observed in such analysis ($F_{(4,223)} = .820$, $p = .514$). Table 10 shows the estimates for the previous analysis but including the decision_S1 and the previous condition (stimulus 1) as a covariate.

Table 10 - Test of between-subjects effects for Decision_S2 controlling for Decision_S1

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Correct. Model	140.088[a]	11	12.735	2.998	<.001	.132	32.983	.986
Intercept	8.461	1	8.461	1.992	.160	.009	1.992	.290
Age	3.410	1	3.410	.803	.371	.004	.803	.145
Gender	5.564	1	5.564	1.310	.254	.006	1.310	.207
Education	.630	1	.630	.148	.701	.001	.148	.067
HRM	.066	1	.066	.016	.901	.000	.016	.052
Hierarchy	.292	1	.292	.069	.793	.000	.069	.058
Decision_S1	27.338	1	27.338	6.437	.012	.029	6.437	.714
Cond1	8.789	1	8.789	2.069	.152	.009	2.069	.299
Cond2	105.067	4	26.267	6.184	<.001	.103	24.737	.987
Error	917.421	216	4.247					
Total	5066.000	228						
Corrected Total	1057.509	227						

a. $R^2 = .132$ (Adjusted $R^2 = .088$) b. Computed using alpha = .05

Findings show that, even when controlling for the specific condition individuals were exposed in the first stimulus, both the estimate for condition 2 and the exact mean differences found in the *post-hoc* comparisons, remain similar. The second decision was not found to be conditioned by the first stimulus, regardless of its nature of favorability or unfavourability. Interestingly, the estimate for decision_s1 is also significant ($p < .05$) which indicates a cumulative effect in nudging.

Table 11 - Pairwise comparisons for Decision_S2 controlling for Decision_S1

| (I) Cond1 | (J) Cond1 | Mean Difference (I-J) | Std. Error | Sig.[b] | 95% Confidence Interval for Difference[b] | |
					Lower Bound	Upper Bound
1	2	1.847*	.487	.002	.465	3.228
	3	1.214	.454	.081	-.074	2.501
	4	2.174*	.461	<.001	.867	3.482
	5	1.457*	.455	.016	.167	2.746
2	1	-1.847*	.487	.002	-3.228	-.465
	3	-.633	.437	1.000	-1.873	.607
	4	.328	.443	1.000	-.929	1.584
	5	-.390	.446	1.000	-1.655	.876
3	1	-1.214	.454	.081	-2.501	.074
	2	.633	.437	1.000	-.607	1.873
	4	.961	.410	.201	-.203	2.125
	5	.243	.409	1.000	-.917	1.404
4	1	-2.174*	.461	<.001	-3.482	-.867
	2	-.328	.443	1.000	-1.584	.929
	3	-.961	.410	.201	-2.125	.203
	5	-.717	.418	.876	-1.903	.468
5	1	-1.457*	.455	.016	-2.746	-.167
	2	.390	.446	1.000	-.876	1.655
	3	-.243	.409	1.000	-1.404	.917
	4	.717	.418	.876	-.468	1.903

Based on estimated marginal means. *. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

CHAPTER 5

Discussion and Conclusion

In Behavioral Economics, it is assumed that people make biased judgments, choose based on how probable something is by how simple it is to recall instances of that type, and the biases that give rise to these choices, lead to predictable errors (Thaler, 2018). Following this reasoning, we conclude that deviations from rational choice models can also be predictable. Which aroused the need to add psychological realism to Economics to improve its explanatory power. Kahneman and Tversky did several investigations in this field, the first in 1974, where they address judgments and the second in 1979, where they advanced the Prospect Theory, contributing to a better perspective on decision making, particularly under uncertainty (Yechiam, 2019).

The search for a version of Economics that would better illustrate decision making began early on, since it was necessary to prove the fact of admitting that people are predictably irrational (Doces & Wolaver, 2021). This preposition was part of many investigations that illustrated the limits of rationality of decision makers by linking Economics with different social sciences and encompassing a variety of concepts, methods, and fields. Examples of this are the studies carried out by Krieshok et al. (2009), Shannon et al. (2019) and Lindebaum et al. (2020). Nudge has emerged in this context in the form of liberal paternalism, as an important instrument to influence decisions through a choice architecture without changing objective payoffs or incentives.

This subject has been widely discussed among researchers. However, there are not many studies that test the real usefulness of nudge in the HRM domain and how it can be operationalized. This study was designed to answer this gap, by understanding to what extent nudging strategies can facilitate the adoption of HR policies, in a context of need to solve organizational problems, indicating whether the application of framing and social proof heuristic results in the desired effects.

To understand when a probability is significant enough to influence decision making, framing was presented with a 50% chance of success/50% chance of failure. We opted to use this percentage so to isolate the "positive" and "negative" framing as showing differential probabilities of success/failure can *per se* exert effects. We were aware this would weaken whatever possible effect could emerge, and indeed, the nudge was not successful, since participants did not follow its specific effect. For this reason, hypothesis H1 was rejected. The prediction for positive effects resulting from the use of framing was based on studies conducted by Zubair et al. (2020). However, the same output was not obtained here. The reason that may explain this is that firstly, the studies conducted by Zubair et al. (2020) did not include any percentage in the message, only positive or negative expressions were used, and secondly because of probability neglect which is a type of cognitive bias where people tend to

ignore the probability presented when they are deciding under uncertainty (Sunstein, 2002). By showing a 50/50 chance, the condition made more explicit the level of uncertainty in the outcome of the decision. In these contexts, people neglect/overestimate small risks, and choose to make decisions that do not compromise them. This condition is confirmed by the fact that the control group (which had no background information) had a more favorable mean response rate when compared to the other treatment groups, which in turn had a response frequency centered at a medium level (i.e., with values around 4 out of 8). However, Levin et al. (1998) suggested that positive framing should perform better in this context, since a positively framed option generates associations, appearing more attractive than an option where negative framing was used.

Surprisingly, the condition that had a mean response closest to 1 (i.e., neglecting job restructuring), was the one combining unfavorable-favorable framing. This suggests that participants were keen to counteract the second framing that questions whether the decision was right, when presented with the first negative framing.

The second hypothesis of this study proposed that the use of favorable social proof in conjunction with positive framing would increase the chances of accepting an HR policy. This nudge exerted the best results, since the average decision on this condition was higher, compared to the other treatment groups. With this nudge, higher acceptance of the HR policy presented to solve the dilemma of stimulus two, was produced which is line with the findings of Gächter et al. (2009). We can thus assume that these results were obtained because people tend to avoid risk when a positive framing is presented (Tversky & Kahneman, 1981), and this was corroborated by the herd effect that guided the decision makers towards the intended effect.

On the other hand, hypothesis three addressed the likelihood of decreased acceptance of an HR policy through unfavorable social proof and negative framing. The double negative emphasis led to the rejection of this hypothesis, since negative framing did not decrease response favorability, contrary to what studies found, such as those by Krishnamurthy et al. (2001), Huber et al. (2014) and Moradi and Dass (2019), where negative framing was indeed successful. According to Levin and Gaeth (1988), negative framing activates negative associations, and these affect the associations that influence evaluation and/or persuasion. In this case, and given the dilemma presented, perhaps the nudge was not strong enough to influence a negative perception of this stimulus. Still, there was a greater unfavourability of response in this condition when compared to the control group. It is also worth exploring the possibility that the dilemma does not have a strong emotional/affective connotation which may suggest the emotional intensity is a structural variable that leverages (upwards or downwards) nudge effects when negative or positive framing is involved.

The fourth and fifth hypotheses concern the combination of social proof and framing, the nature of these (favorable/unfavorable and positive/negative) being mixed. Both hypotheses were rejected

in the present study. The reason for this rejection may lie on the presentation of a contradictory or divergent effect (e.g., unfavorable social proof with positive framing). Facing this, the subject is unable to establish a safe decision and to protect oneself, and chooses not to commit, giving a neutral response that does not differ from the one given by the control group. Still, we found that for the favorable-unfavorable condition there was a slightly lower response pattern when compared to the unfavorable-favorable condition. This can be explained by the availability heuristic (Tversky & Kahneman, 1973). As the last condition is the one that is more present in the automatic system of the individuals, it is quite natural that it is the one that exerts more effects on the decision.

Overall, we can conclude that people do not always display vulnerability to framing and social proof effects and related biases. The nudge may exert an effect on conditioning the acceptance of HR policies, in line with the findings of Grunewald et al. (2017). However, it may also not result in the intended effects since, as found using framing (stimulus 1) isolated, it does not exert any visible effect. It only has an effect when combined with the social proof heuristic (stimulus 2), and exclusively if there is no double negative nudging.

In this sense, the answer to the question "How effectively, can one define a communication context (nudge) that favors the acceptance of HR policies?" is: it depends. It depends on whether one uses a strong or weak framing as e.g., providing information that stresses the uncertainty of the outcome (i.e., a 50/50 situation) will not enact the effect. However, the contingency is not entirely out of the reach of the policy maker. The second question "Will concomitant nudge strategies, namely framing and social proof heuristic, produce cumulative effects?" has a better answer: yes, most likely, but not always. The recommendation for communicating HR policies is to use multiple nudges (combine framing with social proof heuristics) and, on the other hand, not to use negative framing and social proof heuristics. The nudge is effective when: 1) use concomitantly, 2) provide convergent messages, and 3) avoid negative framing.

5.1. Limitations

A limitation that can be pointed to this study is the absence of a manipulation check. However, as stated, such manipulation checks have been a subject of skepticism as their introduction in the middle of the experiment may trigger unaccounted effects, biasing the true magnitude or direction of the intended effect (Hauser et al., 2018). Still, one must think whether it is possible at all to run manipulation checks in any research targeting nudging effects, because nudging operates at the subconscious level while the manipulation check itself – any given question that is intended to measure the extent the subject is cognizant of the manipulation – overrides this subconscious condition.

Nudging would then change its status towards social influence or persuasion. In this extent, the lack of a manipulation check can even be considered a strength in this line of studies.

Experimental research has the great advantage of allowing for the control of conditions, namely the context itself where the experiment is running. However, by designing an experiment that is conducted online, we could not control for contextual effects – e.g., distractors – that could interfere with the exact same conditions for all participants. We assume such possible factors would occur randomly but still, never able to ascertain that.

This study also focused on two forms of nudge – herd effect and framing – but other forms could be studied. Finally, the sample size can also be considered as a limitation of this study, because its size (228 participants) may be modest considering the factorial design, although none of the conditions comprehended less than 30 responses.

5.2. Future research

The application of nudge to leverage HR policies and practices still has much room for investigation. Namely, future research may go further by endeavoring to understand not only the influence on the acceptance of these policies, but also on their effective application in organizations. Future research can greatly benefit by testing such effects in real-life settings and follow up on the effective implementation of the target policies and practices by employees.

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Appendix A

1. **Stimulus 1**

	Favorable decision for restructuring	**Unfavorable decision for restructuring**	**Control Group**
Objetive	Get more favorable answers.	Get more unfavorable answers.	Check what the participant's natural decision would be.
Dilemma	**A.** XPTO strived to achieve a work structure characterized by its flexibility and adaptability. For this reason, it adjusted the design of the workstations, to promote a hybrid regime of service provision (remote or face-to-face). Despite the better management guarantees and other aspects related to job security and convenience, not all workers were satisfied with these changes. Workers' dissatisfaction with the change process leads to loss of motivation, extra costs, and risks and, consequently, lower-than-expected results.		
Framing	**A1.** When confronted with this situation, an expert in organizational change said that the company made a very correct decision in going ahead with the restructuring of the jobs, even without first talking to a professional. This is because there is a 50% chance of success even when workers are resistant to change.	**A2.** When confronted with this situation, an organizational change expert said that the decision to go ahead with job restructuring without first talking to a professional was a big mistake. This is because there is a 50% chance of failure when workers are resistant to change.	*no additional information*
Framing in decision	**A1.1.** After listening to the expert, to what extent do you think the restructuring decision was right?	**A2.1.** After listening to the expert, to what extent do you think the restructuring decision was wrong?	**A3.** After hearing the company's decision, to what extent do you support this restructuring?

3. **Stimulus 2**

	Favorable decision for hiring headhunter	Unfavorable decision for hiring headhunter	Control Group
Objetive	Get more favorable answers.	Get more unfavorable answers.	Check what the participant's natural decision would be.
Social proof	**B1.** Companies often face the need to attract talent for top management roles. On average, 80% of successful companies choose to pay more and hire specialized recruitment firms in this field, called headhunters (specialized professional/qualified executive search firms).	**B2.** Companies often face the need to attract talent for top management roles. On average, 80% of successful companies choose to do so by their own means, rather than hiring headhunters (specialized professional/qualified executive search firms).	**B3.** Companies often face the need to attract talent for top management roles. They may choose to do so by their own means or by hiring headhunters (specialized professional/qualified executive search firms).
Dilemma	**B.** Knowing that it is vital to hire a new highly qualified person to run the company's IT, the management had to decide whether to go ahead with headhunting. However, headhunting is expensive, and the company does not have enough budget, unless it cuts the budget for the rewards plan, which will have direct consequences on its competitiveness. Alternatively, you can execute the reward plan in full by recruiting by your own means (but with a higher risk of failure).		
Framing/ decision	**B1.1.** Knowing that companies that choose to use headhunters for this type of recruitment have a 60% success rate, indicate to what extent you would support management's decision to move to headhunting.	**B2.1.** Knowing that companies that choose to use headhunters for this type of recruitment have a 40% failure rate, indicate to what extent you would support management's decision to move to headhunting.	**B3.1.** Given these trade-offs, please indicate to what extent you would support management's decision to move toward headhunting.

Possible hypotheses per stimulus:

Stimulus 1	Stimulus 2
1. A – A1 – A1.1	1. B1 – B – B1.1
2. A – A1 – A2.1	2. B1 – B – B2.1
3. A – A2 – A1.1	3. B2 – B – B1.1
4. A – A2 – A2.1	4. B2 – B – B2.1
5. A – A3	5. B3 – B3.1

Legend:

A – Dilemma   **B** – Dilemma

A1 – Favorable framing   **B1** – Favorable social proof

A2 – Unfavorable framing   **B2** – Unfavorable social proof

A1.1 – Favorable framing   **B1.1** – Favorable framing

A2.2 – Unfavorable framing **B2.1** – Unfavorable framing

A3 – Neutral information   **B3/ B3.1** – Neutral information