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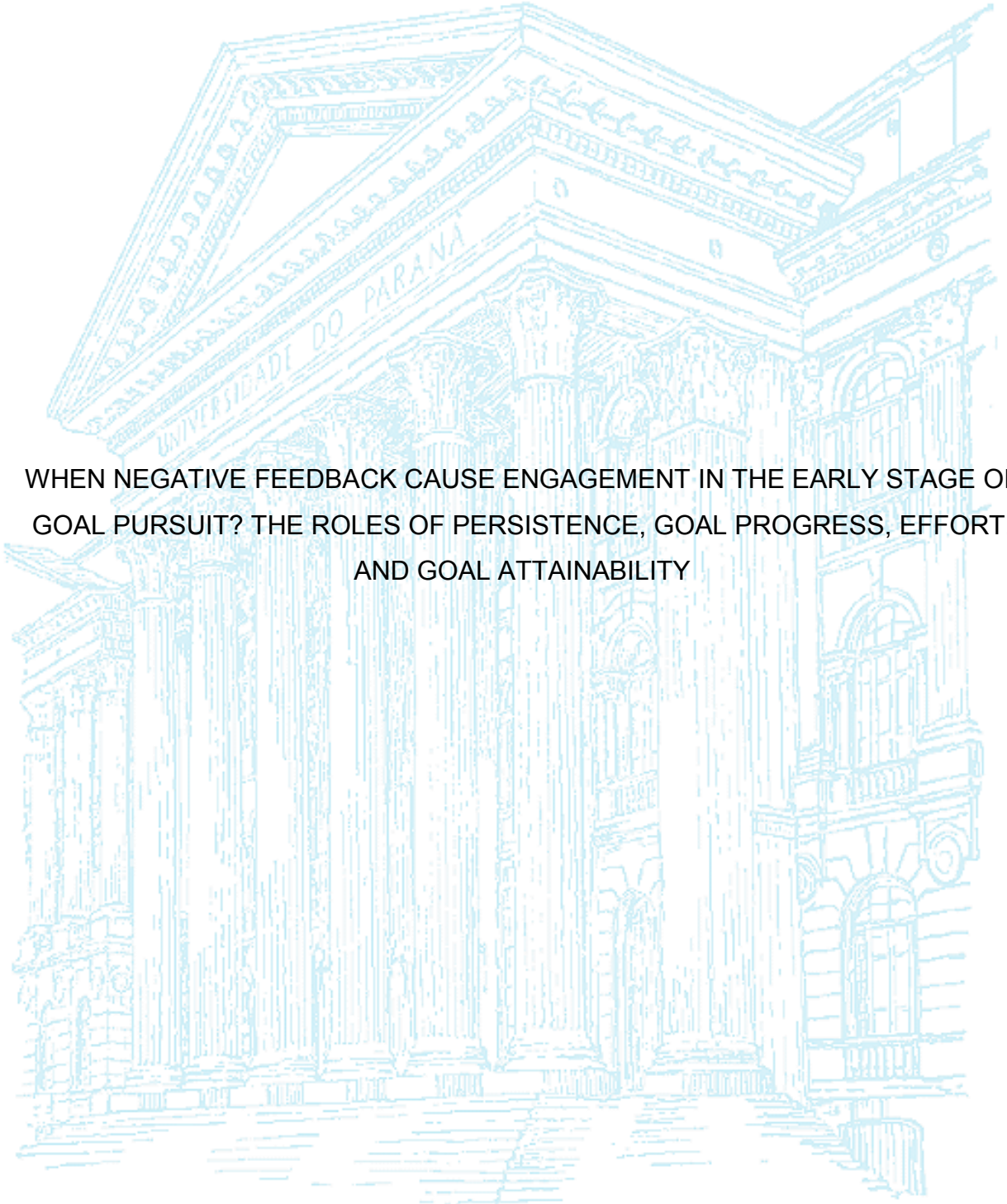
GRAZIELA PERRETTO RODRIGUES



WHEN NEGATIVE FEEDBACK CAUSE ENGAGEMENT IN THE EARLY STAGE OF GOAL PURSUIT? THE ROLES OF PERSISTENCE, GOAL PROGRESS, EFFORT, AND GOAL ATTAINABILITY

CURITIBA

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Tese apresentada ao Programa de Pós-graduação em Administração – PPGADM, área de Concentração - Estratégia de Marketing e Comportamento do Consumidor, do setor de Ciências Aplicadas da Universidade Federal do Paraná - UFPR, como pré-requisito para obtenção do título de Doutora.

Orientador: Prof. Dr. Paulo Henrique Muller Prado.

CURITIBA

2021

FICHA CATALOGRÁFICA ELABORADA PELA BIBLIOTECA DE CIÊNCIAS SOCIAIS APLICADAS – SIBI/UFPR COM DADOS FORNECIDOS PELO(A) AUTOR(A)
Bibliotecário: Eduardo Silveira – CRB 9/1921

Rodrigues, Graziela Perretto
When negative feedback cause engagement in the early stage of goal pursuit? The roles os persistence, goal progress, effort, and goal attainability / Graziela Perretto Rodrigues. – 2021.
101 p.

Tese (Doutorado) - Universidade Federal do Paraná. Programa de Pós-Graduação em Administração, do Setor de Ciências Sociais Aplicadas.

Orientador: Paulo Henrique Muller Prado.

Defesa: Curitiba, 2021.

1. Administração. 2. Metas. 3. Feedback. I. Universidade Federal do Paraná. Setor de Ciências Sociais Aplicadas. Programa de Pós-Graduação em Administração. II. Prado, Paulo Henrique Muller. III. Título.

CDD 158.1

MINISTÉRIO DA EDUCAÇÃO
SETOR DE CIÊNCIAS SOCIAIS E APLICADAS
UNIVERSIDADE FEDERAL DO PARANÁ
PRÓ-REITORIA DE PESQUISA E PÓS-GRADUAÇÃO
PROGRAMA DE PÓS-GRADUAÇÃO ADMINISTRAÇÃO - 40001016025P6

TERMO DE APROVAÇÃO

Os membros da Banca Examinadora designada pelo Colegiado do Programa de Pós-Graduação em ADMINISTRAÇÃO da Universidade Federal do Paraná foram convocados para realizar a arguição da tese de Doutorado de **GRAZIELA PERRETTO RODRIGUES** intitulada: ***WHEN NEGATIVE FEEDBACK CAUSE ENGAGEMENT IN THE EARLY STAGE OF GOAL PURSUIT? THE ROLES OF PERSISTENCE, GOAL PROGRESS, EFFORT, AND GOAL ATTAINABILITY***, sob orientação do Prof. Dr. PAULO HENRIQUE MULLER PRADO, que após terem inquirido a aluna e realizada a avaliação do trabalho, são de parecer pela sua APROVAÇÃO no rito de defesa.

A outorga do título de doutor está sujeita à homologação pelo colegiado, ao atendimento de todas as indicações e correções solicitadas pela banca e ao pleno atendimento das demandas regimentais do Programa de Pós-Graduação.

Curitiba, 29 de Junho de 2021.

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30/06/2021 18:33:50.0
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01/07/2021 13:33:29.0
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AGRADECIMENTOS

A conclusão deste trabalho não seria possível sem o apoio de algumas pessoas que me incentivaram.

Por primeiro, agradeço a minha família, minha filha Isabella e meu marido Marcelo por todo amor e compreensão. Apesar de todas as dificuldades que passamos juntos neste período, vocês deixaram o caminho mais leve, mais elegre e foram a minha fonte de inspiração. Sem vocês esta conquista não teria o mesmo sentido.

Ao meu orientador Prof. Dr. Paulo Henrique Muller Prado pela paciência, dedicação e por todas as contribuições para o desenvolvimento deste trabalho. Sou grata ao Prof. Dr. Dilney Albornoz Gonçalves pelas contribuições e pela participação no desenvolvimento desta pesquisa.

Agradeço também aos demais professores do PPGADM da UFPR que contribuíram para o meu desenvolvimento durante o curso de Doutorado. E aos colegas do curso por todo amparo e amizade.

Por fim, agradeço a todas as pessoas que me ajudaram a concluir esta etapa, a minha gratidão.

RESUMO

Os indivíduos recebem feedback durante a busca de metas e isso afeta a motivação para alcançá-las. Nesta pesquisa é investigado como as pessoas reagem ao feedback positivo e negativo e como se envolvem no estágio inicial de busca de metas. O feedback positivo geralmente vai gerar engajamento, enquanto o feedback negativo causa engajamento se as pessoas perceberem uma quantidade de esforço investido anteriormente. O feedback negativo causa engajamento quando as pessoas fizerem um grande esforço na incerteza. Com pouco esforço, é a certeza que aumentará o engajamento. Os mecanismos que explicam essas afirmações são a persistência sob incerteza e o progresso da meta na certeza. Foram feitos cinco experimentos no Mturk. Os experimentos 1, 2 e 3 testam as condições de feedback, esforço e atingibilidade da meta. O experimento 4 explora as mesmas condições em um problema de marketing e o experimento 5 testa os mecanismos explicativos - persistência e progresso da meta. Os resultados demonstraram que depois que as pessoas recebem feedback negativo, elas vão persistir e se esforçarão mais para atingir uma meta se já fizeram muito esforço anteriormente. No entanto, se as pessoas têm certeza de atingir uma meta, elas se concentram no progresso da meta e engajam mesmo que tenham feito pouco esforço anterior. As pessoas geralmente engajam depois de receber feedback positivo no estágio inicial de busca de metas. Os resultados destacam que as pessoas podem se engajar após receber feedback negativo no estágio inicial de busca de metas e explicam em que condições isso ocorre. Ainda apresenta-se as implicações teóricas e implicações gerenciais desta pesquisa, as limitações e oportunidades de pesquisas futuras.

Palavras-Chave: Busca de metas. Feedback. Esforço. Atingibilidade da meta. Persistência. Progresso da meta.

ABSTRACT

Individuals receive feedback during goal pursuit, and it affects their motivation towards achieving that goal. I investigate how people react to positive and negative feedback, and engage in the early stage of goal pursuit. Positive feedback will generally generate engagement, while negative feedback causes engagement if people perceive an amount of effort invested previously. Negative feedback will engage more if people make a high effort under uncertainty condition. In low effort, it is a certainty that will increase engagement. The mechanisms that explain these statements are persistence under uncertainty and goal progress in certainty. I conducted five experiments using MTurk. Experiments 1, 2, and 3 test feedback, effort, and goal attainability conditions. Experiment 4 explores the same conditions in a marketing problem, and Experiment 5 tests persistence and goal progress as explanatory mechanisms. The results demonstrate that when people receive negative feedback, they will persist and make more effort to attain a goal if they have made a high amount of effort previously. However, if people are certain about attaining a goal, they will focus on goal progress and engage, even if they did a low amount of effort. People generally engage after receiving positive feedback in the early stage of goal pursuit. Our results highlight that people can engage after receiving negative feedback in the early stage of goal pursuit, and explain the condition in which it occurs. I discuss the theoretical and the managerial implications of this research and note limitations and future research opportunities.

Keywords: Goal pursuit. Feedback. Effort. Goal attainability. Persistence. Goal progress.

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1 INTRODUCTION

Individuals are motivated by daily goals to achieve personal, academic, and professional challenges. Goals are critical to understanding consumer behavior, motivation, and decision making, among other specific themes important to their achievement (HIGGINS; SCHOLER, 2009). For example, in an academic perspective to do one Ph.D. thesis or an MBA scholarship selective process. In the practice, a complex and difficult project to execute, a great team to manage or keep consumers in a reward program. In these examples, people receive feedback, and goal achievement is not always a guarantee, even after people do an investment previous. So, regardless of the differences between goals, people invest effort in achieving them (LOURO; PIETERS; ZEELENBER, 2007). It is common for individuals to receive feedback in the goal pursuit process (FISHBACH; EYAL; FINKELSTEIN, 2010; FISHBACH; FINKELSTEIN, 2012), and seek information to confirm whether the goal is attainable (LOCK; LATHAM, 1990; ZHANG et al., 2011).

Empirical studies show that people commit more to the goal process in difficult goals, even if they are given negative feedback (LEE; KEIL; WONG, 2015). However, other studies argue that positive feedback causes this same goal commitment and probably more engagement in the early stage of the goal pursuit process (LOURO; PIETERS; ZEELENBER, 2007; FISHBACH; EYAL; FINKELSTEIN, 2010). The studies cited show that there is an impact of feedback valence (positive vs. negative) on engagement and demonstrates that the two valences can represent commitment when combined with other conditions (ESKREIS-WINKLER; FISHBACH, 2020). I examine how feedback interacts with effort invested previously and goal attainability to affect engagement.

There is consensus that effort affects feelings of success, and, in general, when people increase effort in one task they intensify their engagement with it (ZHANG et al., 2011; LIN, 2017). However, effort is more commonly used as a dependent variable or a result, rather than the cause of specific phenomena. Some studies have investigated the effort invested previously (BAEK; YOON; KIM, 2015; BIGMAN; TAMIR, 2016), but not the effect of feedback and engagement in the early stage of goal pursuit. I propose that people who perceive the amount of effort invested previously probably engage in goal pursuit even after receiving negative feedback.

Goal attainability explains this effect. Some authors agree that if people are certain about reaching a goal, that is, if people perceive the goal is attainable, they are motivated more during the goal pursuit process (ZHANG et al., 2011; KOO; FISHBACH, 2012). Others claim that uncertainty is the factor that increases motivation in the early stage of goal pursuit because people avoid uncertain situations and take actions to reduce uncertainty (HUANG et al., 2014; FARAJI-RAD; PHAM, 2017).

I defend the thesis that positive feedback will generally generate engagement. On the contrary, negative feedback will engage people more when they have made a high effort under uncertainty, and when they have made a low effort it is a certainty that they will increase commitment and cause engagement. The mechanisms that explain these statements in negative feedback are persistence in uncertainty and goal progress in certainty. When people are uncertain, they will make an effort to adjust their actions (HUANG et al., 2015; FARAJI-RAD; PHAM, 2017), and will persist in goal pursuit even after they encounter some difficulties and barriers (MOSHONTZ, 2017; SCHMITT; GIELNIK; SEIBEL, 2019). Conversely, under certainty individuals confirm goal attainability (ZHANG et al., 2011), and it will make people perceive goal progress (FISHBACH; DHAR, 2005).

This work will provide four contributions of theory to the goal literature, mainly offering new insights into how negative feedback can be effective even in the early stage of goal pursuit. The main contribution involves the early stage of goal pursuit because the result is not expected when compared to the final stage, when people generally make an effort and perceive that it is possible to achieve the goal (LEE; KEIL; WONG, 2015; GUTT; RECHENBERG; KUNDISCH, 2020). First, this study indicates that feedback valence, amount of effort invested previously, and goal attainability together explain engagement, not only feedback valence as suggested in previous studies (LOURO; PIETERS; ZEELENBER, 2007; FISHBACH; EYAL; FINKELSTEIN, 2010; FINKELSTEIN; FISHBACH; TU, 2017). This work aims to identify conditions in which negative feedback is more useful (LEE; KEIL; WONG, 2015). Second, the goal pursuit process could be changed according to the perception of previous investment. I argue that this perception of the amount of effort invested previously probably interferes with an individual´s interpretation of the signs available when achieving the goal (BAEK; YOON; KIM, 2015; BIGMAN; TAMIR, 2016). The amount of effort could be the mechanism that provides engagement, even in low levels, because it can be a signal of commitment combined with goal attainability. Third, the

studies agree that more effort encourages commitment to goal pursuit, and as a result, people engage in this process (LOURO; PIETERS; ZEELENBER, 2007; ZHANG et al., 2011; BAEK; YOON; KIM, 2015; LIN, 2017). This work also contributes to the goal literature by exploring situations in which low effort is effective. Lastly, I demonstrate the mechanisms that explain engagement in negative feedback between effort and goal attainability conditions: persistence and goal progress.

In practice, feedback is not always positive, and therefore it is necessary to understand the situations in which negative feedback works. This is also true in marketing. It is possible to engage consumers even with negative feedback, for example, in a reward program. Knowledge about the amount of effort previously invested by the individual and the perception of goal attainability can even assist people in returning feedback, in a way that could be more effective in their work. Both positive and negative feedback can be effective (ESKREIS-WINKLER; FISHBACH, 2020). For managers, this research demonstrates when negative feedback can be effective.

In summary, this thesis explores how people respond to positive and to negative feedback. It intends to show that positive feedback will generally generate engagement in goal pursuit, while negative feedback will be more effective after people have made a high effort under uncertain condition, and that when they make a low effort it is a certainty that increases commitment and causes engagement. The mechanisms that explain this are persistence in uncertainty and goal progress in certainty.

This work presents a literature review of studies involving feedback, engagement, effort, goal attainability, persistence, and goal progress. These concepts are discussed in the hypothesis. I conduct five experiments to test the hypothesis. Lastly, I present some final considerations, contributions, limitations, and possibilities for future research.

2 THEORETICAL BACKGROUND

This research presents a literature review of studies involving feedback, engagement, effort, goal attainability, persistence, and goal progress. These concepts are discussed in the proposed hypothesis.

2.1 FEEDBACK AND ENGAGEMENT

Feedback has been studied via several theories about importance and frequency in consumer behavior: goal-setting theory (LOCKE; LATHAM, 1990; LOCKE; LATHAM, 2002), self-regulation and control theory (BAUMEISTER; HEATHERTON, 1996; CARVER; SCHEIR, 1990), social cognition theory (BANDURA, 1991), and the management literature (ANSEEL et al., 2015).

In goal-setting theory, the classic goal-gradient hypothesis postulates that motivation to achieve one goal increases when the end state is close (HULL, 1932; MILLER, 1994; BONEZZI; BRENDL; ANGELIS, 2011; LEE; KEIL; WONG, 2015) and people invest more resources in reaching it (KOO; FISHBACH, 2012). This goal-gradient hypothesis has been investigated for years, and researchers have found support for it (KIVETZ; URMINSKY; ZHENG, 2006). Other mechanisms are used to understand goal achievement, as well as goal distance. This theory establishes that feedback is one signal that indicates the distance between the different stages (FISHBACH; DHAR, 2005; FISHBACH; EYAL; FINKELSTEIN, 2010).

Feedback is an essential topic of study because it signals an advance in goal achievement, and in some cases non-attainment of the desired end-state. It was a recurrent subject in goal literature studies from the years 2000 to 2010. Feedback informs individuals of the current state, and allows them to fit their actions to achieve one goal (FISHBACH; EYAL; FINKELSTEIN, 2010). Feedback has particular roles in the goal pursuit process. Feedback is important in order to indicate an individual's distance from the goal (FISHBACH; EYAL; FINKELSTEIN, 2010; HUANG; ZHANG; BRONIARCZYK, 2012), as well as the amount of effort required to achieve it (FISHBACH; FINKELSTEIN, 2012).

Feedback is also necessary to understand the motivation process, in which individuals are not always aware of their position in the goal stage. Some studies show that people are more committed when focusing on the distant future, however, this is

not true when consumers have high self-control. In this condition, consumers commit to near-future actions (EIN-GAR, 2015). Other researchers conclude that people tend to share more information in the early goal stage compared to the final stage because at the beginning, people need support from others to decrease uncertainty. This is true when they are in the same group (HUANG et al., 2015). Wiebenga and Fennis (2014) studied goal stage and motivation, and concluded that progress information affects motivation in goal pursuit. Koo and Fishbach (2012) also suggest that highlighting actions that it is possible to complete is more motivating than highlighting incomplete tasks at the early stage of goal pursuit. This is true because there is uncertainty about the progress of goal pursuit. In the final stage, motivation increases if people perceive the progress of goal pursuit. These studies show differences in the initial and end states of the goal pursuit process. As well as studies about the goal stage, there are others with a focus on the perception of distance to the end-state to be achieved. The perceived distance to the end-state affects goal pursuit and, the conditions that explain it are goal progress and goal commitment (HUANG; ZHANG; BRONIARCZYK, 2012).

Goal commitment is defined as an inference concerning the strength of a goal, whereas goal progress refers to the pursuit of a previously defined goal (FISHBACH; DHAR, 2005, p. 370). Goal commitment is an individual's motivation to invest their effort to achieve the desired goal (FISHBACH; ZHANG; KOO, 2009; KOO; FISHBACH, 2012; LOCKE; LATHAM, 2002). Goal commitment has been evaluated in different ways, as goal importance, a likelihood of attainment, amount of invested efforts and plan to attain the goal (KRUGLANSKI et al., 2002). Goal progress indicates how much an individual has advanced towards one goal (FISHBACH; DHAR, 2005). Some studies investigated consumer perception in goal progress and found progress bias (CAMPBELL; WARREN, 2015) and that people interpret differently goal progress (MATHUR; BLOCK; YUCEL-AYBAT, 2014; VAN DEN BERGH et al., 2016). These studies show that there is no consensus about consumer perceptions of goal distance. Some authors argue that there is one mechanism used to signal commitment, progress or the perceived distance in goal achievement: feedback (FISHBACH; EYAL; FINKELSTEIN, 2010; HUANG; ZHANG; BRONIARCZYK, 2012).

Feedback is explored in the organizational behavior literature, in which three distinct dimensions of feedback are investigated: valence (positive vs. negative), contingency (appropriate vs. inappropriate), and locus (output vs. behavior) (HAWES; RICH, 1998). The most commonly investigated is positive and negative valence

(JAWORSKI; KOHLI, 1991). Fishbach and Finkelstein (2012) define positive feedback as accomplishments, strengths, and correct answers, while, negative feedback indicates a lack of these accomplishments, weaknesses, and incorrect answers.

Positive feedback is more motivating for individuals when they are distant from their goals than when they are close to them. At the beginning of the goal pursuit process people increase their efforts when receiving positive feedback, as a feeling of success or an experience of positive emotions. Conversely, when failure indicates negative outcomes, it is more effective when people are advancing toward goal pursuit. When people gain expertise during goal pursuit, feedback negative becomes more effective than positive feedback (LOURO; PIETERS; ZEELENBER, 2007). Positive feedback is effective and may influence commitment at the initial stage in a long-term relationship. Negative feedback does not influence goal commitment, but does affect goal progress. When people gain expertise, they look for more negative feedback to improve their performance, and this motivates them (FISHBACH; EYAL; FINKELSTEIN, 2010; FINKELSTEIN; FISHBACH; TU, 2017).

Recently, a meta-analysis suggested that negative feedback generally harms intrinsic motivation, however, goal-setting theorists claim that negative feedback may affect the need to re-establish competence to achieve some goals (FONG et al., 2019). Negative feedback in some situations is more common, and there is research that only verifies the negative valence. Recent studies have demonstrated that goal commitment induces individuals to continue a prior course of action after receiving negative feedback (LEE; KEIL; WONG, 2015). This is because goal difficulty affects the escalation of commitment through expectancy and valence. This study shows the evidence that goal difficulty is related to commitment in a U-shaped curvilinear relationship. In addition to Lee, Keil and Wong (2015) others authors agree about commitment as a mechanism that explains motivation independently of the feedback valence (WICKLUND; GOLLWITZER, 1982; FISHBACH; FINKELSTEIN, 2012). In this case, it is the goal importance that motivates people, depending on the goal value that signals commitment (LEE, 2016).

Eskreis-Winkler and Fishbach (2020) argue in a theoretical study that both positive and negative feedback can be interpreted as a representation of commitment or progress. Motivation depends on factors other than feedback. It is necessary to match feedback to the correct context and people. Finkelstein, Fishbach, and Tu (2017) argue that negative feedback can be effective when it arises from a difference

between one's present achievement and the desired state, and people intend to decrease it when gaining expertise. Individuals who are dedicated and adopt a frame of progress will probably be more motivated after receiving negative feedback (ESKREIS-WINKLER; FISHBACH, 2020).

The studies presented demonstrate that there are differences in the understanding of feedback. While in some studies positive feedback signals commitment (FISHBACH; EYAL; FINKELSTEIN, 2010), in others it is the negative feedback that has this role (LEE; KEIL; WONG, 2015). It is possible that a positive experience is more effective in the early stage (LOURO; PIETERS; ZEELENBER, 2007), however, in difficult situations, positive feedback is probably only given in the end-stage. This shows a divergence in the understanding of the impact of feedback valence on engagement (ESKREIS-WINKLER; FISHBACH, 2020). Higgins and Scholer (2009) argue that engagement is necessary to achieve motivational force in goal pursuit.

Engagement is a state of being involved, occupied, fully absorbed, or engrossed in something and engagement strength is influenced by five characteristics: opposing interfering forces, overcoming personal resistance, regulatory fit, likelihood, and use of proper means (HIGGINS; SCHOLER, 2009, p. 102).

The goal pursuit process is important because it includes factors that affect an individual´s experience during that process. Each activity developed during the goal pursuit process contributes to value, and the strength of engagement depends on this value (HIGGINS; SCHOLER, 2009). For some people, this value can overcome a challenge. People encounter barriers and difficulties in this situation, such as receiving negative feedback, however, the focus on challenges overlaps these difficulties. Even when it is unpleasant, people feel attracted to an end-state, and overcome their own resistance to achieve the goal (HIGGINS; SCHOLER, 2009), resulting in task persistence (FÖRSTER, HIGGINS; IDSON, 1998).

Complementarily, when engagement is applied at work, this concept is also variable. Kahn (1990) defines engagement as employee behavior. This behavior is common in whose perceive more supportive conditions in their work roles. The author suggests that engagement is a value of work, and in the same way, the strength of engagement makes the goal more valuable (HIGGINS; SCHOLER, 2009; HIGGINS, 2006). Other authors define engagement as a persistent, positive and, motivational state of accomplishment that involves dedication, effort, vigor, and performance,

among other characteristics (SCHAUFELI et al., 2002; MASLACH; SCHAUFELI; LEITER. 2001; KAHN, 1990).

In this study, engagement is the willingness to achieve a goal, and it is influenced by overcoming personal resistance (HIGGINS; SCHOLER, 2009). I consider engagement as a behavior (KAHN, 1990) that represents how much willingness people have to complete a task, even when facing difficulties and barriers. I consider one goal in this work, with a certain level of difficulty (LEE; KEIL; WONG, 2015), and with one external barrier. An individual receives feedback about the ongoing goal and prompts the opposing force to overcome this external barrier (HIGGINS; SCHOLER, 2009).

In summary, feedback has valence (positive and negative) (HAWES; RICH, 1998; FISHBACH; EYAL; FINKELSTEIN, 2010), and it is used differently in goal stages (initial and final) (LOURO; PIETERS; ZEELENBER, 2007). Feedback valence is important in goal pursuit process, and both cause engagement (FISHBACH; EYAL; FINKELSTEIN, 2010; LEE; KEIL; WONG, 2015). There is evidence that feedback valence combined with other conditions signals commitment and affects the strength of engagement (ESKREIS-WINKLER; FISHBACH, 2020). In this research, I propose that the conditions are the amount of effort invested previously and goal attainability. The subject in the next topic.

2.2 EFFORT AND GOAL ATTAINABILITY

According to the goal literature, feedback valence has an effect on engagement. I propose that effort and goal attainability are the conditions that will explain this relationship.

Considering that human behavior is directed to one reference point in goal pursuit (FISHBACH; FERGUSON, 2007), and each individual feels motivated differently to achieve goals (FISHBACH; HENDERSON; KOO, 2011), motivation is influenced by perceived progress toward the goal (BONEZZI; BRENDL; ANGELIS, 2011), and feedback signals this progress (FISHBACH; EYAL; FINKELSTEIN, 2010). Depending on the prior effort invested, each individual will interpret this progress toward the goal in a different way.

It is generally believed that if people put more effort into goal achievement, they will attain better outcomes (LOURO; PIETERS; ZEELENBER, 2007; ZHANG et

al., 2011; BAEK; YOON; KIM, 2015; LIN, 2017). In the goal literature, effort is investigated as a consequence, after stimulus. For example, studies define effort as the time and work invested to perform a task. Effort is a result of the goal-making process measured as task execution time or amount of work (DWECK, 1986; SEO; ILIES, 2009; ZHANG et al., 2011), but it is not investigated if it is hard enough. On the other hand, the time invested to finish one task does not represent the focus of is the person performing the task. People may think about another task during execution, for example (FISHER; FORD, 1998).

Zhang et al. (2011) suggest that the initial effort invested is related to goal value. High effort increases goal value and a consumer's subsequent motivation if the choice is autonomous. In contrast, if a goal is experienced as a restriction of autonomy, a consumer will decrease goal value. Indeed, it is not only an effort investment, but the choice after that, which predicts value. The effect of effort on value is explored in the literature (ZHANG et al., 2011), but some authors expand this view, suggesting a distinction between inherent (liking) and incentive (wanting) value (KIM; LABROO, 2011).

In other studies on consumer behavior, people reward high effort firms, even when they do not have quality products or other benefits. The effort made affects gratitude, and consumers view effort as hard work (MORALES, 2005). Effort is also related to control. Cutright and Samper (2014) show that when control is low, consumers invest more effort to restore control. In other study effort is related to product choice. Lala and Chakraborty (2015) explored the amount of effort as a physical and mental resource that consumers use to purchase a product. They found that greater effort will lead a consumer to spend more, to justify the effort expended. The authors argue that time and effort are different resources, but they are confounded, and more effort brings time and spending time implies effort. Some studies relate goals and perceived effort in psychology. Dik and Aarts (2007), for example, investigate perceived effort and the effect on goal contagion. The perceived effort is also amplified in moral judgment (BIGMAN; TAMIR, 2016). These studies in consumer behavior show the importance of effort invested in different conditions, such as motivation, contagion, behavior and consumer choice (MORALES, 2005; DIK; AARTS, 2007; KIM; LABROO, 2011; CUTRIGHT; SAMPER, 2014; LALA; CHAKRABORTY, 2015; BIGMAN; TAMIR, 2016).

One study published in the advertising literature shows the moderating role of effort invested between message assertiveness and perceived importance. The authors argue that this effort investment affects attitudes and recycling intentions when people perceive importance (BAEK; YOON; KIM, 2015). Similarly, Yoon, Kim, and Baek (2016) found that the effectiveness of environmental advertising that is preceded by promises depends on how much effort is put in it before the advertisements.

More recently, Inzlicht, Shenhav, and Olivola (2018) defined effort as the intensity of physical and mental work to finish one task. These authors explain that difficulty is the task characteristic and because it is not related to task execution. From this perspective, an effort is a task execution. The effort will generate task value and it is costly. Because of this cost, humans tend to avoid effort when there is low value in a task.

The studies cited show that despite different areas of knowledge, effort is conceptualized as time and work; that is, how much energy and time is spent on task execution, how arduous the work is, and whether it is costly and valued. Because of the hardness of the work people tend to avoid effort (MORALES, 2005; ZHANG et al., 2011; DYSVIK; KUVAAS, 2013; LALA; CHAKRABORTY, 2015; INZLICHT; SHENHAV; OLIVOLA, 2018). People do increase effort in difficult goals in order to obtain better performance (LOCKE; LATHAM, 2002).

In this work, I consider effort as the time and hard work invested to perform a task. I argue that a long time does not always represent the difficulty of work, and can be distracting rather than keeping people focused on task execution (FISHER; FORD, 1998). More effort is necessary for difficult goals (LOCKE; LATHAM, 2002), and a combination of time and hard work is necessary to attain one goal. Effort is more common when it is a result of a goal pursuit process (BAEK; YOON; KIM, 2015; BIGMAN; TAMIR, 2016). In this research, effort is defined as a previous investment. I consider that the goal is difficult, it is a task characteristic (INZLICHT; SHENHAV; OLIVOLA, 2018). Consequently, there is some effort invested by individuals.

According to goal-setting theory, when individuals desire a goal, even if it is difficult, they consider their chance of attaining the goal. Individuals thus commit to goal pursuit if they believe the goal is attainable (LOCKE; LATHAM, 1990). I propose that goal attainability is the certainty of reaching some goal.

The term “uncertainty” arises more often in goal studies. Uncertainty arises with different meanings and is an integral and unavoidable part of human life (FARAJI-

RAD; PHAM, 2017, p. 1). In goal literature uncertainty is one environment characteristic that can affect goal pursuit (LOCKE; LATHAM, 2002). Uncertainty is defined as a discrepancy between one state and perceptions of that state, and this discrepancy causes discomfort. People generally avoid uncertainty, because that by taking action to reduce it. Perceptions about uncertainty also affect decisions and judgments (FARAJI-RAD; PHAM, 2017). In summary, uncertainty is part of goal pursuit and states of uncertainty (vs. certainty) affect consumer decisions so that it has become a common research topic.

Zhang et al. (2011) argue that difficult perceptions of goal attainment decrease motivation, while certainty increase motivation and effort, however, if people perceive uncertainty, they can seek information to confirm goal attainability. Similarly, Koo and Fishbach (2012) argue that certainty in the initial stage of goal pursuit indicates progress, and so people are more motivated than when they experience a lack of progress, that is if people perceive the uncertainty of achieving a goal. Fabiny and Lovaš (2018) show that goal attainment has consequences for goal pursuit, and that positive expectations affect commitment and stimulate effort, while negative feelings result in avoidance or restrict some behaviors. These studies show that certainty is a motivating factor in the early stage of goal pursuit.

Other studies show that individuals avoid uncertainty at the beginning of goal pursuit process and are thus motivated to decrease it. Huang et al. (2015), for example, show that people tend to share information and request support from others at the beginning of goal pursuit to reduce uncertainty. Lee, Keil and Wong (2015) report that people can be motivated towards difficult goals, even with low expectations of reaching them, and even if they fail.

In summary, individuals invest effort if they perceive a goal to be attainable, and they maintain their course of action if they have the same perception (LOCKE; LATHAM, 1990). Some studies agree that certainty or positive expectations affect commitment, increase motivation and stimulate effort, that is, people seek certainty to attain a goal (ZHANG et al., 2011; KOO; FISHBACH, 2012; FABINY; LOVAŠ, 2018), however, people choose between two behaviors in the face of uncertainty: avoiding that uncertainty, or making more effort to reduce it (HUANG et al., 2015; FARAJI-RAD; PHAM, 2017) or decrease motivation (LOCKE; LATHAM, 2002). I propose that these two situations depend on other factors, such as the amount of effort invested previously and feedback valence.

2.2.1 Negative Feedback, Effort and Goal Attainability

In the early stage of goal pursuit, when the goal is difficult, negative feedback signals advances due to previous knowledge, and individuals thus do not interpret it as a lack of progress, as pointed out in previous studies (FISHBACH; EYAL; FINKELSTEIN, 2010). I argue that when people perceive the amount of effort invested previously, negative feedback signals commitment (LEE; KEIL; WONG, 2015), and probably works like positive feedback and becomes effective, even in the early stage.

People more frequently invest effort in difficult goals, and as a result the value of the goal increases (ZHANG et al., 2011). The greater the effort, the greater the commitment (KIM; LABROO, 2011). The value of the goal creates more goal commitment, which reinforces the strength of engagement (HIGGINS; SCHOLER, 2009). If an individual perceives the amount of effort invested previously, this generates commitment and boosts performance.

Pre-existing levels of commitment, such as a high amount of effort, determine people's interpretation of their actions as commitment (FISHBACH; FINKELSTEIN, 2012). When people fail in their actions, there is a tendency to re-establish the actions to maintain performance (LOURO; PIETERS; ZEELENBER, 2007), and thus, people invest more effort in engagement. As a result, a high amount of previously invested effort increases engagement in negative feedback.

The effort that is invested towards a goal can increase commitment and engagement (ZHANG et al., 2011), because when people make some effort they do not want to waste it. As a result, commitment tends to escalate (LEE; KEIL; WONG, 2015). People who have invested effort towards a goal feel dissonance when they receive negative feedback (BAZERMAN; GIULIANO; APPELMAN, 1984). They can increase their effort to achieve the goal to reduce the dissonance, or justify their prior efforts. Similarly, uncertainty causes discomfort, and people tend to invest effort to reduce this discomfort (FARAJI-RAD; PHAM, 2017). In this case, uncertainty will justify the prior high effort, and both will reinforce commitment. When people receive negative feedback in conditions of uncertainty, they will thus engage more in high than low effort. A low amount of effort demonstrates some engagement at this stage, but it is not enough to escalate commitment at the early stage (LEE; KEIL; WONG, 2015), and uncertainty is not sufficient to create commitment and restrict some behaviors, such as engagement (FABINY; LOVAŠ, 2018), in low effort condition. Thus:

H1a: *Under an uncertainty condition, after receiving negative feedback, people who made high (vs. low) effort will engage more (vs. less) in goal pursuit.*

Conversely, when people perceive a low amount of effort to have been invested previously, certainty is the mechanism that will increase commitment and cause engagement, even after people receive negative feedback.

Low amounts of effort signal commitment, however it is not enough to make negative feedback work as positive. One explanation is because effort works like goal difficulty. Lee, Keil and Wong (2015) found a U-inverted shape between goal difficulty and the escalation of commitment, and demonstrate the importance of difficulty amount. A goal could be difficult, but not easy or extremely difficult. I propose that the same will occur with effort; it is necessary for a minimal amount of effort to signal commitment. There is one piece of evidence that presents the same U-inverted shape between effort and goal expectancy (LOURO; PIETERS; ZEELENBER, 2007), showing that an individual's behavior changes depending on the amount of effort. In summary, a low effort is not enough to cause engagement, even effort signals commitment. After people receive negative feedback and make low effort, it is necessary a commit reinforcement to people engage. I propose that is a certainty that reinforces commitment to attain a goal.

Certainty generates commitment and increases motivation to achieve a goal, and this generates effort (ZHANG et al., 2011). Certainty will reinforce commitment even with low effort, and people will engage. In other words, with low effort and negative feedback people will only engage if they perceive that the goal is attainable (LEE; KEIL; WONG, 2015). People seek information to confirm goal attainability (ZHANG et al., 2011), and in this case, certainty will confirm it. I propose that after receiving negative feedback, under conditions of low effort and uncertainty, there is no perception that an individual can restore their early state of high effort and uncertainty. By contrast, certainty reinforces commitment, and people realize that they can restore an early state even when they are making minimal effort. Conversely, in certainty and high effort, people feel a sense of partial goal attainment (LOCKE; LATHAM, 1990), and thus they do not need to restore their early stage, and therefore engage less than when making minimal effort. Therefore:

H1b: *Under a certainty condition, after receiving negative feedback, people who made low (vs. high) effort will engage more (vs. less) in goal pursuit.*

2.2.2 Positive Feedback, Effort and Goal Attainability

After receiving positive feedback, if people perceive that they are making any amount of effort, they will engage. This is because positive feedback is more effective in the early stage (LOURO; PIETERS; ZEELENBER, 2007), and indicates goal commitment (FISHBACH; EYAL; FINKELSTEIN, 2010). The effort will reinforce commitment (ZHANG et al., 2011). A person who perceives any amount of effort invested previously will continue with the same behavior, as found in previous studies (FISHBACH; DHAR, 2005; FISHBACH; EYAL; FINKELSTEIN, 2010).

Positive feedback increases engagement in the early stage of goal pursuit because any quantity of effort will reinforce commitment (ZHANG et al., 2011), as well as uncertainty and certainty. Goal attainment will reinforce commitment regardless of the uncertainty (HUANG et al., 2015; LEE; KEIL; WONG, 2015; FARAJI-RAD; PHAM, 2017) or certainty (ZHANG et al., 2011; KOO; FISHBACH, 2012; FABINY; LOVAŠ, 2018). Thus, I propose:

H1c: *After receiving positive feedback, people who made a low or a high amount of effort invested previously engage equally in goal pursuit in certainty and uncertainty conditions.*

In summary, positive feedback causes engagement in the early stage of goal pursuit no matter how much effort has been invested previously and under any goal attainability conditions. After people receive negative feedback, however, persistence is the mechanism that explains the relationship between effort, goal attainability and engagement in uncertainty, and goal progress is the mechanism under certainty.

2.3 THE MEDIATING EFFECT OF PERSISTENCE AND GOAL PROGRESS

When considering only negative feedback, the mechanisms that explain how people engage differently in effort and attainability conditions are persistence and goal progress.

Persistence is a concept of psychology related to human motivation. In goal gradient hypotheses, individuals be persistent about achieving a goal if they attribute value to it and they can expect to attain the goal (LIBERMAN; FÖRSTER, 2008). Still, people can be persistent if they maintain a course of action over time (SEO; BARRET; BARTUNEK, 2004). In the goal pursuit process, “feedback can possibly increase

motivation by raising attainment expectancies as well as the perception that the goal is valuable" (FISHBACH; FINKELSTEIN, 2012, p. 04). Feedback may therefore be one of the things that stimulates persistence in goal pursuit.

Being persistent means that individuals continue in goal pursuit, even if they encounter one or more forces opposing the goal, such as negative feedback (MOSHONTZ, 2017). Some conceptual and empirical studies have demonstrated that people persist and put more effort (time and energy) into attaining a goal, even when there are problems, negative results, and barriers during goal pursuit (FRESE; FAY, 2001; SEO; BARRET; BARTUNEK, 2004; SCHMITT; GIELNIK; SEIBEL, 2019). Persistence is commonly, associated with goal achievement, however it is not a guarantee, and sometimes people persist and do not attain their goal (MOSHONTZ, 2017). When people invest effort to continue on a course of action, they are more likely to attain the goal (FRESE; FAY, 2001; LOCKE; LATHAM, 1990).

Some recent studies have investigated the role of persistence. There is no integrative research that defines the persistence concept and it is unclear how to measurement it (MOSHONTZ, 2017). Yang, Stamatogiannakis, and Chattopadhyay (2015), for example, consider persistence as a dependent variable when measuring motivation, in which people present commitment and consider that goal is attractive. The authors measure how much willingness people have to complete a goal with three items: goal commitment, attractiveness, and persistence. In Schmitt, Goelnik, and Seibel (2019), works persistence is a mediator between anger and goal achievement. This mediation is moderated by action planning. Even with a negative effect, such as anger, people persist in goal achievement when there is a high degree of action planning.

In this work, persistence is a behavior that arises after people receive negative feedback. Persistence is the mechanism that explains how people engage more in high than low effort under uncertainty. People persist in goal pursuit because they see a value and expect to attain a goal (LIBERMAN; FÖRSTER, 2008). The effort invested previously is associated to goal value, and individuals make effort and increase that value (ZHANG et al., 2011). Similarly, people generally engage in goals if they have evaluated the chance of attaining them (LOCKE; LATHAM, 1990). In this case, the amount of effort previously invested will generate value, and this same effort will prompt expectations of attainability. Persistence thus means to continue in goal pursuit even in the presence of opposing forces (MOSHONTZ, 2017). The amount of effort

will generate value for an expected outcome (BAEK; YOON; KIM, 2015; LEE; KEIL; WONG, 2015), and people will see the negative feedback more positively. The amount of effort will promote persist behavior.

When people encounter uncertainty they may engage in one of two behaviors: avoiding uncertainty, or making more effort to restoring their action (HUANG et al., 2015; FARAJI-RAD; PHAM, 2017) or decrease motivation (LOCKE; LATHAM, 2002). I propose that the more effort people have previously made, the more effort they will make to restoring their action. Individuals expect to reach their goals, but not there is a certain. Expectations and value increase when more effort is made. As a result, people persist in goal pursuit. Persistence refers to a behavior that people maintain when decide to stay on a course of action (SEO; BARRET; BARTUNEK, 2004). People persist and make more effort to attain a goal, even when they receive negative feedback in goal pursuit. I propose:

H2a: *Under an uncertainty condition, persistence mediates the effect of effort on engagement in goal pursuit for those who receive negative feedback.*

When pursuing a goal, it is common for individuals to evaluate the stage of goal pursuit; that is, to evaluate how much progress has been made towards the goal. The goal progress indicates how much individuals advance in one goal (FISHBACH; DHAR, 2005).

Goal progress was a theme explored in the 2010s. Some studies in the goal literature have investigated how people interpret goal progress during goal pursuit (FISHBACH; EYAL; FINKELSTEIN, 2010; BONEZZI; BRENDL; ANGELIS, 2011; KOO; FISHBACH, 2012; MATHUR; BLOCK; YUCEL-AYBAT, 2014; WIEBENGA; FENNIS, 2014; CAMPBELL; WARREN, 2015; VAN DEN BERGH et al., 2016; FINKELSTEIN; FISHBACH; TU, 2017).

Bonezzi, Brendl, and Angelis (2011), for example, conclude that perceived progress toward a goal influences motivation. Generally, people believe that motivation increases when people get closer to the end state, however, this depends on the standard of reference to perceived progress. Similarly, Mathur, Block, and Yucel-Aybat (2014) argue that people interpret goal progress differently. Entity theorists interpret progress more positively because they evaluate the progress cues during goal pursuit as one advance. Incremental theorists believe more in our competence, and focus on improving it, so that in this case it is not affected by goal progress cues.

Connecting goal stage and motivation, Wiebenga and Fennis (2014) concluded that information about progress affects motivation in goal pursuit. They investigated the effect of progress framing (cues presented as to-date vs. to-go) in people with abstract and concrete mindsets. People with an abstract mindset have increased motivation when their progress cues are presented as to-date, compared to to-go cues. Similarly, Koo, and Fishbach (2012) suggest that highlighting actions is more motivating than incomplete tasks when people are in the initial stage of a goal pursuit. This is true because there is uncertainty regarding the progress of goal pursuit. In the final stage of goal pursuit, motivation increases if people perceive the progress of their goal pursuit.

Some studies address progress bias. Campbell and Warren (2015) demonstrated that consumers who perceive consistent behavior advance their progress compared with individuals who do an equivalent amount of inconsistent behavior. In the same way, Van Den Bergh et al. (2016) found that progress markers influence goal progress and motivation to reach a goal. Customers, for example, walk faster when they see fewer markers along a walking path towards their goal.

According to Fishbach, Eyal, and Finkelstein (2010) negative feedback signals goal progress, not goal commitment. When people gain expertise in one task, they seek negative feedback because they focus on improving their performance (FINKELSTEIN; FISHBACH; TU, 2017). These studies offered evidence that individuals who adopt a frame of progress will probably be more motivated after receiving negative feedback (ESKREIS-WINKLER; FISHBACH, 2020).

Goal progress can be interpreted in different ways and motivate goal pursuit (BONEZZI; BRENDL; ANGELIS, 2011; KOO; FISHBACH, 2012; MATHUR; BLOCK; YUCEL-AYBAT, 2014; WIEBENGA; FENNIS, 2014; CAMPBELL; WARREN, 2015; VAN DEN BERGH et al., 2016). Additionally, negative feedback is related to goal progress and can be effective in the goal pursuit process (FISHBACH; EYAL; FINKELSTEIN, 2010; FINKELSTEIN; FISHBACH; TU, 2017; ESKREIS-WINKLER; FISHBACH, 2020).

In this work, under certainty, people will engage, albeit with low effort, after receiving negative feedback. This is true because certainty reinforces goal commitment even when people make a low amount of effort. Regardless of the amount of effort, people seek information to confirm the attainability of the goal (ZHANG et al., 2011), and in this case, the certainty will confirm it. Certainty indicates that an individual

can advance toward the goal, that is, it will make individuals perceive goal progress (FISHBACH; DHAR, 2005). When people adopt a frame of progress, the negative feedback will be more motivating (FISHBACH; EYAL; FINKELSTEIN, 2010; ESKREIS-WINKLER; FISHBACH, 2020). Goal progress is therefore a mechanism that explains engagement after receiving negative feedback when effort has previously been invested under a certainty condition (FISHBACH; EYAL; FINKELSTEIN, 2010). Thus:

H2b: *Under a certainty condition, goal progress mediates the effect of effort on engagement in goal pursuit for those who receive negative feedback.*

3 OVERVIEW OF STUDIES

In order to test the proposed hypotheses, I conducted five studies using an experimental methodology on Amazon Mechanical Turk. I test two dependent variables: "*Likely to reach a goal"* and *"Likely to continue working on this goal"*.

Experiment 1 aimed to provide the first evidence for H1a and H1c. I manipulated the effort invested previously in one scenario and gave feedback to participants. Experiment 2 tested H1b and H1c. It is similar to Study 1; the only difference between them is the attainability of the goal. Study 1 took place under uncertainty and Study 2 under certainty. These two studies confirm the predictions, that is, they confirm that, under uncertainty, individuals who made a high effort engage more than when making a low effort after receiving negative feedback (H1a). Similarly, in the same feedback condition but under a certainty condition, participants who made a low effort engage more in goal pursuit compared to those who made a high effort (H1b). In both experiments, I found support for H1c, that is, positive feedback promotes engagement. The results are found in the dependent variable *Likely to reach a goal"*. I did not found results in the dependent variable *"Likely to continue working on this goal"*. One explanation is that participants read a scenario and did not perform a task.

Experiment 3 aims to test hypotheses H1a, H1b, and H1c in the same study. It proposed a manipulation with a task, that is, participants made an effective effort to complete a word search game. I did not find support for all hypotheses, but the results help to adjust attainability manipulation.

Experiment 4 aims to replicate previous studies, the difference being that it manipulated a marketing problem. I found evidence to support H1a and confirm H1b and H1c. The results are only in the dependent variable *"Likely to continue working on this goal"*, probably because participants did one task during a reward program.

Lastly, Experiment 5 aims to reinforce previous studies and test the proposed mechanisms (H2a and H2b). This study complements previous results. In the first dependent variable "*Likely to reach a goal",* I confirm H1b and H1c, under certainty. In the second *"Likely to continue working on this goal"***,** I confirm H1c under uncertainty. The major contribution revealed is support to proposed mechanisms em both dependent variables. Under uncertainty, persistence is the mediator between effort and engagement in goal pursuit for those who receive negative feedback (H2a). Under certainty, goal progress is the mediator (H2b).

4 EXPERIMENT 1

The main objective of this study is to present the first evidence that after receiving negative feedback people who made a high effort engage more in goal pursuit when compared who made a low effort under uncertainty (H1a). Similarly, the study aims to show that when people receive positive feedback there is engagement at both levels of effort (H1c). I manipulated amount of effort and feedback valence. The goal must also have a specific level of difficulty, but can be neither easy nor extremely difficult (LEE; KEIL; WONG, 2015).

The propositions will be tested using the experimental method, and because it is necessary to list possible confounds. For this reason, I measure self-efficacy and attribution. Large empirical studies have demonstrated that self-efficacy beliefs increase motivation, because high self-efficacy increases effort, persistence, confidence, and even performance (LOCKE; LATHAM, 1990; BANDURA; LOCKE, 2003). Additionally, when goals become more difficult, people put more effort into achieving them, because the experience of success in goal achievement raises self-efficacy (GUTT; RECHENBERG; KUNDISCH, 2020). Self-efficacy can thus change the perception of the amount of effort required, and affect motivation. Another possible explanation involves attribution theory, which relates to the causes of motivation. The cause of attribution can be internal or external. Attribution is internal when the response was oneself and is external when a causal agent has in the environment (WEINER, 1985). This attribution may change the interpretation of feedback if an individual takes responsibility or attributes responsibility to others.

4.1 METHOD

Participants and design. A total of 120 MTurk participants (63.3% male, mean age=33.5) completed the study in exchange for payment. I conducted a 2 (effort: low x high) x 2 (feedback: positive x negative), between-subjects design. The participants were randomly assigned to effort and feedback conditions.

Procedure. All participants received instruction about the study, they read the following text "*This research is about* ***how people perform difficult tasks****. We will show you a scenario and ask some questions about this subject."* They read a scenario described as *"Suppose that you have been assigned a* ***difficult project with a tight***

***deadline**. However, the company you work for gives you the necessary conditions to develop the project. With this scenario in mind, you thought it best to get to work"*. The high effort manipulation was as follows: *"Imagine that you started working on the project and were surprised by the difficulty of the task. Because of that, you **work hard**. You put a **lot of effort** into the job. If you continue like this, **maybe you will complete** the project on time." (vs. low effort: "... you **don't work very hard**. You put **little effort** into the job. Still, you realize that if you continue like this, **maybe you will complete** the project on time.)* After that, participants received positive or negative feedback. This feedback consisted of a sentence and an emoticon (APPENDIX 1). In the positive feedback condition, people read the following sentence: *"**You're doing great! Congratulations!**"* and in negative feedback: *"**You are doing poorly! Watch out!**"* Respondents then indicated how likely they were reach to the goal (1 = Extremely unlikely; 7 = Extremely likely), and how much they wanted to continue working on the project (1 = Not at all; 7 = Very much), as a dependent variable. I included some questions about effort and feedback as manipulation checks. I consider the effort invested has a certain quantity of work, is hard to execute and people spend some time to make this effort (LOURO; PIETERS; ZEELENBER, 2007; LALA; CHAKRABORTY, 2015). I consider the goal difficult, and in the early stage. I thus included questions to check goal progress and goal difficulty. I measured some confounds (attribution, self-efficacy, and confidence) and demographic questions.

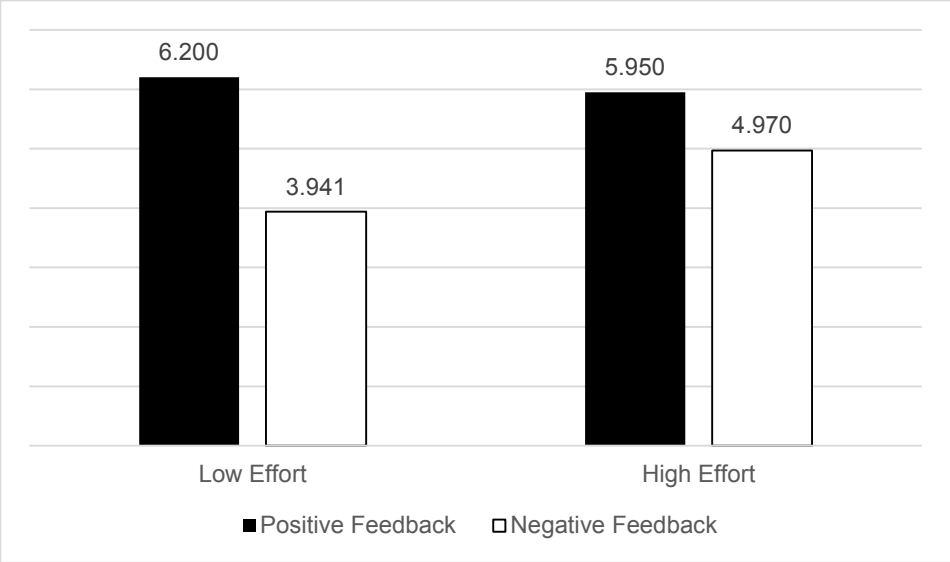
4.2 RESULTS

Manipulation Check. As expected, individuals that read the text about low effort perceived less quantity, hard work and time spent in the project compared to respondents in the high effort condition, as follows: effort quantity (M_{low}=4.57; SD=1.862; M_{high}=5.64; SD=1.229; t=-3.793; p=0.000), time making the effort (M_{low}=4.43; SD=1.874; M_{high}=5.79; SD=1.224; t=-4.845; p=0.000) and how hard was it (M_{low}=4.62; SD=1.895; M_{high}=5.64; SD=1.284; t=-3,540; p=0.001). Those who received positive feedback perceived the phrase as more positive than those who received negative feedback ($M_{positive}$=6.33; SD=.756; $M_{negative}$=3.04; SD=2.194; t=11.626; p=0.000).

Results. I performed an ANOVA using effort and feedback as predictor factors, and "*Likely to reach a goal"*, as the dependent variable. The results show the main

effect of feedback on engagement (F (1, 116)=39.564, p=.000; ηp2=.254) and the interaction between effort and feedback (F (1, 116)=6.164, p=.014; ηp2=.050). In the negative feedback condition, those who perceived high effort engaged more them those who perceived low effort (M_{low}=3.941; SD=1.886; M_{high}=4.970; SD=.1.723; p=0.011). In the positive feedback condition no significant effect was found (M_{low}=6.200; SD=0.664; M_{high}=5.950; SD=1.061, p=0.442). These results confirm H1a and H1c. Pairwise comparisons show that within the low effort conditions those who received positive feedback engaged more than those who received negative feedback ($M_{positive}$=6.200; SD=0.664; $M_{negative}$=3.941; SD=1.886, p=0.000), and the same was true in the high effort condition ($M_{positive}$=5.950; SD=1.061; $M_{negative}$=4.970; SD=1.723, p=0.002). These results are shown in Figure 1.

FIGURE 1 – ENGAGEMENT LEVELS (FEEDBACK x EFFORT) OF EXPERIMENT 1 RESULTS



SOURCE: Author (2021).
NOTE: Dependent variable - Likely to reach a goal.

4.2.1 Additional Analysis

I checked goal progress and goal difficulty to verify whether they affected the proposed model. I also explored self-efficacy, confidence, and attributions as confounds.

Goal progress, goal difficulty, self-efficacy, and confidence presented no difference between conditions of effort, and were not significant.

Respondents receiving positive feedback perceived more goal progress than those who received negative feedback ($M_{positive}$=5.56; SD=1.247; $M_{negative}$=4.60;

SD=1.690; *t*=3.571; *p*=0.001). This difference is expected, because feedback is one signal that indicates distance, and goal progress indicates an individual's progress in one goal (FISHBACH; DHAR, 2005; FISHBACH; EYAL; FINKELSTEIN, 2010). Similarly, self-efficacy show differences between feedback conditions ($M_{positive}$=5.70; *SD*=1.134; $M_{negative}$=4.90; *SD*=1.693; *t*=3.100; *p*=0.002), such as confidence ($M_{positive}$=5.84; *SD*=1.002; $M_{negative}$=5.08; *SD*=1.652; *t*=3.141; *p*=0.002). As expected, individuals presented higher self-efficacy and confidence after receiving positive feedback than in the negative condition (LOCKE; LATHAM, 1990; BANDURA; LOCKE, 2003).

Goal difficulty and internal attribution present no difference between feedback conditions and were not significant. Only external attribution showed a difference between feedback conditions ($M_{positive}$=4.79; *SD*=1.817; $M_{negative}$=4.04; *SD*=2.000; *t*=2.125; *p*=0.036). The attribution is external when one causal agent is in the environment (WEINER, 1985), as feedback. The attribution changes the interpretation of feedback, as people who receive positive feedback attribute it to others more than those who receive negative feedback.

4.3 DISCUSSION

As predicted, I found a difference between effort conditions only in negative feedback, and in the high effort condition, where the effect is greater than in the low effort condition, and confirm Hypothesis 1a. This result reinforces the theory that negative feedback can engage even at the early stage of goal pursuit (LEE; KEIL; WONG, 2015), and that the interaction between feedback and effort occurs in this valence. In contrast, I did not find a difference between low and high effort in the positive condition, that is, people who receiving positive feedback engages in any amount of effort when there is uncertainty. H1c is thus confirmed in this condition. This result reinforces the goal literature that shows engagement after individuals receive positive feedback (LOURO; PIETERS; ZEELENBER, 2007; FISHBACH; EYAL; FINKELSTEIN, 2010).

The results indicate that engagement after an individual receives negative feedback may increase even at the early stage of goal pursuit, which justifies continuing to explore effort conditions in this valence. Most studies have demonstrated that positive feedback is most effective at an early stage (LOURO; PIETERS;

ZEELENBER, 2007; FISHBACH; EYAL; FINKELSTEIN, 2010), so this finding is unexpected. Being able to explain this effect connected to effort is a contribution to the goal literature. Similarly, the amount of effort is a mechanism that increases engagement (ZHANG et al., 2011). However, I show that is not all amount of effort that works. This is an interesting finding that should be investigated in future studies.

One limitation to this study is that I only explored the uncertainty condition. Still, the results were on the dependent variable "*Likely to reach a goal"*. The same did not occur in the dependent variable *"Likely to continue working on this goal"* probably due to manipulation. Participants read a scenario and pointed out how willing they were to complete the proposed goal. They did not perform a task, as a consequence, they did not indicate how much they would like to continue working on the proposed goal.

In the next study, I propose the same manipulation, changing the goal attainability, to determine whether the same effect occurs under certainty (H1b), and test H1c in this attainability condition.

5 EXPERIMENT 2

The main objective of this study was to provide the first evidence that a certainty scenario will alter feedback perception. It is the first study to test certainty about attaining a goal, and more specifically, aims to test H1b, that after receiving negative feedback individuals who made low effort will engage more in goal pursuit compared to those in the high effort condition. This study aims to reinforce H1c in positive valence, however, it is under certainty. It thus complements Experiment 1. The same procedure and instructions were used again. In manipulation scenery, I only complemented with certainty information. The same feedback manipulation was presented to participants. I also maintained the same measures as used in Experiment 1. In summary, I intended to demonstrate that after people receive negative feedback, they will engage differently depending on the effort invested previously in one certainty scenario, complementing the first study findings.

5.1 METHOD

Participants and design. A total of 402 MTurk participants (58.7% female, mean age=37.4) responded to the experiment that employed a 2 (effort: low x high) x 2 (feedback: positive x negative) between-subjects design.

Procedure. Participants read the same instructions and scenario as in Study 1. The difference was in the effort manipulation. I changed the last phrase at the end of the text, that is, I reinforce the certainty of completing the goal: *"… If you continue like this,* ***you will complete*** *the project on time."* in the high effort condition (vs. *"Still, you realize that if you continue like this,* ***you will complete*** *the project on time."*) in the low effort condition. After the effort manipulation, respondents received positive or negative feedback and answered the same questions as in Experiment 1. The same dependent variables, manipulation checks, and demographic questions were measured (APPENDIX 2).

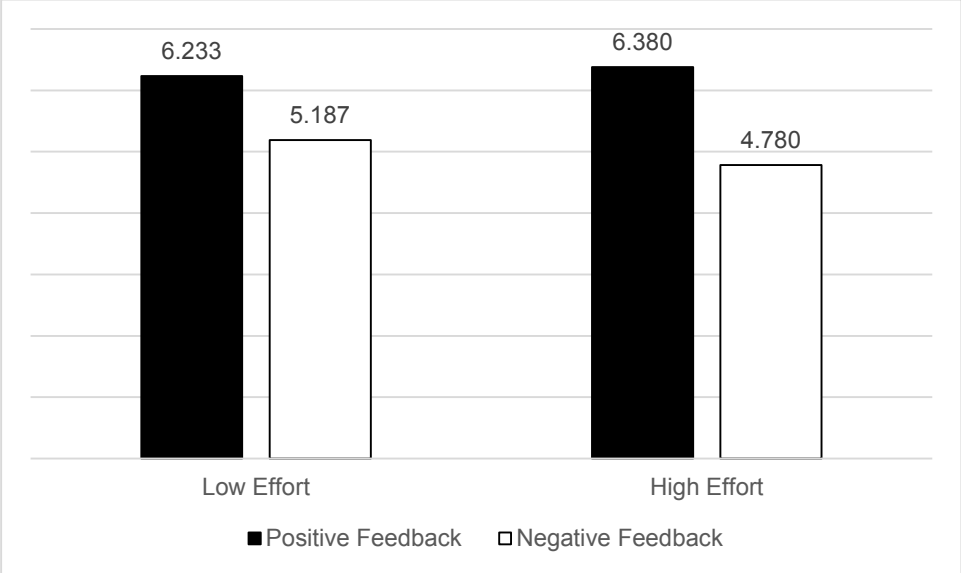
5.2 RESULTS

Manipulation Check. The manipulation check showed that participants in the low effort condition perceived that they made less effort than those in the high effort

condition. This perception was measured for the effort quantity (M_{low}=3.94; SD=1.765; M_{high}=6.18; SD=1.100; t=-15.378; p=0.000), time (M_{low}=4.19; SD=1.715; M_{high}=6.15; SD=1.046; t=-13.923; p=0.000) and hard work (M_{low}=3.80; SD=1.864; M_{high}=6.2; SD=1.1140; t=-15.644; p=0.000)**.** Similarly, the manipulation check found that those who read a positive sentence perceived the feedback as more positive than those who read a negative sentence ($M_{positive}$=1.33; SD=.571; $M_{negative}$=6.28; SD=.791; t=-72.538; p=0.000).

Results. An ANOVA using effort and feedback as predictor factors, and ***"****Likely to reach the goal"*, as a dependent variable revealed only the main effect of feedback on engagement (F (1, 398)=87.508, p=.000; ηp2=.18) and a significant interaction between effort and feedback (F (1, 398)=3.829, p=.051; ηp2=.001). Pairwise comparisons demonstrated a difference in the negative feedback condition; those who perceived low effort engaged more them those who perceived high effort (M_{low}=5.187; SD=1.591; M_{high}=4.780; SD=1.807; p=0.048). There was no significant effect in the positive valence (M_{low}=6.233; SD=1.156; M_{high}=6.380; SD=1.011; p=0.452), as demonstrated in Figure 2. These results confirm H1b and offer partial support for H1c because tests only the certainty condition. The results show that in the low effort conditions those who received positive feedback engaged more than those who received negative feedback ($M_{positive}$=6.233; SD=1.156; $M_{negative}$=5.187; SD=1.591; p=0.000), and the same was true in the high effort condition ($M_{positive}$=6.380; SD=1.011; $M_{negative}$=4.780; SD=1.807, p=0.000).

FIGURE 2 – ENGAGEMENT LEVELS (FEEDBACK x EFFORT) OF EXPERIMENT 2 RESULTS



SOURCE: Author (2021).
NOTE: Dependent variable - Likely to reach a goal.

5.2.1 Additional Analysis

The respondents perceived less goal progress in the low effort condition than in the high effort condition (M_{low}=4.58; SD=1.656; M_{high}=5.64; SD=1.351; t=-7.032; p=0.000), and all participants considered the goal difficult (M_{low}=5.02; SD=1.811; M_{high}=6.00; SD=1.321; t=-6.288; p=0.000), as proposed in the scenario. As expected, the greater the effort more people perceive as having made on advance towards a goal, and goal progress indicates it (FISHBACH; DHAR, 2005). Self-efficacy and confidence did not present the difference between effort conditions, and were not significant.

Goal difficulty presented no differences according to feedback conditions. In contrast, goal progress, self-efficacy, and confidence demonstrated differences. Individuals who read a positive sentence perceived more goal progress ($M_{positive}$=5.64; SD=1.336; $M_{negative}$=4.57; SD=1.668; t=7.157; p=0.000), and presented more self-efficacy ($M_{positive}$=6.08; SD=.943; $M_{negative}$=5.17; SD=1.397; t=7.704; p=0.000), and more confidence ($M_{positive}$=6.12; SD=.956; $M_{negative}$=4.89; SD=1.488; t=9.938; p=0.000) compared to those who read negative feedback. These results are similar to those for Experiment 1. These measures present the same results in both studies and therefore are not considered confounds. As result, they will not be part of future studies.

Internal and external attribution presented no difference between feedback conditions. Because I did not find consistency in attribution measures in the two studies (Experiments 1 and 2), it will not be part of future studies.

5.3 DISCUSSION

The main objective of this second study was to provide support for Hypotheses 1b and 1c under the certainty condition. The results demonstrated that negative feedback when low effort was made is more effective than when high effort was made, when participants perceived the goal as attainable. I thus confirm H1b. This result is interesting because previous authors have suggested that increasing effort intensifies engagement in goal pursuit (ZHANG et al., 2011). On the other hand, when individuals realize that they can achieve a goal (LEE; KEIL; WONG, 2015), certainty probably increases the effort effect on engagement, or it helps people to confirm the goal

attainability (ZHANG et al., 2011). Certainty thus boosts engagement as a small amount of effort becomes more effective.

Positive feedback is also more effective in the early stage of goal pursuit than negative, because it causes higher levels of commitment (LOURO; PIETERS; ZEELENBER, 2007; FISHBACH; EYAL; FINKELSTEIN, 2010). I propose that positive feedback causes engagement at the same levels between the goal attainability and effort conditions. I thus find support for H1c in the certainty scenario. This complements the Experiment 1 results, which offered support under uncertainty.

One limitation of this study was that it explored only the certainty condition. In the next experiment, I propose a task under certainty and uncertainty conditions, manipulated in the same study to test these hypotheses. It aims to replicate the findings and confirm H1a, H1b, and H1c.

Similar to Experiment 1, the results were only on the dependent variable *“Likely to reach a goal”*. In the next experiment, participants will perform a task, and I expect a result on two dependent variables proposed.

6 EXPERIMENT 3

This study objective was to confirm H1a, H1b, and H1c, to complement previous findings. The first and second experiments are manipulated in a scenario. Hence, a task was proposed where participants made an effective effort. The task proposed was a word search (MANTOVANI; ANDRADE; PRADO, 2018). I manipulated low and high effort in the same task. It would be interrupted because the goal is in the early stage, and I then manipulated feedback equal to previous studies. I added a goal attainability manipulation in the same study, since the previous studies made these measures separately. The objective was to verify whether there is the same participant's behavior even if people do another task, under certainty and uncertainty conditions. After effort, feedback, and goal attainability manipulations, I maintained the same dependent variables. I also included motivation measures such as commitment, persistence, and interest.

6.1 METHOD

Participants and design. The total number of respondents was 262 in MTurk, but 1 participant hit the study objective. The task could have 18 hits in total and five people hit more than nine items, that is, they passed the early stage of goal pursuit. Finally, 24 individuals were withdrawn for not adhering to effort manipulation. The final sample was 232 people (47.4% female, mean age=38.5), who responded to the experiment in exchange for a payment. A 2 (effort: low x high) x 2 (feedback: positive x negative) x 2 (goal attainability: certainty x uncertainty) between-subjects design was employed. The respondents were randomly assigned to the effort, feedback, and goal attainability conditions.

Procedure. Respondents read some instructions and were randomly assigned to effort conditions. The proposed task was a word search, and the manipulation was adapted from Mantovani, Andrade, and Prado (2018). Participants read a text about a task that required individual skills. The goal was to find as many words as possible in a puzzle (APPENDIX 3). People read instructions about the word search, and were warned of a possible task interruption in order to receive feedback. The difference between low and high effort conditions was that in the high effort condition the word search had a smaller font and the background was grey, that is, there was poor

contrast between font color and background (LALA; CHAKRABORTY, 2015). The task was the same: the difficulty was equivalent, but the lack of contrast between the font and the background color required more effort from the respondents. After effort manipulation, people received a message saying that the result had been sent to a specialist and were asked to respond to a question about their performance. After this question, people received positive or negative feedback, as follows: *"**You did great! Congratulations!**"* or "***You did poorly! Be careful!**"* Respondents were then exposed to an attainability manipulation. In the certainty condition people read the following phrase: *"If you continue like this, **you will find** all the words and **will reach** the proposed goal",* and in the uncertainty condition *"If you continue like this, **maybe you will find** all the words and **maybe will reach** the proposed goal"*. The same dependent variables were measured. Manipulations checks were then measured, such as effort, feedback, goal progress, goal attainability, and goal difficulty. I added motivation measures that had been used in goal studies such as commitment, persistence, and interest (SENKO; HARACKIEWICZ, 2005; YANG; STAMATOGIANNAKIS; CHATTOPADHYAY, 2015). Finally, there were demographic questions and a question about the research purpose.

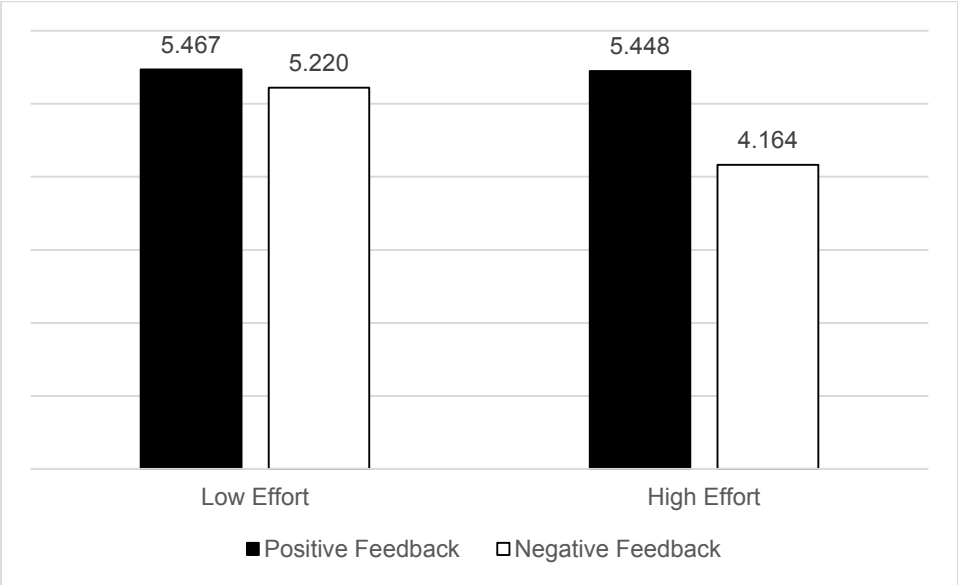
6.2 RESULTS

Manipulation Check. As expected, the participants in the low effort condition perceived that they had made less effort than those who were in the high effort condition. This perception was measured regarding effort quantity (M_{low}=5.10; SD=1.440; M_{high}=5.44; SD=1.447; t=-1.785; p=0.076), time (M_{low}=4.06; SD=1.504; M_{high}=4.86; SD=1.693; t=-3.775; p=0.000) and hard work (M_{low}=5.38; SD=1.306; M_{high}=5.7; SD=1.162; t=-1.994; p=0.047). The manipulation check also found that those who receive positive feedback perceived it as more positive than those who received negative feedback ($M_{positive}$=6.22; SD=1.090; $M_{negative}$=3.75; SD=2.192; t=11.136; p=0.000). Goal attainability showed differences between the individuals that received the uncertainty vs. certainty manipulation, but this was marginally significant ($M_{uncertainty}$=4.99; SD=1.739; $M_{certainty}$=5.37; SD=1.518; t=-1.743; p=0.083).

Results. I performed an ANOVA using effort, feedback, and goal attainability as predictor factors, and ***"**Likely to reach the goal"*, as a dependent variable**.** The results demonstrate the direct effect of feedback, effort, and goal attainability on

engagement. The main effect was that of feedback on engagement (F (1, 224)=14.662, p=.000; ηp2=.061), as well as the effect of effort (F (1, 224)=8.021, p=.005; ηp2=.035), and goal attainability (F (1, 224)=12.043, p=.001; ηp2=.051). I did not find interaction between effort, feedback, and attainability conditions, however, the results revealed an interaction between the effort and feedback conditions (F (1, 224)=5.347, p=.022; ηp2=.023). In the negative feedback condition, those who perceived low effort engaged more than those who perceived high effort (M_{low}=5.220; SD=1.657; M_{high}=4.164; SD=1.803, p=0.001). No significant difference between effort conditions was found in the positive feedback condition (M_{low}=5.467; SD=1.371; M_{high}=5.448; SD=1.520, p=0.701). Pairwise comparisons show that within the high effort conditions those who received positive feedback engaged more than those who received negative feedback, ($M_{positive}$=5.448; SD=1.520; $M_{negative}$=4.164; SD=1.803, p=0.000), and the effect was not significant within the low effort condition ($M_{positive}$=5.467; SD=1.371; $M_{negative}$=5.220; SD=1.657, p=0.299). The results of the interaction between the effort and feedback conditions only are presented in Figure 3.

FIGURE 3 – ENGAGEMENT LEVELS (FEEDBACK x EFFORT) OF EXPERIMENT 3 RESULTS



SOURCE: Author (2021).
NOTE: Dependent variable - Likely to reach a goal.

6.2.1 Additional Analysis

Goal progress presented no difference between effort, feedback, and attainability conditions, and was not significant. Goal difficulty presented difference only between feedback conditions, where those who received positive feedback

perceived that the goal was more difficult than those who received negative feedback ($M_{positive}$=4.35; SD=1.753; $M_{negative}$=3.82; SD=1.818; t=2.277; p=0.024). This result was unexpected, as I considered the goal difficult for both groups.

The perception that the goal was attainable showed a difference in mean only among individuals who received positive vs. negative feedback, that is, those who received positive feedback perceived that the goal was more attainable than those who received negative feedback ($M_{positive}$=5.54; SD=1.402; $M_{negative}$=4.88; SD=1.714; t=3.262; p=0.001). These results as expected, as individuals generally engage in goals it is possible to finish (LOCKE; LATHAM, 1990).

I measured commitment, persistence, and interest. These three measures did not present differences between effort and feedback conditions, only between goal attainability groups. Individuals in the uncertainty condition committed ($M_{uncertainty}$=5.26; SD=1.527; $M_{certainty}$=5.57; SD=1.345; t=-1.680; p=0.094), persist ($M_{uncertainty}$=5.29; SD=1.509; $M_{certainty}$=5.69; SD=1.366; t=-2.096; p=0.037), and presented less interest ($M_{uncertainty}$=5.19; SD=1.737; $M_{certainty}$=5.63; SD=1.489; t=-2.102; p=0.037) than those in the certainty condition. However considering that the manipulation check between certainty and uncertainty condition was marginally significant (p=0.083), these results may have influenced the results.

Lastly, I asked participants about their performance after effort manipulation. This measure aims to understand whether those who made less effort had a good perception of performance compared to those who made more effort (1= Extremely bad to 7= Extremely good). As expected, I found a difference between conditions (M_{low}=4.07; SD=1.733; M_{high}=3.65; SD=1.867; t=1.792; p=0.075), but was marginally significant.

6.3 DISCUSSION

This study aimed to test Hypotheses H1a, H1b, and H1c. The objective was to reinforce the two previous studies.

I did not find support for H1a and H1b. This experiment involved goal attainability manipulation (certainty vs. uncertainty), but the difference between these conditions was marginally significant (p=0.083). Additionally, the means were higher than 4, that is, even in the uncertain condition, people reported that the goal had some

certainty. This may have influenced the results. I did not find, for example, a triple interaction between effort, feedback, and goal attainability.

Negative feedback engages more with low effort than high effort, and the findings are similar to those for the certainty scenario, when Study 2 analyzed the interaction between effort and feedback. One explanation for these results is that manipulating goal attainability with high averages close to certainty condition. The result may thus be altered, as those who read the uncertainty manipulation behaved similarly to those in the certainty scenario. The presence of goal attainability did cause the effect, however, because people are committed to goal pursuit if the goal is attainable (LOCKE; LATHAM, 1990). The difference between certainty and uncertainty should also be highlighted, because difficult perceptions of goal attainment decrease engagement, although people first seek to confirm whether a goal can be attained (ZHANG et al., 2011).

I found some evidence to support H1c. Positive feedback is stable between effort conditions, however, I only analyzed this in the interaction between effort and feedback.

This study has three limitations. First, effort manipulation demonstrated a difference significant in the measures of time and hard work. It was marginally significant when the effort quantity measure was analyzed. The task was generic, and in the next study I proposed a marketing problem. Second, the goal attainability manipulation was also marginally significant. The goal attainability condition should be investigated in the next study, I propose more contrast in the manipulation. Third, the results are only on the dependent variable *“Likely to reach a goal”*, even I manipulated a task. I expected some findings on the dependent variable *“Likely to continue working on this goal”*, however, the marginally significant effort quantity measure maybe confuse an interpretation of how much individuals worked on the task.

When I manipulated the word search, the difference between low and high effort conditions was the font size and background color (LALA; CHAKRABORTY, 2015). This may be caused by disfluency. In order that there is no difficulty in information fluency, I will not differentiate the conditions in this way in the next experiments.

In the next study, I propose a marketing problem, and more contrast between the goal attainability conditions in the manipulation to test H1a, H1b, and H1c.

7 EXPERIMENT 4

This study aimed to replicate previous studies and test H1a, H1b, and H1c. I maintained one task, but now I proposed a script describing a marketing problem. I simulated a reward program and participants making effort to earn points in this program. I proposed a crossword game with a supermarket theme. I showed a card with progress information (KOO; FISHBACH, 2012). The objective was to guarantee that individuals understand they were in the early stage of goal pursuit. Similar to previous studies, participants received negative or positive feedback after being interrupted when they were undertaking a crossword game. In this case, I added information about whether respondents would earn points or not. Individuals were then exposed to a goal attainability manipulation with more contrast than in Experiment 3. Lastly, I maintained the same dependent variables and manipulation checks.

7.1 METHOD

Participants and design. The number of respondents was 384 in MTurk, but 36 participants were withdrawn because they did not get the attention question right. Forty-four respondents did not adhere to attainability manipulation and 27 did not adhere to effort manipulation. The final sample was 277 (55.2% male, mean age=33.4). The experiment employed a design 2 (effort: low x high) x 2 (feedback: positive x negative) x 2 (goal attainability: certainty x uncertainty) between-subjects design.

Procedure. I proposed a marketing problem (APPENDIX 4). The goal was to achieve 1,000 points in one reward program. First, participants read some instructions: *"Suppose that on the first purchase at one supermarket, you agreed to participate in one reward program. In this program, for every 1,000 points, you can exchange for a $50 in-app purchase. This voucher is valid only for purchases in the supermarket app. Your goal is to reach 1,000 points. To achieve it, you will start participating in the promotion as follows: all participants who register for the program this month will earn 100 points; those who perform well in one game will earn more than 100 points."* They then read the following sentence: "*Suppose that you signed up for the reward program. The supermarket returned the following message: Thank you, welcome to the reward program. You earned 100 points. To earn more than 100 points, start the game"*, and

they were shown a loyalty card with 10 spaces, one filled by 100 points adapted from Koo and Fishbach (2012). Next, they read instructions about the crossword game with a supermarket theme. In the low effort condition, there were seven words and the time give to resolve the task was 1 minute and 30 seconds. In the high effort condition, there were fourteen words and the time given was three minutes. This maximum time is necessary in order to interrupt the respondents when they are doing the task, similar to the previous study. Next, respondents receive feedback. In the positive condition, they read the following sentence: *"*You did great! Congratulations! ***You earned 100 points****!"* and in negative feedback: *"You did poorly! Be careful!* ***You did not earn 100 points!****"* They were then exposed to the attainability manipulation. In the certainty condition, respondents read the following text: *"From the analysis of your profile, our system has verified that* ***you will reach the goal*** *of 1,000 points. That is,* ***you will be able*** *to achieve 1,000 points and* ***will reach*** *the proposed goal."*, and in the uncertainty condition: *"From the analysis of your profile, our system has verified that you* ***maybe will reach the goal*** *of 1,000 points. That is****, maybe you will be able*** *to achieve 1,000 points and* ***maybe will reach*** *the proposed goal."*. Lastly, the same dependent variables, manipulation checks, and demographic questions were measured, equal to previous studies.

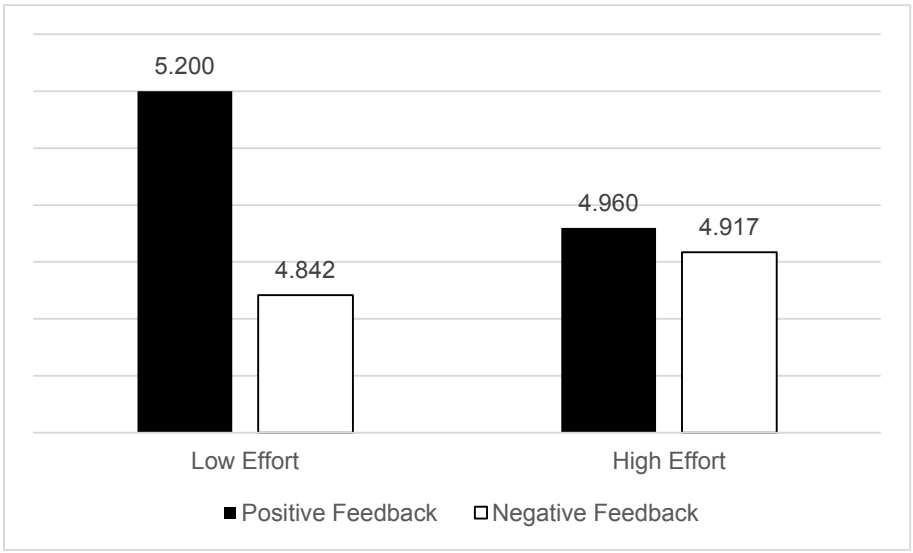
7.2 RESULTS

Manipulation Check. The results demonstrated that individuals in the low effort condition perceived that they made less effort than those in the high effort condition. I measured effort quantity (M_{low}=4.73; SD=1.375; M_{high}=5.29; SD=1.314; t=-3.484; p=0.001), time perception (M_{low}=4.45; SD=1.266; M_{high}=5.23; SD=1.195; t=-5.245; p=0.000) and hard work (M_{low}=4.66; SD=1.410; M_{high}=5.28; SD=1.341; t=-3.783; p=0.000). Similarly, the manipulation check showed that those who received positive feedback perceived that it was more positive than those who received negative feedback ($M_{positive}$=5.87; SD=1.184; $M_{negative}$=4.01; SD=1.880; t=9.683; p=0.000). The goal attainability manipulation check demonstrated that participants in the certainty condition perceived that the goal was more certain than those in the uncertainty condition ($M_{uncertainty}$=4.67; SD=1.375; $M_{certainty}$=5.42; SD=1.386; t=4.505; p=0.000).

Results. Again, I ran an ANOVA using effort, feedback, and goal attainability as predictor factors, and ***"Likely to continue working on this goal"***, as a dependent variable. The results revealed that the direct effect of feedback was marginally significant (*F* (1, 271)=2.975, *p*=.086; ηp2=.011) and attainability (*F* (1, 271)=9.767, *p*=.002; ηp2=.035) on engagement. The interaction between effort, feedback, and attainability conditions was also significant (*F* (1, 271)=5.005, *p*=.026; ηp2=.018).

In the uncertainty condition, respondents in the negative (*M*low=4.842; *SD*=1.779; *M*high=4.917; *SD*=1.888, *p*=0.835) and positive feedback condition (*M*low=5.200; *SD*=1.232; *M*high=4.960; *SD*=1.567, *p*=0.550) did not present a significant difference between effort conditions. Pairwise comparisons showed that within the low effort condition (*M*positive=5.200; *SD*=1.232; *M*negative=4.842; *SD*=1.779, *p*=0.320), and in the high effort condition (*M*positive=4.960; *SD*=1.567; *M*negative=4.917; *SD*=1.888, *p*=0.914), the effect is not significant. Although not significant, the results are represented in Figure 4.

FIGURE 4 – ENGAGEMENT LEVELS (FEEDBACK X EFFORT) IN UNCERTAINTY OF EXPERIMENT 4 RESULTS

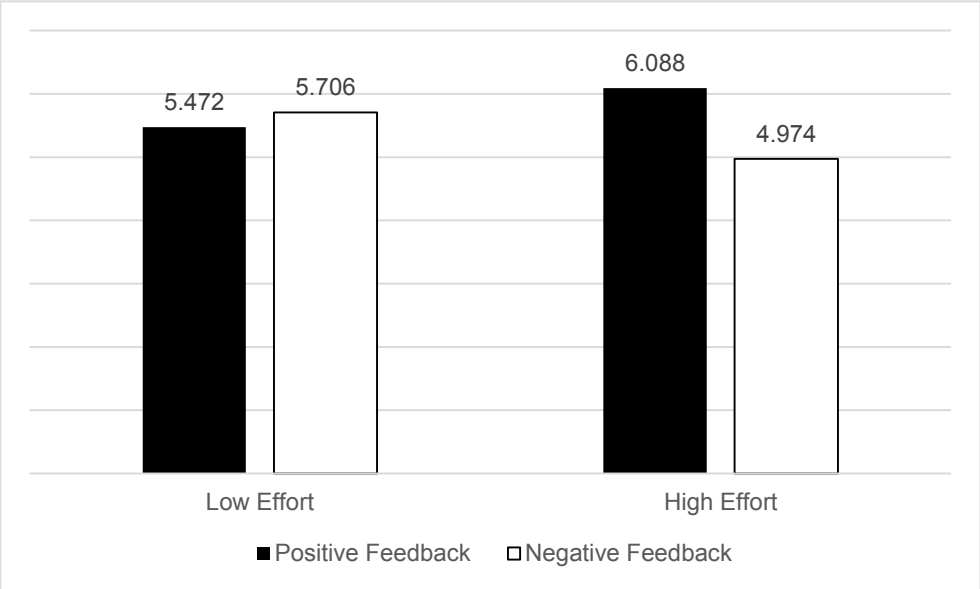


SOURCE: Author (2021).
NOTE: Dependent variable - Likely to continue working on this goal.

Under certainty, respondents in the negative feedback condition, those who perceive low effort engage more them those who perceive high effort (*M*low=5.706; *SD*=1.315; *M*high=4.974; *SD*=1.739, *p*=0.043). In the positive feedback condition, there was no difference between effort conditions (*M*low=5.472; *SD*=1.341; *M*high=6.088; *SD*=1.164, *p*=0.094) (FIGURE 5). Pairwise comparisons show that I did not find differences within the low effort condition (*M*positive=5.472; *SD*=1.341; *M*negative=5.706; *SD*=1.315) between feedback valences. In the high effort condition (*M*positive=6.088;

SD=1.164; *M*negative=4.974; *SD*=1.739, *p*=0.002), those who received positive feedback engaged more than those who received negative feedback.

FIGURE 5 – ENGAGEMENT LEVELS (FEEDBACK X EFFORT) IN CERTAINTY OF EXPERIMENT 4 RESULTS



SOURCE: Author (2021).
NOTE: Dependent variable - Likely to continue working on this goal.

7.2.1 Additional Analysis

The manipulation check reveals that those who received positive feedback perceived the goal as harder than those who received negative feedback (*M*positive=4.47; *SD*=1.546; *M*negative=3.86; *SD*=1.704; *t*=3.115; *p*=0.002). Goal difficulty did not present differences between effort and attainability conditions.

Goal attainability presented differences between feedback and attainability conditions. Those who received positive feedback perceived the goal as more attainable than those who received negative feedback (*M*positive=5.54; *SD*=1.307; *M*negative=4.76; *SD*=1.572; *t*=4.438; *p*=0.000). In the attainability conditions, under certainty, respondents perceived the goal as more attainable than those who in the uncertainty condition (*M*uncertainty=5.36; *SD*=1.376; *M*certainty=4.88; *SD*=1.594; *t*=2.665; *p*=0.008). Despite presenting differences, the averages were high and indicate that people generally engage in goals if they have a chance to achieve them (LOCKE; LATHAM, 1990).

Goal progress presented differences between effort (*M*low=4.31; *SD*=1.633; *M*high=4.75; *SD*=1.630; *t*=-2.236; *p*=0.026), feedback (*M*positive=4.71; *SD*=1.532; *M*negative=4.35; *SD*=1.723; *t*=1.796; *p*=0.074), and attainability conditions

($M_{uncertainty}$=4.31; SD=1.678; $M_{certainty}$=4.72; SD=1.590; t=2.110; p=0.036). As expected, participants those who made high effort, those who received positive feedback, and those who as exposed a certainty condition indicated more goal progress, that is, perceived that they had advanced more in goal pursuit (FISHBACH; DHAR, 2005).

Persistence and interest present differences between feedback conditions. Individuals who received positive feedback persisted ($M_{positive}$=5.38; SD=1.272; $M_{negative}$=5.08; SD=1.450; t=1.838; p=0.067) and presented more interest ($M_{positive}$=5.55; SD=1.258; $M_{negative}$=5.24; SD=1.474; t=1.817; p=0.070) than those who received negative feedback. These differences were marginally significant. When attainability conditions were analyzed, participants in the uncertainty condition committed ($M_{uncertainty}$=4.96; SD=1.362; $M_{certainty}$=5.37; SD=1.398; t=2.458; p=0.0015) and persisted ($M_{uncertainty}$=5.03; SD=1.403; $M_{certainty}$=5.41; SD=1.328; t=2.290; p=0.023) less than those in the certainty group. These results were as expected; individuals generally commit to a goal if they believe that it is attainable (LOCKE; LATHAM, 1990), and certainty increases perceptions of goal attainment and motivates people to finish a goal (ZHANG et al., 2011).

7.3 DISCUSSION

The results show an interaction between effort x feedback x attainability in the dependent variable *"Likely to continue working on this goal"*. This replicates previous results in a study that simulates a marketing situation, that is, a reward program.

I did not confirm H1a, however I found evidence that negative feedback did not make a difference compared to positive feedback during high effort under uncertainty. This result offers some evidence to support H1a because it shows that there is some engagement in the negative feedback condition.

Under certainty, as expected, after receiving negative feedback people who perceived low effort engaged more than those who perceived high effort. This replicates previous results (Study 2) and supports H1b.

Lastly, I found support for H1c in both attainability conditions. This shows that after people receive positive feedback they engage equally between effort and goal attainability conditions. This outcome also replicates previous studies, as do Experiments 1 and 2.

In summary, I found support for Hypotheses H1b and H1c in the dependent variable *“Likely to continue working on this goal”*. As expected, the results are in this variable because participants did an effective effort.

In the next study, I aim to replicate previous studies and to investigate the persistence (H2a) and goal progress (H2b) mechanisms.

8 EXPERIMENT 5

This study aimed to reinforce previous studies. The major objective was to test the proposed mechanisms: persistence (H2a) and goal progress (H2b). I propose that persistence explains the effect of effort on engagement in goal pursuit after people receive negative feedback under uncertainty. Goal progress is the mechanism that explains the same relationship between effort and engagement under certainty. A different task is proposed, in which participants make some effort. The objective is to reinforce the findings of the previous study. I manipulated a memory game (BAKER et al., 2004). Similar to previous studies I interrupted the task and gave negative or positive feedback to analyze the early stage of goal pursuit. After that, in goal attainability manipulation, I maintained more contrast between conditions, as in Experiment 4. Lastly, the same dependent variables and manipulation checks were measured.

8.1 METHOD

Participants and design. There were 499 respondents in total in MTurk, but 59 were withdrawn for not adhering to effort and 41 for not adhering to the attainability manipulation. The final sample was 399 (55.4% male, mean age=39.54). They responded to the study that employed a 2 (effort: low x high) x 2 (feedback: positive x negative) x 2 (goal attainability: certainty x uncertainty) between-subjects design.

Procedure. Respondents read some instructions and were randomly assigned to effort conditions. I proposed a memory task adapted from Baker et al. (2004), where the goal is to write as many words as possible (APPENDIX 5). The difference between low and high effort conditions is the number of words. In both conditions, people have two minutes to memorize the words. In the high effort condition, participants have three minutes to write the words while in the low condition they have 1 minute and 30 seconds. This maximum time is necessary in order to interrupt the respondents while doing their task. After effort manipulation, people received positive or negative feedback, similar to the previous study. Respondents are exposed to attainability manipulation. In the certainty condition, people read the following phase: *“A memory task requires skills. If you continue with your skills,* ***you will complete*** *the task successfully. That is,* ***you will be able*** *to memorize all the words and* ***will reach*** *the*

proposed goal.", and in the uncertainty condition *"A memory task requires skills. If you continue with your skills,* ***maybe you will complete*** *the task successfully. That is,* ***maybe you will be able*** *to memorize all the words and* ***maybe will reach*** *the proposed goal"*. The same dependent variables, manipulations checks, and demographic questions were measured.

8.2 RESULTS

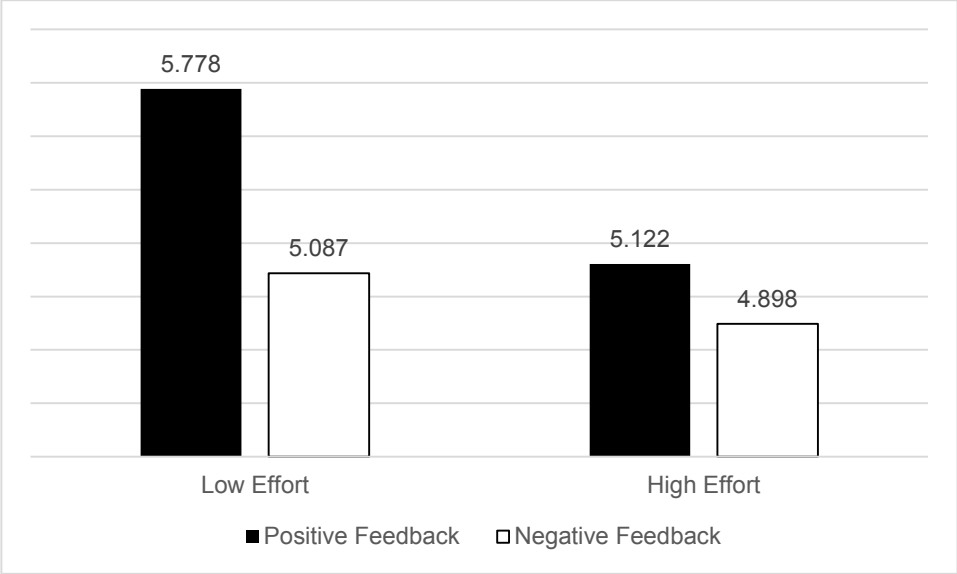
Manipulation Check. The results demonstrated that individuals in the low effort condition perceived that they made less effort than those in the high effort condition when asked about effort quantity (M_{low}=5.16; SD=1.054; M_{high}=5.47; SD=1.132; t=-2.840; p=0.005). Time perception (M_{low}=5.27; SD=1.223; M_{high}=5.44; SD=1.281; t=-1.323; p=0.187) and hard work (M_{low}=5.39; SD=1.175; M_{high}=5.47; SD=1.207; t=-.642; p=0.521) were not significant**.** Similarly, the manipulation check showed that those who received positive feedback perceived the expression as more positive than those who received the negative feedback ($M_{positive}$=5.99; SD=1.043; $M_{negative}$=4.23; SD=1.887; t=-11.494; p=0.000). Goal attainability demonstrated differences between individuals who received the uncertainty vs. certainty manipulation, where those who in the certainty condition perceived that the goal was more certain than those who were in the uncertainty condition ($M_{uncertainty}$=4.94; SD=1.246; $M_{certainty}$=5.53; SD=1.233; t=-4.785; p=0.000).

Results. An ANOVA using effort, feedback, and goal attainability as predictor factors, and *"Likely to reach the goal"*, as a dependent variable, shows the direct effect of feedback (F (1, 393)= 12.018, p=.001; ηp2=.030) and effort (F (1, 393)= 4.403, p=.037; ηp2=.011) on engagement. The results show an interaction between effort, feedback, and attainability conditions (F (1, 393)= 3.858, p=.050; ηp2=.010).

Under uncertainty, respondents in the negative feedback condition did not present a significant difference between effort conditions (M_{low}=5.087; SD=1.279; M_{high}=4.6898; SD=1.709, p=0.522). With positive feedback, those who perceived low effort engaged more than those who perceived high effort (M_{low}=5.778; SD=1.198; M_{high}=5.122; SD=1.603, p=0.047). These results are unexpected. Under an uncertainty condition, it was expected that after receiving negative feedback, people who made stronger effort would engage more than those who made less effort in goal pursuit. This did not occur. I did not find a difference between conditions and did not

find support for H1a. Similarly, I found a difference in positive feedback and did not confirm H1c. Pairwise comparisons within in the low condition show differences between feedback valences ($M_{positive}$=5.778; SD=1.198; $M_{negative}$=5.087; SD=1.279, p=0.039). In the high effort condition the effect was not significant ($M_{positive}$=5.122; SD=1.603; $M_{negative}$=4.898; SD=1.709, p=0.439). These results are presented in Figure 6.

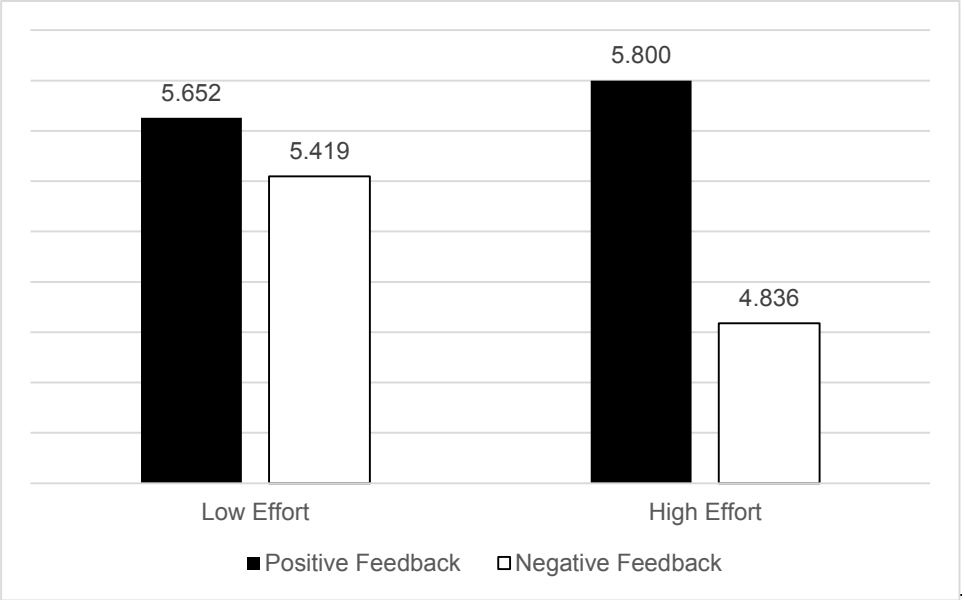
FIGURE 6 – ENGAGEMENT LEVELS (FEEDBACK x EFFORT) IN UNCERTAINTY OF EXPERIMENT 5 RESULTS



SOURCE: Author (2021).
NOTE: Dependent variable - Likely to reach a goal.

Under certainty, and in the negative feedback condition, those who perceived low effort engaged more than those who perceived high effort (M_{low}=5.419; SD=1.500; M_{high}=4.838; SD=1.970, p=0.057). In the positive feedback condition there was no significant difference between effort conditions (M_{low}=5.652; SD=1.178; M_{high}=5.800; SD=1.214, p=0.609) (FIGURE 7). The results confirm H1b. After receiving negative feedback, people who make less effort will engage more than those who make more effort in goal pursuit. Similarly, I confirm H1c, that is, after receiving positive feedback, people who had previously invested a low or high amount of effort engaged equally in goal pursuit in certainty. Pairwise comparisons show that within the high effort condition those who received positive feedback engaged more than those who received negative feedback ($M_{positive}$=5.800; SD=1.214; $M_{negative}$=4.838; SD=1.970, p=0.000), and within the low effort the effect was not significant ($M_{positive}$=5.652; SD=1.178; $M_{negative}$=5.419; SD=1.500, p=0.463).

FIGURE 7 – ENGAGEMENT LEVELS (FEEDBACK x EFFORT) IN CERTAINTY OF EXPERIMENT 5 RESULTS



SOURCE: Author (2021).
NOTE: Dependent variable - Likely to reach a goal.

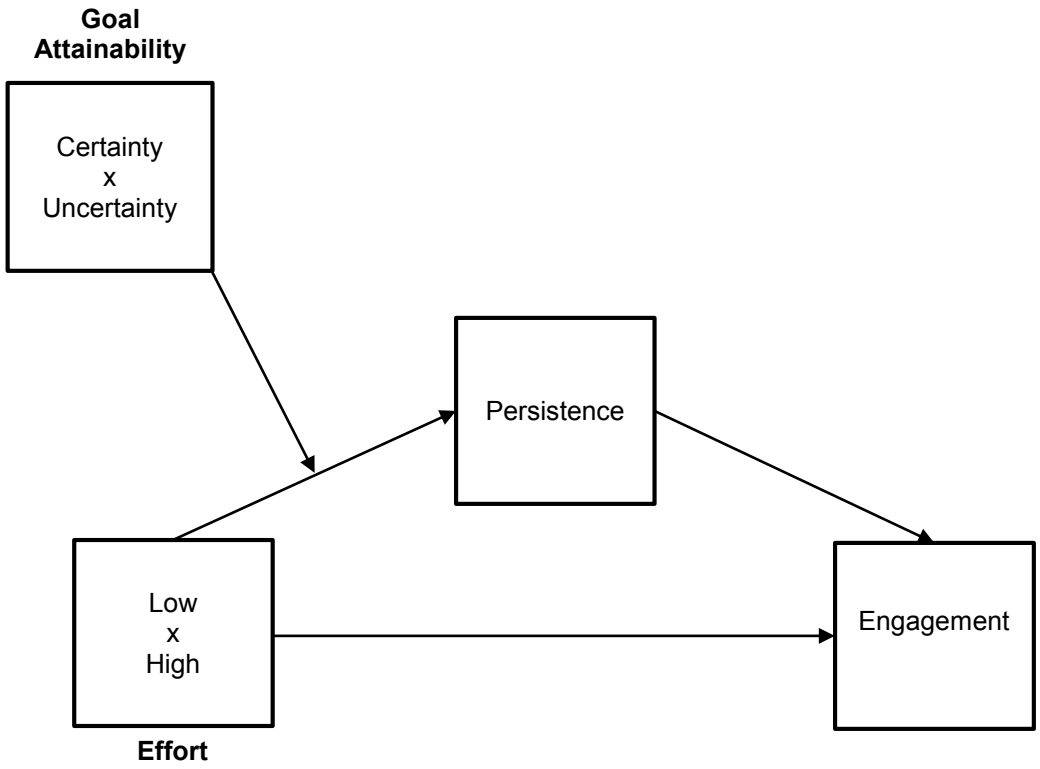
The outcome demonstrates that people engage more in negative feedback under certainty and low effort (H1b), and that uncertainty is a high effort condition that causes more engagement. Although I did not find a difference between those who received negative feedback in the different effort conditions, I did not confirm (H1a): if I compare positive and negative feedback in the high effort condition there is no difference between them. I argue that in these conditions the negative feedback works as positive feedback. I found partial support for H1c under certainty, however, positive feedback generally engaged more than negative feedback under both attainability conditions. This corroborates the literature, which demonstrates that positive feedback is effective at the early stage of goal pursuit (FISHBACH; EYAL; FINKELSTEIN, 2010).

In order to explore the mechanisms explaining the results in the negative feedback condition, I proposed that the moderation between effort x attainability is mediated. The mediator in the uncertainty condition is persistence, and in the certainty condition it is goal progress. I considered only negative feedback (n=203) and ran a moderated mediation analysis (model 7; 5.000; HAYES, 2018). The independent variable was effort, the dependent variable was engagement, goal attainability was a moderator, and persistence/goal progress was the mediator.

Persistence as a mediator. The moderated mediation is significant (*Index* = -0.3482, *SE* = 0.1734, 95% CI [-0.7711, -0.0683]). I found an indirect effect of effort on engagement under uncertainty, that is, persistence has a mediator effect of effort on

engagement (*Effect* = 0.2220, *SE* = 0.1185, 95% CI [0.0276, 0.4967]), but not in the certainty condition (*Effect* = -0.1263, *SE* = 0.1160, 95% CI [-0.4040, 0.0708]). These results confirm H2a, and the graphic model is represented in Figure 8. The direct effect is not significant (*Effect* = -0.4325, *SE* = 0.2209, *p* = 0.051, 95% CI [-0.8682, 0.0031]). I even found an effect of effort on persistence (*Effect* = 1.2948, *SE* = 0.5561, *p* = 0.02, 95% CI [0.1981, 2.3915]), an effect of goal attainability on persistence (*Effect* = 1.4308, *SE* = 0.5823, *p* = 0.01, 95% CI [0.2824, 2.5791]), an interaction between effort and goal attainability (*Effect* = -0.7907, *SE* = 0.3554, *p* = 0.02, 95% CI [-1.4916, -0.0899]), and an effect of persistence on engagement (*Effect* = 0.4404, *SE* = 0.0868, *p* = 0.00, 95% CI [0.2693, 0.6115]).

FIGURE 8 – GRAPHIC MODEL PERSISTENCE AS A MEDIATOR

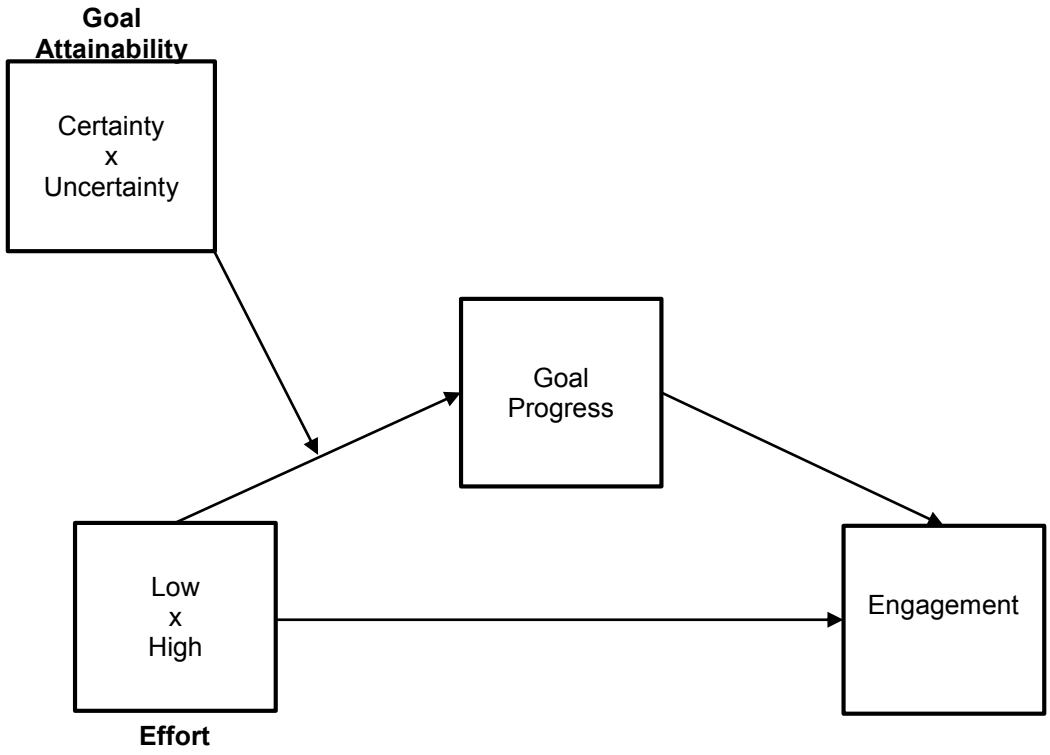


SOURCE: Author (2021).
NOTE: Dependent variable - Likely to reach a goal.

Goal progress as a mediator. The results show that the moderated mediation is significant (*Index* = -0.4612, *SE* = 0.2304, 95% CI [-0.9609, -0.0342]). I found an indirect effect of effort on engagement under the certainty condition, that is, goal progress has a mediator effect of effort on engagement (*Effect* = -0.3096, *SE* = 0.1721, 95% CI [-0.6683, -0.0033]), but not under uncertainty (*Effect* = 0.1516, *SE* = 0.1541, 95% CI [-0.1588, 0.4503]). These results confirm H2b (FIGURE 9). The direct effect is

not significant (*Effect* = -0.3075, *SE* = 0.2051, *p* = 0.13, 95% CI [-0.7119, 0.0968]). I found an effect of goal attainability on goal progress (*Effect* = 1.5452, *SE* = 0.6537, *p* = 0.01, 95% CI [0.2561, 2.8344]), an interaction between effort and goal attainability (*Effect* = -0.8162, *SE* = 0.3990, *p* = 0.04, 95% CI [-1.6030, -0.0295]), and an effect of goal progress on engagement (*Effect* = 0.5650, *SE* = 0.0718, *p* = 0.00, 95% CI [0.4235, 0.7065]).

FIGURE 9 – GRAPHIC MODEL GOAL PROGRESS AS A MEDIATOR



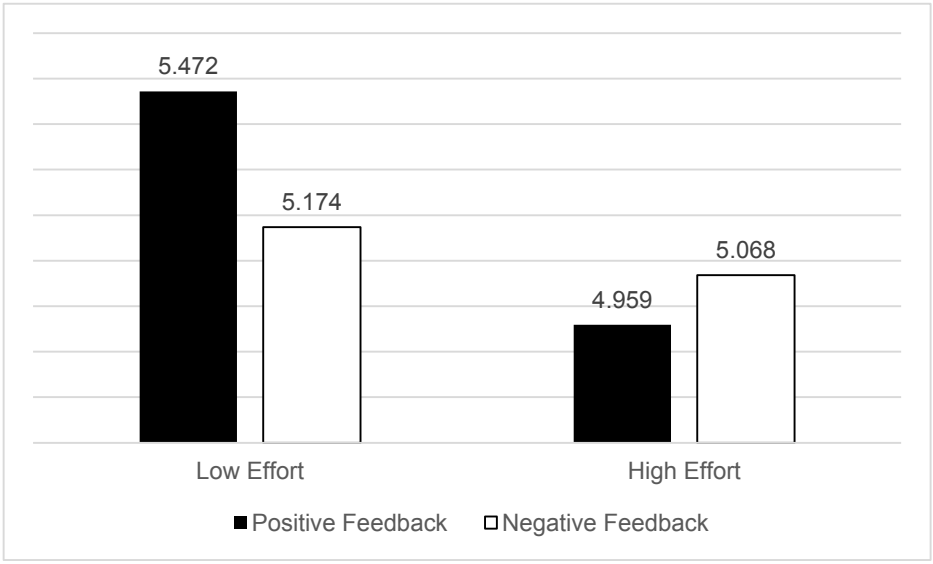
SOURCE: Author (2021).
NOTE: Dependent variable - Likely to reach a goal.

I also ran an ANOVA using effort, feedback, and goal attainability as predictor factors. The difference was a dependent variable "*Likely to continue working on this goal"*. The results show only the direct effect of attainability (*F* (1, 393)=4.387, *p*=.037; ηp2=.011) on engagement. I found a significant interaction between effort, and attainability conditions (*F* (1, 393)=5.504, *p*=.019; ηp2=.014), and an interaction between the effort, feedback, and attainability conditions (*F* (1, 393)=3.804, *p*=.052; ηp2=.010).

Under the uncertainty condition, respondents in the negative (M_{low}=5.174; *SD*=1.450; M_{high}=5.068; *SD*=1.552, *p*=0.703) and positive feedback condition (M_{low}=5.472; *SD*=1.082; M_{high}=4.959; *SD*=1.306, *p*=0.099) did not present a

significant difference between effort conditions. These results do not confirm H1a. It was expected that after receiving negative feedback, people would engage more in high than low effort in uncertainty, however, I found support for H1c under uncertainty. Pairwise comparisons show that the effect is not significant within in the low effort condition ($M_{positive}$=5.472; SD=1.082; $M_{negative}$=5.174; SD=1.450, p=0.344), and in the high effort ($M_{positive}$=4.959; SD=1.306; $M_{negative}$=5.068; SD=1.552, p=0.691) (FIGURE 10).

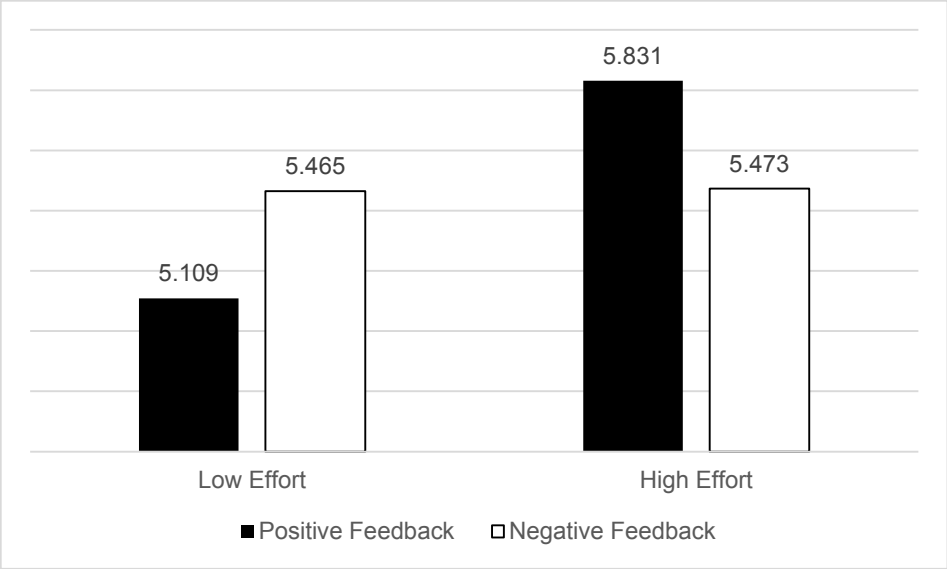
FIGURE 10 – ENGAGEMENT LEVELS (FEEDBACK X EFFORT) IN UNCERTAINTY OF EXPERIMENT 5 RESULTS



SOURCE: Author (2021).
NOTE: Dependent variable - Likely to continue working on this goal.

In the certainty condition, respondents in the negative feedback condition did not present a difference between effort conditions (M_{low}=5.465; SD=1.297; M_{high}=5.473; SD=1.476, p=0.979). In the positive feedback condition, those who perceived high effort engaged more than those who perceived low effort (M_{low}=5.109; SD=1.567; M_{high}=5.831; SD=1.398, p=0.008) (FIGURE 11). The results did not confirm H1b. I found a difference in positive feedback between effort conditions and did not confirm H1c either. Pairwise comparisons show that within the low effort ($M_{positive}$=5.109; SD=1.567; $M_{negative}$=5.465; SD=1.297, p=0.235) and high effort conditions ($M_{positive}$=5.831; SD=1.398; $M_{negative}$=5.473; SD=1.476, p=0.168) the effect is not significant.

FIGURE 11 – ENGAGEMENT LEVELS (FEEDBACK X EFFORT) IN CERTAINTY OF EXPERIMENT 5 RESULTS



SOURCE: Author (2021).
NOTE: Dependent variable - Likely to continue working on this goal.

The results show an interaction between effort x feedback x attainability in the dependent variable "*Likely to continue working on this goal"*, however, I did not find differences between feedback valences in uncertainty. The same as true in effort conditions. I did not confirm H1a and found only support for H1c. That is, after people receive negative feedback they engage equally between effort conditions, I predict that those who make high effort will engage more compared to those who make low effort. In the positive feedback condition, people engaged equally in both effort conditions (H1c). Under certainty, only positive feedback presented in more engagement with high effort compared to low effort. This did not support H1c in certainty.

These results are unexpected because negative feedback engages similarly in goal attainability conditions. I did not find a difference, and thus did not confirm H1a and H1b. However, negative feedback works as positive feedback. I did not find differences between negative and positive feedback in either attainability condition. In certainty and low effort, negative and positive feedback engages equally. Similarly, in the uncertainty and high effort conditions, negative and positive feedback did not present a difference.

I ran a moderation between effort x attainability is mediated (Model 7 – Hayes). I found that the mediator in the uncertainty condition was persistence and in the certainty condition it is goal progress. Other mechanisms were not significant, such as commitment, interest, self-efficacy, and goal difficulty.

Persistence as a mediator. The results show a significant moderated mediation (*Index* = -0.4750, *SE* = 0.2266, 95% CI [-0.9843, -0.0898]). I found that effort had an indirect effect on engagement under uncertainty, that is, persistence has a mediator effect between effort on engagement (*Effect* = 0.3028, *SE* = 0.1603, 95% CI [0.0282, 0.6717]), but not in the certain condition (*Effect* = -0.1722, *SE* = 0.1515, 95% CI [-0.5026, 0.1018]). These results confirm H2a and replicate the previous findings in the dependent variable "*Likely to reach a goal".* The direct effect is again not significant (*Effect* = -0.1248, *SE* = 0.1770, *p* = 0.48, 95% CI [-0.4739, 0.2243]). I also found an effect of effort on persistence (*Effect* = 1.2948, *SE* = 0.5561, *p* = 0.02, 95% CI [0.1981, 2.3915]), an effect of goal attainability on persistence (*Effect* = 1.4308, *SE* = 0.5823, *p* = 0.01, 95% CI [0.2824, 2.5791]), an interaction between effort and goal attainability (*Effect* = -0.7907, *SE* = 0.3554, *p* = 0.02, 95% CI [-1.4916, -0.0899]), and an effect of persistence on engagement (*Effect* = 0.6007, *SE* = 0.0695, *p* = 0.00, 95% CI [0.4637, 0.7378]).

Goal progress as a mediator. The results replicate previous findings in the dependent variable "*Likely to reach a goal"*. The moderated mediation is also significant (*Index* = -0.3506, *SE* = 0.1972, 95% CI [-0.8187, -0.0281]). I found an indirect effect of effort on engagement under the certain condition, that is, goal progress has a mediator effect between effort on engagement (*Effect* = -0.2354, *SE* = 0.1397, 95% CI [-0.5470, -0.0002]), but not under uncertainty (*Effect* = 0.1152, *SE* = 0.1230, 95% CI [-0.0954, 0.4014]). I found support for H2b. The direct effect is not significant (*Effect* = 0.0027, *SE* = 0.1884, *p* = 0.98, 95% CI [-0.3688, 0.3742]). I found an effect of goal attainability on goal progress (*Effect* = 1.5452, *SE* = 0.6537, *p* = 0.01, 95% CI [0.2561, 2.8344]), an interaction between effort and goal attainability (*Effect* = -0.8162, *SE* = 0.3990, *p* = 0.04, 95% CI [-1.6030, -0.0295]), and an effect of goal progress on engagement (*Effect* = 0.4295, *SE* = 0.0659, *p* = 0.00, 95% CI [0.2995, 0.5595]).

8.2.1 Additional Analysis

The perception that the goal is attainable revealed a difference in mean among individuals in the feedback and attainability conditions, that is, those who received positive feedback perceived the goal as more attainable than those who received negative feedback ($M_{positive}$=5.54; *SD*=1.314; $M_{negative}$=5.15; *SD*=1.462; *t*=-2.785;

p=0.006). Similarly, in the certainty condition, people perceived the goal as more attainable than those in the uncertainty condition ($M_{uncertainty}$=5.14; *SD*=1.456; $M_{certainty}$=5.52; *SD*=1.330; *t*=-2.758; *p*=0.006). These results are similar to those of Experiment 4.

Goal progress demonstrated differences between feedback ($M_{positive}$=5.38; *SD*=1.146; $M_{negative}$=5.06; *SD*=1.421; *t*=-2.420; *p*=0.016) and attainability conditions ($M_{uncertainty}$=5.03; *SD*=1.280; $M_{certainty}$=5.39; *SD*=1.300; *t*=-2.751; *p*=0.006). Goal progress indicated how people advance when pursuing a goal (FISHBACH; DHAR, 2005), and positive feedback and certainty demonstrate this advance. Goal difficulty presents a difference between feedback ($M_{positive}$=4.71; *SD*=1.695; $M_{negative}$=4.33; *SD*=1.717; *t*=-2.190; *p*=0.029) and attainability conditions ($M_{uncertainty}$=4.34; *SD*=1.682; $M_{certainty}$=4.68; *SD*=1.731; *t*=-1.970; *p*=0.05), however the means are great than 4, and indicate that individuals consider the goal difficult.

I measured commitment, persistence, and interest. These three measures presented differences only between the goal attainability conditions. Participants in the uncertainty condition committed ($M_{uncertainty}$=5.38; *SD*=1.174; $M_{certainty}$=5.63; *SD*=1.268; *t*=-2.058; *p*=0.04), persisted ($M_{uncertainty}$=5.33; *SD*=1.269; $M_{certainty}$=5.64; *SD*=1.252; *t*=-2.409; *p*=0.016), and presented less interest ($M_{uncertainty}$=5.36; *SD*=1.263; $M_{certainty}$=5.63; *SD*=1.242; *t*=-2.142; *p*=0.033) than those in the certainty group. This results are expected and are similar to those of Experiment 4.

8.3 DISCUSSION

The results show a significant interaction between effort x feedback x goal attainability in both dependent variables. In the dependent variable "*Likely to reach a goal",* under certainty, in the low effort condition, those who made low effort and received negative feedback engaged more than those who made high effort. These results support H1b. Still, those who received feedback positive engaged equally between effort conditions. This confirms H1c. Instead, under uncertainty, in the high effort condition, there were no differences between the negative and positive feedback conditions. This shows that in some situations negative feedback works as positive. Similarly, this effect appeared when I analyzed the results in the dependent variable "*Likely to continue working on this goal*".

In the dependent variable "*Likely to continue working on this goal"*, I did not find support for H1a, H1b, and H1c, however, there was no difference between those who received negative and positive feedback in the effort conditions. Therefore, I argue that in some situations negative feedback works as positive feedback in the early stage of goal pursuit. That is, negative feedback could be effective in the early stage. This is confirmed when I propose the mediators. There is an effect between effort and engagement through the mediators after people receive negative feedback (H2a and H2b).

Considering only negative feedback I explored two mediators that explained why people engaged differently under certainty and uncertainty conditions. The results are similar in both dependent variables. In the uncertainty condition, persistence is a mediator. Under certainty, the mediator is goal progress. These findings confirm H2a and H2b. Even more, they show that people engage after receiving negative feedback at the early stage of goal pursuit, and reinforce previous findings.

A limitation of Experiment 5 involves the effort manipulation. I found a difference between effort conditions when I asked about effort quantity, but the perception of time spent making effort, and of hard work was not significant.

9 GENERAL DISCUSSION

In this work, I investigated whether negative feedback causes engagement in the early stage of goal pursuit. I proposed that positive feedback will generally generate engagement, while negative feedback will engage more after people make high effort under conditions of uncertainty, and make low effort, in certainty. Additionally, under uncertainty, the mechanism that explains the engagement in negative feedback is persistence, while under certainty it is goal progress**.**

I presented five experiments, in which I found support for the hypotheses proposed. I analyzed two dependent variables: "*Likely to reach a goal"* and *"Likely to continue working on this goal"*.

When I look at the first dependent variable, for example, I found support for H1a, H1b, and H1c. In the second variable partial support for H1a was found, however, there is evidence that after people receive negative feedback they engage similarly to those who receive positive feedback. This demonstrates that negative feedback can be effective at the early stage of goal pursuit. Additionally, the results confirm H1b and H1c. This work presents mechanisms that explain the effect of negative feedback (H2a and H2b), that is, it suggests the variables that demonstrate engagement in the early stage of goal pursuit.

In Studies 1 and 2, manipulation is one scenario, each study in one goal attainability condition. As a result, I found support for H1a and H1c (Uncertainty), and H1b and H1c (Certainty) in the dependent variable "*Likely to reach a goal"*. Experiment 5 reinforced these findings under certainty (H1b and H1c), and, even more, demonstrates that persistence (H2a) and goal progress (H2b) explain engagement after people receive negative feedback.

In the same study, I found support for H1c under uncertainty in the dependent variable *"Likely to continue working on this goal"***.** Despite not confirming hypotheses H1a and H1b, in some situations after people receive negative feedback they engage equally to those who receive positive feedback. For example, I did not find a difference between valence feedback under uncertainty and high effort. The same is true under certainty and low effort. These situations show evidence that negative feedback can cause engagement in the early stage of goal pursuit, and works as positive feedback. Lastly, in Experiment 5, I found support for H2a and H2b in both dependent variables.

In Study 4, I confirmed H1b and H1c in the dependent variable *"Likely to continue working on this goal"*. Similarly, in Experiment 5, I found partial support for H1a, that negative feedback works as positive feedback under uncertainty, and confirm H1c in this attainability condition.

The first dependent variable "*Likely to reach a goal"* works mainly in studies where people read a scenario (studies 1 and 2) and in some cases where participants do one task (studies 3 and 5). However, when I verify the dependent variable *"Likely to continue working on this goal"*, it works in experiments where individuals undertake a task or when I simulate a reward program (studies 4 and 5). In experiment 3, individuals did a word search, but the effort manipulation was marginally significant and probably confuse the understanding of how much work was made. These differences between results are unexpected. It shows that the first variable proposed is more constant than the second. The dependent variable *"Likely to continue working on this goal"* needs one effort made by the participants. Despite being less constant, it was the variable that showed results when manipulating a marketing problem.

In summary, there is evidence that negative feedback works in the early stage of goal pursuit in both dependent variables. Lastly, I confirm that people engage after receiving negative feedback in a low effort condition in the two dependent variables. This is the major contribution of this work.

9.1 THEORETICAL CONTRIBUTIONS

This research makes four contributions to the goal literature. First, it demonstrates that negative feedback can engage in the early stage of goal pursuit, contrary to other studies about this theme (LOURO; PIETERS; ZEELENBER, 2007; FISHBACH; EYAL; FINKELSTEIN, 2010). The results show that perception of the amount of effort invested previously and goal attainability explain the relation between feedback and engagement. Although it is well-explored in the literature, understanding human motivation through feedback in goals is an important subject (HIGGINS; SCHOLER, 2009). Negative feedback causes engagement in the early stage of goal pursuit, and the major contribution to literature is shown when this occurs.

Secondly, negative feedback engages more in low effort depending on the other mechanisms. The literature shows that certainty increases commitment and effort (ZHANG et al., 2011; KOO; FISHBACH, 2012), and this is a condition that

explains the effect of the greater engagement of negative feedback on low effort compared to high effort. The effort previously signals commitment and increase engagement (ZHANG et al., 2011) however, under certainty I demonstrate that even people making low effort will engage.

Third, engagement being greater in the low effort condition than in the high effort condition is unexpected. The literature states that more effort prompts more commitment (ZHANG et al., 2011) and our results show that this did not occur. I demonstrate that low effort causes engagement in some conditions. When I explore goal progress as an explanatory mechanism, I make one more contribution to the literature. Some studies agree that when people perceive progress toward a goal they will be motivated (BONEZZI; BRENDL; ANGELIS, 2011) even after receiving negative feedback (ESKREIS-WINKLER; FISHBACH, 2020), however, other authors suggest that motivation increases if people perceive progress in the final stage of goal pursuit (KOO; FISHBACH, 2012). I add knowledge to the literature when demonstrating that goal progress could be effective (BONEZZI; BRENDL; ANGELIS, 2011; ESKREIS-WINKLER; FISHBACH, 2020) even in the early stage of goal pursuit.

Lastly, I show that persistence explains engagement under uncertainty. Persistence is a behavior wherein people continue in goal pursuit despite opposition because people see goal value and have an expectancy to attain it (LIBERMAN; FÖRSTER, 2008; MOSHONTZ, 2017). Demonstrate that negative feedback is this opponent force, which is more one contribution to the literature. I show that when people make effort, they generate value and confirm attainability expectations, although they are still uncertain. People will thus interpret the negative feedback, one opponent force, more positively, and persist in goal pursuit. The effort generates value, and when people persist in the goal, they improve goal value and put more effort (SCHMITT; GIELNIK; SEIBEL, 2019). The persistence prompts goals value, leaving something that was important even more relevant. As a result, people engage in their goals, even after receiving negative feedback under uncertainty.

9.2 MANAGERIAL IMPLICATIONS

From a practical viewpoint, this study contributes to an understanding of engagement in goal pursuit even in unfavorable conditions, such as negative feedback. People receive negative feedback when seeking their goals daily (FISHBACH; EYAL;

FINKELSTEIN, 2010; FISHBACH; FINKELSTEIN, 2012), and it is interesting to understand how people engage after receiving it (LEE; KEIL; WONG, 2015).

Marketing is no different, and sometimes companies will give negative feedback to consumers. One example is a reward program. Commonly, a consumer signs up for a reward program but does not finish it (CAPIZZI; FERGUNSON, 2005). During the process to earn a reward consumers will occasionally, receive negative feedback. For example, *"your points have expired"*, *"the promotion is over"*, *"the product is not available"* or *"you didn't win the promotion"*. It is thus necessary to reduce the impact of the negative feedback and thus encourage customers to continue participating in these programs before ending them.

The loyalty program works, but the challenge is to revitalize the market with new strategies (CAPIZZI; FERGUNSON, 2005). In reward programs consumers are more motivated to make a purchase if they are near to receiving some reward (KIVETZ; URMINSKY; ZHENG, 2006; KOO; FISHBACH, 2012), that is, the studies explore reward distance and step size (BAGCHI; LI, 2011; KOO; FISHBACH, 2012). First, I propose investigating the early stage, expanding the studies that analyze motivation in the final stage of reward programs. Additionally, I explore whether these programs require effort from participants in this early stage, and sometimes they give negative feedback to customers. In summary, I look into some details that will help marketers in their strategies.

According to the findings, more effort invested by the consumer in a reward program generates more persistence. In this case, the company must obscure goal steps, as leaving some uncertainty in the process will promote engagement by customers. These results expand knowledge about step-size ambiguity, which demonstrates that when there is high ambiguity consumers focus on distance (BAGCHI; LI, 2011). In this case, when there is uncertainty or some ambiguity, people engage after receiving negative feedback and make more effort.

If a consumer makes a low amount of effort, they should be shown progress, reinforcing the idea that they can achieve the goal, which encourages clients to follow their goals. The certainty of reaching a goal understood by demonstrating the steps will promote engagement.

Another example in marketing is negative feedback in social networks. Companies use social media to share content online, interact with consumers, and develop online nets (AGNIHOTRI et al., 2012). During this process, consumers publish

their reviews and receive some feedback (positive or negative). Companies should respond to negative reviews as soon as possible (SPARKS; SO; BRADLEY, 2016).

According to this work, if the company gives negative feedback to consumers or responds to negative reviews, it is possible to soften the effect by analyzing the effort invested previously. If the consumer made more effort previously on social networks (comments or engagement), negative feedback generates persistence, and the consumer tends to engage in their goal. The goal is a purchase or participation in a promotion, for example. Otherwise, if the consumers make a low amount of effort companies should demonstrate some progress to reinforce engagement.

This research can help managers understand how to give feedback effectively in business situations (ANSEEL et al., 2015). Knowledge about the amount of effort previously invested by the individual and attainability conditions can assist people in returning feedback, in a way that could be more effective in their daily work. There is no consensus about how to engage in feedback, because this engagement depends on individual and context differences (ANSEEL et al., 2015). I suggest that after people receive negative feedback, those who make high effort will engage more in uncertainty condition. In this way, a manager should encourage persistence and maintain uncertainty. However, if individuals do not make much effort, managers can show them the progress they have made to stimulate engagement in goal pursuit. Finally, positive feedback is generally effective in the early stage of goal pursuit, and managers can give this kind of feedback without compromising the results.

9.3 LIMITATIONS AND FUTURE RESEARCH

This work has some limitations that can direct complementary studies and even further research.

I propose that future studies continue exploring the theme using short and long-term tasks of goal pursuit, and stay focused on negative feedback. I undertook five studies using MTurk. More experiments can be developed with students or in the field. The objective is to reinforce findings.

The first suggestion is the task deadline. When I argue about the amount of previous effort, the task needs to be difficult, require some effort, and time to do it (LOURO; PIETERS; ZEELENBER, 2007; LALA; CHAKRABORTY, 2015). In Studies 3 and 5 respondents made effort but it was in the short term, even though in

Experiments 1 and 2 the professional project is long term. In Experiment 4 it is long-term when simulating a reward program. In the long term, it is possible to measure expertise, because when people gain expertise, they look for more negative feedback and this situation affects motivation and performance (FISHBACH; EYAL; FINKELSTEIN, 2010; FINKELSTEIN; FISHBACH; TU, 2017). Future studies may explore whether there are differences between task deadlines.

It is possible to continue exploring the theme in the goal stage. Some researchers found differences in goal pursuit in the early and the final stages (FISHBACH; EYAL; FINKELSTEIN, 2010; LOURO; PIETERS; ZEELENBER, 2007; HUANG et al., 2015), and for this reason, the results of this work could also be changed. I focus on the early stage of goal pursuit, and following studies could explore the final stage.

Finally, negative feedback could be effective to increase engagement in other situations, not only in goal difficulty (LEE; KEIL; WONG, 2015). I demonstrate that it could be effective when attainability is a boundary condition, and persistence and goal progress are mechanisms that explain engagement after people receive negative feedback between effort conditions. I suggest focusing on negative feedback because the major contribution to goal literature is in this valence. It is possible to explore consumer behavior in situations where clients receive negative feedback after purchases.

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APPENDIX 1 – EXPERIMENT 1

Hi! Welcome to this research!

You are being invited to take part in academic research that focuses on how people perform in difficult tasks.

Please read this consent document carefully before you decide to participate.

The survey should take 3 minutes to complete.

PROCEDURES:
In this survey, you read one scenario and answer some questions related to it.

RESULTS:
The main results will be published in articles from academic journals.

RISKS:
There are no risks associated with participating in this survey.

PRIVACY:
All responses are confidential and data will be evaluated together without the identification of respondents.

IF YOU HAVE ANY QUESTIONS, CONTACT:
Graziela Rodrigues
PhD Candidate in Business Administration - UFPR
grazielarodrigues@gmail.com

Do you confirm that you read this consent form and agree to participate in this study?
( ) Yes, I accepted to participate.
( ) I do not accepted to participate.

Introduction:

This research is about **how people perform difficult tasks.** We will show you a scenario and ask some questions about this subject.

Effort Condition:

- **High Effort:**

Read the following scenario carefully as we will ask you some questions about it next! (you can advance to the next page after 20 seconds)

Suppose that you have been assigned a **difficult project with a tight deadline**. However, the company you work for gives you the necessary conditions to develop the project. With this scenario in mind, you thought it best to get to work.

Imagine that you started working on the project and were surprised by the difficulty of the task. Because of that, you **work hard**. You put **a lot of effort** into the job. If you continue like this, **maybe you will complete** the project on time.

- **Low Effort:**

Read the following scenario carefully as we will ask you some questions about it next! (you can advance to the next page after 20 seconds)

Suppose that you have been assigned a **difficult project with a tight deadline**. However, the company you work for gives you the necessary conditions to develop the project. With this scenario in mind, you thought it best to get to work.

Imagine that you started working on the project and were surprised by the difficulty of the task. However, you **don't work very hard**. You put **little effort** into the job. Still, you realize that if you continue like this, **maybe you will complete** the project on time.

Feedback Condition:

- **Positive Feedback:**

One day after you started, your manager gives you the following feedback:

You're doing great! Congratulations!

- **Negative Feedback:**

One day after you started, your manager gives you the following feedback:

You are doing poorly! Watch out!

DV - Engagement:

Please, answer the following questions:

	Extremely unlikely 1	Moderately unlikely 2	Slightly unlikely 3	Neither likely nor unlikely 4	Slightly likely 5	Moderately likely 6	Extremely likely 7
1 - How likely are you to reach the project goal?	○	○	○	○	○	○	○

	Not at all 1	2	3	4	5	6	Very much 7
2 - How much	○	○	○	○	○	○	○

would you like to continue working on this project?	

Final Questions:

Based on the scenario and feedback provided, please answer the following questions:

	None at all 1	2	3	4	5	6	A great deal 7
How much effort have you made toward achieving this goal?	○	○	○	○	○	○	○
How hard did you work toward this goal?	○	○	○	○	○	○	○
How much time did you spend on the tasks?	○	○	○	○	○	○	○
How much progress have you made toward the proposed goal?	○	○	○	○	○	○	○
How much do you consider the project difficult?	○	○	○	○	○	○	○

Answer the following question:

	Negative 1	2	3	4	5	6	Positive 7

How do you consider the feedback you received?	○	○	○	○	○	○	○

Based on the information in the previous tasks, how much you agree with:

	Strongly disagree 1	Disagree 2	Somewhat disagree 3	Neither agree nor disagree 4	Somewhat agree 5	Agree 6	Strongly agree 7
The reason I did or did not achieve the goal is totally due to other people or circumstances.	○	○	○	○	○	○	○
The reason I did or did not achieve the goal is totally due to me.	○	○	○	○	○	○	○
I will be able to achieve the proposed goal.	○	○	○	○	○	○	○
I feel confident to achieve the proposed goal.	○	○	○	○	○	○	○

Demographic Questions:

Gender:

( ) Male
( ) Female

Age:

_____

What do you think is this study purpose (required)?

_____

APPENDIX 2 – EXPERIMENT 2

Hi! Welcome to this research!

You are being invited to take part in academic research that focuses on how people perform in difficult tasks.

Please read this consent document carefully before you decide to participate.

The survey should take 3 minutes to complete.

PROCEDURES:
In this survey, you read one scenario and answer some questions related to it.

RESULTS:
The main results will be published in articles from academic journals.

RISKS:
There are no risks associated with participating in this survey.

PRIVACY:
All responses are confidential and data will be evaluated together without the identification of respondents.

IF YOU HAVE ANY QUESTIONS, CONTACT:
Graziela Rodrigues
PhD Candidate in Business Administration - UFPR
grazielarodrigues@gmail.com

Do you confirm that you read this consent form and agree to participate in this study?
( ) Yes, I accepted to participate.
( ) I do not accepted to participate.

Introduction:

This research is about **how people perform difficult tasks.** We will show you a scenario and ask some questions about this subject.

Effort Condition:

- **High Effort:**

Read the following scenario carefully as we will ask you some questions about it next! (you can advance to the next page after 20 seconds)

Suppose that you have been assigned a **difficult project with a tight deadline**. However, the company you work for gives you the necessary conditions to develop the project. With this scenario in mind, you thought it best to get to work.

Imagine that you started working on the project and were surprised by the difficulty of the task. Because of that, you **work hard**. You put **a lot of effort** into the job. If you continue like this, **you will complete** the project on time.

- **Low Effort:**

Read the following scenario carefully as we will ask you some questions about it next! (you can advance to the next page after 20 seconds)

Suppose that you have been assigned a **difficult project with a tight deadline**. However, the company you work for gives you the necessary conditions to develop the project. With this scenario in mind, you thought it best to get to work.

Imagine that you started working on the project and were surprised by the difficulty of the task. However, you **don't work very hard**. You put **little effort** into the job. Still, you realize that if you continue like this**, you will complete** the project on time.

Feedback Condition:

- **Positive Feedback:**

One day after you started, your manager gives you the following feedback:

You're doing great! Congratulations!

- **Negative Feedback:**

One day after you started, your manager gives you the following feedback:

You are doing poorly! Watch out!

DV - Engagement:

Please, answer the following questions:

	Extremely unlikely 1	Moderately unlikely 2	Slightly unlikely 3	Neither likely nor unlikely 4	Slightly likely 5	Moderately likely 6	Extremely likely 7
1 - How likely are you to reach the project goal?	○	○	○	○	○	○	○

	Not at all 1	2	3	4	5	6	Very much 7
2 - How much	○	○	○	○	○	○	○

would you like to continue working on this project?	

Final Questions:

Based on the scenario and feedback provided, please answer the following questions:

	None at all 1	2	3	4	5	6	A great deal 7
How much effort have you made toward achieving this goal?	○	○	○	○	○	○	○
How hard did you work toward this goal?	○	○	○	○	○	○	○
How much time did you spend on the tasks?	○	○	○	○	○	○	○
How much progress have you made toward the proposed goal?	○	○	○	○	○	○	○
How much do you consider the project difficult?	○	○	○	○	○	○	○

Answer the following question:

	Positive 1	2	3	4	5	6	Negative 7
How do you consider the feedback	○	○	○	○	○	○	○

you
received?

Based on the information in the previous tasks, how much you agree with:

	Strongly disagree 1	Disagree 2	Somewhat disagree 3	Neither agree nor disagree 4	Somewhat agree 5	Agree 6	Strongly agree 7
The reason I did or did not achieve the goal is totally due to other people or circumstances.	○	○	○	○	○	○	○
The reason I did or did not achieve the goal is totally due to me.	○	○	○	○	○	○	○
I will be able to achieve the proposed goal.	○	○	○	○	○	○	○
I feel confident to achieve the proposed goal.	○	○	○	○	○	○	○

Demographic Questions:

Gender:

( ) Male
( ) Female

Age:

_____

What do you think is this study purpose (required)?

_____

APPENDIX 3 – EXPERIMENT 3

Introduction:

Hi! Welcome to this research!

You are being invited to take part in academic research that focuses on how people respond to tasks that require individual skills.

Please read this consent document carefully before you decide to participate.

The survey should take 5 minutes to complete.

PROCEDURES:
In this survey, you will have a task and answer some questions related to it.

RESULTS:
The main results will be published in articles from academic journals.

RISKS:
There are no risks associated with participating in this survey.

PRIVACY:
All responses are confidential and data will be evaluated together without the identification of respondents.

IF YOU HAVE ANY QUESTIONS, CONTACT:
Graziela Rodrigues
PhD Candidate in Business Administration - UFPR
grazielarodrigues@gmail.com

Do you confirm that you read this consent form and agree to participate in this study?
( ) Yes, I accepted to participate.
( ) I do not accepted to participate.

Effort Condition:

Please consider the following task:

You have a goal to find as many words as you can in a puzzle. The words are on the right side of the board. The total time to finish is 20 minutes. However, while the task is running, the activity may be interrupted. You will receive feedback about your performance.

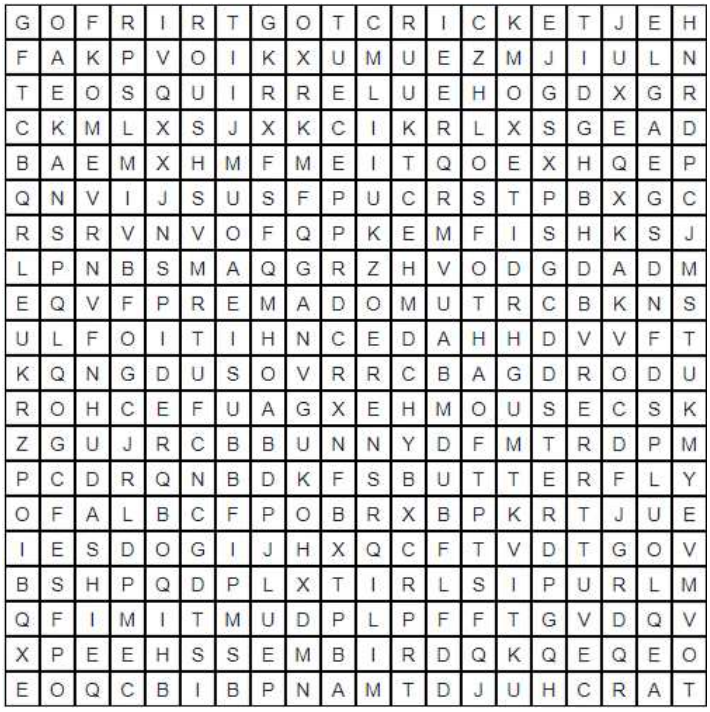
Click here to answer a survey

- **Low Effort Condition:**

WORD SEARCH

Animal names – Hidden words can be found in the meanings: horizontal, vertical or diagonal. To select a word, click on the first letter and drag it with the mouse.

Keywords:



G	O	F	R	I	R	T	G	O	T	C	R	I	C	K	E	T	J	E	H
F	A	K	P	V	O	I	K	X	U	M	U	E	Z	M	J	I	U	L	N
T	E	O	S	Q	U	I	R	R	E	L	U	E	H	O	G	D	X	G	R
C	K	M	L	X	S	J	X	K	C	I	K	R	L	X	S	G	E	A	D
B	A	E	M	X	H	M	F	M	E	I	T	Q	O	E	X	H	Q	E	P
Q	N	V	I	J	S	U	S	F	P	U	C	R	S	T	P	B	X	G	C
R	S	R	V	N	V	O	F	Q	P	K	E	M	F	I	S	H	K	S	J
L	P	N	B	S	M	A	Q	G	R	Z	H	V	O	D	G	D	A	D	M
E	Q	V	F	P	R	E	M	A	D	O	M	U	T	R	C	B	K	N	S
U	L	F	O	I	T	I	H	N	C	E	D	A	H	H	D	V	V	F	T
K	Q	N	G	D	U	S	O	V	R	R	C	B	A	G	D	R	O	D	U
R	O	H	C	E	F	U	A	G	X	E	H	M	O	U	S	E	C	S	K
Z	G	U	J	R	C	B	B	U	N	N	Y	D	F	M	T	R	D	P	M
P	C	D	R	Q	N	B	D	K	F	S	B	U	T	T	E	R	F	L	Y
O	F	A	L	B	C	F	P	O	B	R	X	B	P	K	R	T	J	U	E
I	E	S	D	O	G	I	J	H	X	Q	C	F	T	V	D	T	G	O	V
B	S	H	P	Q	D	P	L	X	T	I	R	L	S	I	P	U	R	L	M
Q	F	I	M	I	T	M	U	D	P	L	P	F	F	T	G	V	D	Q	V
X	P	E	E	H	S	S	E	M	B	I	R	D	Q	K	Q	E	Q	E	O
E	O	Q	C	B	I	B	P	N	A	M	T	D	J	U	H	C	R	A	T

BIRD
BEAR
BUNNY
BUTTERFLY
CAT
CRICKET
DOG
EAGLE
ELEPHANT
FISH
GIRAFFE
MOUSE
SHARK
SHEEP
SNAKE
SPIDER
SQUIRREL
TIGER

Write down your code or copy (CTRL + C) and paste (CTRL + V) on the next screen:

1175

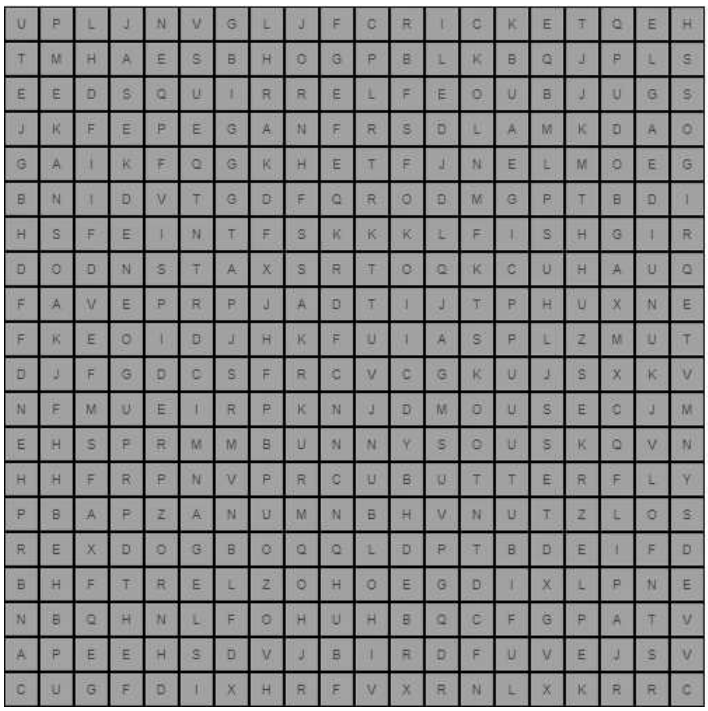
Click on the “Next” button.
Important: You need to use this code.

- **<u>High Effort Condition</u>:**

  WORD SEARCH

  Animal names – Hidden words can be found in the meanings: horizontal, vertical or diagonal. To select a word, click on the first letter and drag it with the mouse.

Keywords:



BIRD
BEAR
BUNNY
BUTTERFLY
CAT
CRICKET
DOG
EAGLE
ELEPHANT
FISH
GIRAFFE
MOUSE
SHARK
SHEEP
SNAKE
SPIDER
SQUIRREL
TIGER

Write down your code or copy (CTRL + C) and paste (CTRL + V) on the next screen:

2213

Click on the “Next” button.
Important: You need to use this code.

Next

Enter your survey code here: _____

You did the word search task for 2 minutes, which corresponds to 10% of the total time.
Your response has been sent to a specialist to verify your performance.
Please, do not close the browser.
You will answer a question and then you will get one feedback…

Please, answer the following question:

	Extremely bad 1	Moderately bad 2	Slightly bad 3	Neither good nor bad 4	Slightly good 5	Moderately good 6	Extremely good 7
1 - How do you consider your performance until this step?	○	○	○	○	○	○	○

Feedback Conditions:

- **Positive Feedback:**

The evaluator returned the following feedback:

You did great! Congratulations!

- **Negative Feedback:**

The evaluator returned the following feedback:

You did poorly! Be careful!

Goal Attainability Conditions:

- **Certainty:**

If you continue like this, **you will find** all the words and **will reach** the proposed goal.

- **Uncertainty:**

If you continue like this, **maybe you will find** all the words and **maybe will reach** the proposed goal.

DV - Engagement:

Please, consider the previous task to answer the following questions:

	Extremely unlikely 1	Moderately unlikely 2	Slightly unlikely 3	Neither likely nor unlikely 4	Slightly likely 5	Moderately likely 6	Extremely likely 7
1 - How likely are you to reach the project goal?	○	○	○	○	○	○	○

Please, consider the previous task to answer the following questions:

	Not at all 1	2	3	4	5	6	Very much 7
2 - How much would you like to continue working on this goal?	○	○	○	○	○	○	○

Final Questions:

Based on previous task and feedback provided, please answer the following questions:

	None at all 1	2	3	4	5	6	A great deal 7
How much effort have you made toward achieving this goal?	○	○	○	○	○	○	○
How hard did you work toward this goal?	○	○	○	○	○	○	○
How much time did you spend on the task?	○	○	○	○	○	○	○
How much progress have you made toward the	○	○	○	○	○	○	○

proposed goal?							
How much are you committed to the proposed goal?	○	○	○	○	○	○	○
How much are you willing to persist in the proposed goal?	○	○	○	○	○	○	○
How much are you interested in the proposed goal?	○	○	○	○	○	○	○

Please, answer the following question:

	Negative 1	2	3	4	5	6	Positive 7
How do you consider the feedback you received?	○	○	○	○	○	○	○

Please, answer the following question:

	Uncertain 1	2	3	4	5	6	Certain 7
How much do you consider completing the goal?	○	○	○	○	○	○	○

Please, answer the following question:

	Little 1	2	3	4	5	6	Much 7
How much do you consider	○	○	○	○	○	○	○

the goal attainable?	

Please, answer the following question:

	Difficult 1	2	3	4	5	6	Easy 7
How much do you consider the goal difficult?	◯	◯	◯	◯	◯	◯	◯

Demographic Questions:

Gender:

( ) Male
( ) Female

Age:

_____

What do you think is this study purpose?

_____

APPENDIX 4 – EXPERIMENT 4

Introduction:

Hi! Welcome to this research!

You are being invited to take part in academic research that focuses on how people participate in a reward program.

Please read this consent document carefully before you decide to participate.

The survey should take 15 minutes to complete.

PROCEDURES:
In this survey, you will have a task and answer some questions related to it.

RESULTS:
The main results will be published in articles from academic journals.

RISKS:
There are no risks associated with participating in this survey.

PRIVACY:
All responses are confidential and data will be evaluated together without the identification of respondents.

IF YOU HAVE ANY QUESTIONS, CONTACT:
Graziela Rodrigues
PhD Candidate in Business Administration - UFPR
grazielarodrigues@gmail.com

Do you confirm that you read this consent form and agree to participate in this study?
( ) Yes, I accepted to participate.
( ) I do not accepted to participate.

Introduction:

Suppose that on the first purchase at one supermarket, you agreed to participate in one reward program.

In this program, for every 1,000 points, you can exchange for a $50 in-app purchase. This voucher is valid only for purchases in the supermarket app.

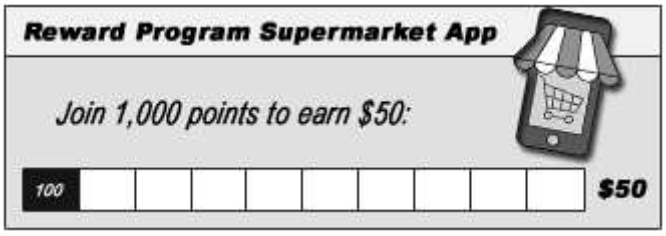
Your goal is to reach 1,000 points. To achieve it, you will start participating in the promotion as follows:

- all participants who register for the program this month will earn 100 points;
- those who perform well in one game will earn more than 100 points.

Suppose that you signed up for the reward program. The supermarket returned the following message:

Thank you, welcome to the reward program.

You earned 100 points.



To earn more than 100 points, start the game.

Effort Condition:

Please consider the following task:

The game is a crossword with a supermarket theme. You should try to fill in as many words as possible. Our system is monitoring your performance, while the task is running, the activity will be interrupted. You will receive feedback about your performance.

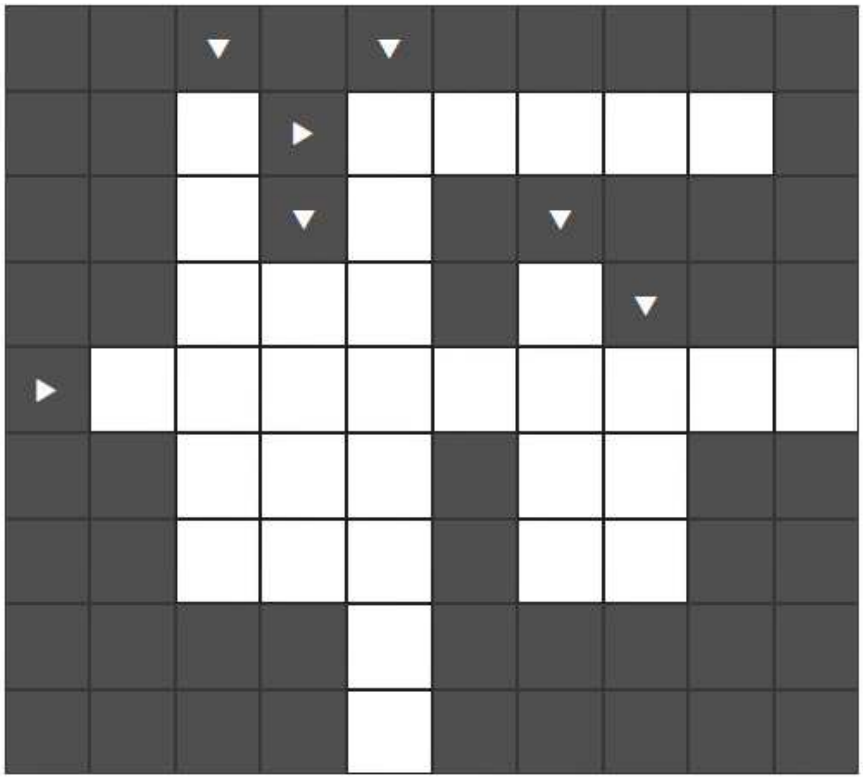
Before you start, please read some instructions:

1 - Click on the arrows. It will open the word tip.
2 - Type the word and click on "Save".
3 - If you want to return to the crossword screen without responding, click on "Close".

Click here to start a crossword

- **Low Effort:**

Crossword



Example:

Close

Fresh product.

9 letters

Save

Answers:

Tip:	**Word:**
Groceries. Common product.	Beans
Fresh product.	Vegetable
Market section.	Bakery
Served for breakfast (plural).	Eggs
Market section. Product type.	Beverage
Customer advantage. Promotion.	Sale
Closing purchase.	Buy

Write down your code or copy (CTRL + C) and paste (CTRL + V) on the next screen:

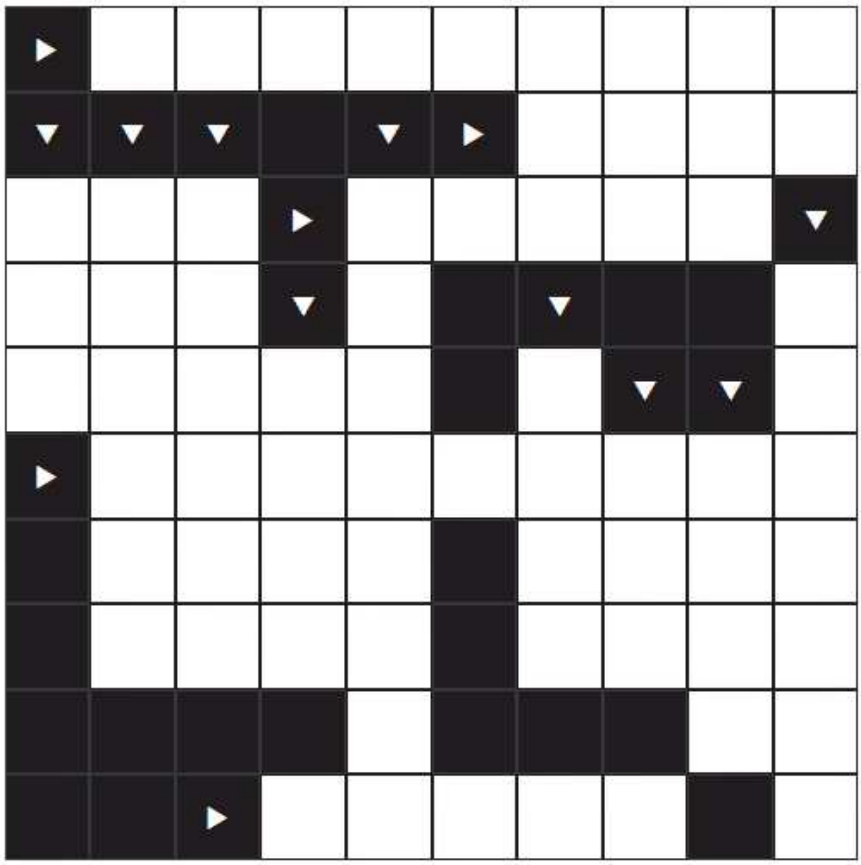
1175

Click on the “Next” button.
Important: You need to use this code.

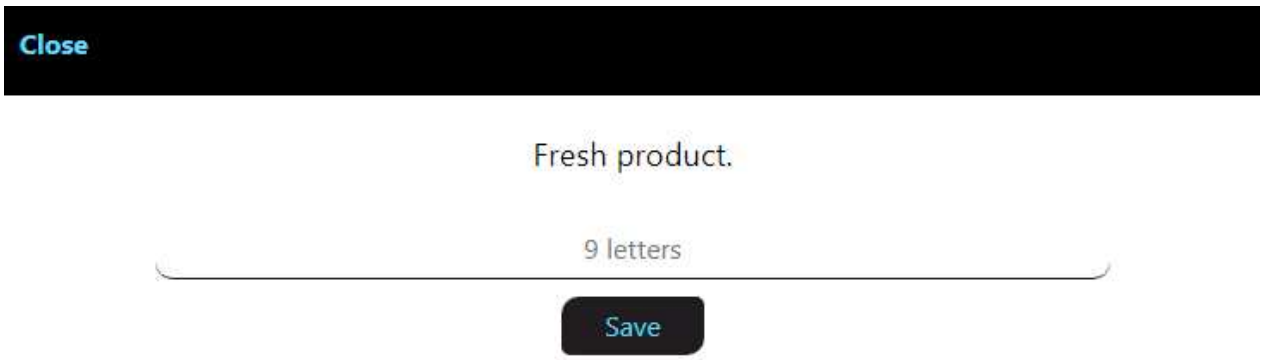
Next

- **<u>High Effort</u>:**

Crossword



Example:



Answers:

Tip:	**Word:**
Small fruit, blue, and rich in antioxidants.	Blueberry
Groceries. Common product.	Beans
Dried fruit. Almond, hazelnut, peanut among others.	Nuts
Fresh product.	Vegetable
Citrus fruit.	Lemon
A drink.	Tea
Sharp flavor and aromatic. Snack.	Olives
Market section.	Bakery
Served for breakfast (plural).	Eggs
Market section. Product type.	Beverage
Customer advantage. Promotion.	Sale
Closing purchase.	Buy
Illumination.	Lamp
A fruit (plural).	Peaches

Write down your code or copy (CTRL + C) and paste (CTRL + V) on the next screen:

2213

Click on the “Next” button.
Important: You need to use this code.

Next

Enter your survey code here: _____

The supermarket thanks your participation.

Now see the company's feedback about your game performance.

Feedback Conditions:

- **Positive Feedback:**

You did great! Congratulations!

You earned 100 points!

- **Negative Feedback:**

You did poorly! Be careful!

You did not earn 100 points!

Goal Attainability Conditions:

- **Certainty:**

From the analysis of your profile, our system has verified that **you will reach the goal** of 1,000 points. That is, **you will be able** to achieve 1,000 points and **will reach** the proposed goal.

- **Uncertainty:**

From the analysis of your profile, our system has verified that you **maybe will reach the goal** of 1,000 points. That is**, maybe you will be able** to achieve 1,000 points and **maybe will reach** the proposed goal.

DV - Engagement:

Please, consider the goal to reach 1,000 points to answer the following question:

Extremely unlikely 1	Moderately unlikely 2	Slightly unlikely 3	Neither likely nor unlikely 4	Slightly likely 5	Moderately likely 6	Extremely likely 7

1 - How likely are you to reach the reward goal?	○	○	○	○	○	○	○

Please, consider the goal to reach 1,000 points to answer the following questions:

	Not at all 1	2	3	4	5	6	Very much 7
2 - How much would you like to continue working on this goal?	○	○	○	○	○	○	○

Attention Check:

Please, answer the following question:

	1	2	3	4	5	6	7
If you are reading this question, tick the number three.	○	○	○	○	○	○	○

Final Questions:

Based on previous goal and feedback provided, please answer the following questions:

	None at all 1	2	3	4	5	6	A great deal 7
How much effort have you made toward achieving this goal?	○	○	○	○	○	○	○
How hard did you work	○	○	○	○	○	○	○

toward this goal?							
How much time did you spend on the task?	○	○	○	○	○	○	○
How much progress have you made toward the proposed goal?	○	○	○	○	○	○	○
How much are you committed to the proposed goal?	○	○	○	○	○	○	○
How much are you willing to persist in the proposed goal?	○	○	○	○	○	○	○
How much are you interested in the proposed goal?	○	○	○	○	○	○	○

Please, answer the following question:

	Negative 1	2	3	4	5	6	Positive 7
How do you consider the feedback you received?	○	○	○	○	○	○	○

Please, answer the following question:

	Uncertain 1	2	3	4	5	6	Certain 7

How much do you consider completing the goal after receiving feedback?	○	○	○	○	○	○	○

Please, answer the following question:

	Little 1	2	3	4	5	6	Much 7
How much do you consider the goal attainable?	○	○	○	○	○	○	○

Please, answer the following question:

	Difficult 1	2	3	4	5	6	Easy 7
How much do you consider the goal difficult?	○	○	○	○	○	○	○

Demographic Questions:

Gender:

( ) Female
( ) Male

Age:

_____

What do you think is this study purpose?

_____

APPENDIX 5 – EXPERIMENT 5

Introduction:

Hi! Welcome to this research!

You are being invited to take part in academic research that focuses on how people respond to tasks that require individual skills.

Please read this consent document carefully before you decide to participate.

The survey should take 10 minutes to complete.

PROCEDURES:
In this survey, you will have a task and answer some questions related to it.

RESULTS:
The main results will be published in articles from academic journals.

RISKS:
There are no risks associated with participating in this survey.

PRIVACY:
All responses are confidential and data will be evaluated together without the identification of respondents.

IF YOU HAVE ANY QUESTIONS, CONTACT:
Graziela Rodrigues
PhD Candidate in Business Administration - UFPR
grazielarodrigues@gmail.com

Do you confirm that you read this consent form and agree to participate in this study?
( ) Yes, I accepted to participate.
( ) I do not accepted to participate.

Effort Condition:

Please consider the following task:

The purpose of this study was to understand how people are good at memory tasks. You have a goal to memorize as many words as you can.

It is not necessary to memorize all the words, we need to analyze the real participant's performance.

The total time to memorize is 2 minutes. However, while the task is running, the activity may be interrupted. You will receive feedback about your performance.

- **Low Effort:**

  Memorize as many words as you can:

  camera - engineering - difficulty - depth - strategy

  power - connection - paper - bathroom - response

  queen - people - guitar - church - measurement

Write the words you memorized on the previous task:

1 - ----------
2 - ----------
3 - ----------
4 - ----------
5 - ----------
6 - ----------
7 - ----------
8 - ----------
9 - ----------
10 - ----------
11 - ----------
12 - ----------
13 - ----------
14 - ----------
15 - ----------

- **<u>High Effort</u>:**

  Memorize as many words as you can:

  camera - engineering - difficulty - depth - strategy

  power - connection - paper - bathroom - response

  queen - people - guitar - church - measurement

  bathroom - advice - chemistry - idea - politics

  reaction - argument - hat - truth - menu - success

  basis - obligation - knowledge - fishing - restaurant

  Write the words you memorized on the previous task:

  1 - ----------
  2 - ----------
  3 - ----------
  4 - ----------
  5 - ----------
  6 - ----------
  7 - ----------
  8 - ----------
  9 - ----------
  10 - ----------
  11 - ----------
  12 - ----------
  13 - ----------
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  17 - ----------
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  19 - ----------
  20 - ----------
  21 - ----------
  22 - ----------

23 - ----------
24 - ----------
25 - ----------
26 - ----------
27 - ----------
28 - ----------
29 - ----------
30 - ----------

Feedback Conditions:

- **Positive Feedback:**

The evaluator returned the following feedback:

You did great! Congratulations!

- **Negative Feedback:**

The evaluator returned the following feedback:

You did poorly! Be careful!

Goal Attainability Conditions:

- **Certainty:**

A memory task requires skills. If you continue with your skills, **you will complete** the task successfully. That is, **you will be able** to memorize all the words and **will reach** the proposed goal.

- **Uncertainty:**

A memory task requires skills. If you continue with your skills, **maybe you complete** the task successfully. That is, **maybe you will be able** to memorize all the words and **maybe will reach** the proposed goal.

DV - Engagement:

Please, consider the previous task to answer the following questions:

	Extremely unlikely 1	Moderately unlikely 2	Slightly unlikely 3	Neither likely nor unlikely 4	Slightly likely 5	Moderately likely 6	Extremely likely 7
1 - How likely are you to reach the project goal?	○	○	○	○	○	○	○

Please, consider the previous task to answer the following questions:

	Not at all 1	2	3	4	5	6	Very much 7
2 - How much would you like to continue working on this goal?	○	○	○	○	○	○	○

Final Questions:

Based on previous task and feedback provided, please answer the following questions:

	None at all 1	2	3	4	5	6	A great deal 7
How much effort have you made toward achieving this goal?	○	○	○	○	○	○	○
How hard did you work toward this goal?	○	○	○	○	○	○	○
How much time did you spend on the task?	○	○	○	○	○	○	○

How much progress have you made toward the proposed goal?	○	○	○	○	○	○	○
How much are you committed to the proposed goal?	○	○	○	○	○	○	○
How much are you willing to persist in the proposed goal?	○	○	○	○	○	○	○
How much are you interested in the proposed goal?	○	○	○	○	○	○	○

Please, answer the following question:

	Negative 1	2	3	4	5	6	Positive 7
How do you consider the feedback you received?	○	○	○	○	○	○	○

Please, answer the following question:

	Uncertain 1	2	3	4	5	6	Certain 7
How much do you consider completing the goal after receiving feedback?	○	○	○	○	○	○	○

Please, answer the following question:

	Little 1	2	3	4	5	6	Much 7
How much do you consider the goal attainable?	○	○	○	○	○	○	○

Please, answer the following question:

	Difficult 1	2	3	4	5	6	Easy 7
How much do you consider the goal difficult?	○	○	○	○	○	○	○

Demographic Questions:

Gender:

( ) Male
( ) Female

Age:

_____

What do you think is this study purpose?

_____