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BEHAVIOURAL ECONOMICS

**THE IMPACT OF INCIDENTAL HAPPINESS ON THE STATUS QUO BIAS UNDER
DIFFERENT FRAMING CONDITIONS**

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The views stated in this thesis are those of the author and not necessarily those of the supervisor, second assessor, Erasmus School of Economics or Erasmus University Rotterdam.

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ABSTRACT

This study investigates the question : “what is the impact of incidental happiness on the status quo bias under varied framing conditions? ”. In an experiment conducted, participants were presented with a decision-making task via a survey involving the choice between two smartphones, with one framed as the status quo. Notably the attributes of these smartphones were either framed positively or negatively. Concurrently, participants were either exposed to a happiness-inducing treatment or remained in a neutral affective state. The findings indicate that individuals exposed to both the happiness treatment and negative framing displayed the lowest preference for the status quo option. Notably, this group's proportion of status quo selections significantly differed from both the neutral-affect and negative-framed group and the happy, positive-framed group. However, the results were not conclusive in attributing this change in status quo selection to the influence of happiness. This research adds to the existing literature on the interplay between affect and the status quo bias, offering insights that could inform strategies aimed at mitigating this bias.

INTRODUCTION

Status quo bias or “a bias towards the current state of affairs” is a repeated irrational phenomenon. This is more likely to emerge in emotionally difficult decision-making. A reliance on “what is” often leads to inefficient decisions.

A consumer who could benefit from an exchange offer on goods like smartphones, a person choosing between greener but relatively more expensive and new food options and an employee deciding whether to upgrade his insurance coverage - are all affected by this bias. Numerous studies have demonstrated this bias across varied fields such as decisions regarding insurance, finance, consumer products and more. Further, the status quo bias extends beyond personal choices and can impact the public policies undertaken in a country, goals and decisions undertaken by a business and more.

Some incidental emotions have been shown to amplify the effect of the status quo bias such as happiness. In recent research, there has been a stronger focus on exploring the effect of discrete negative incidental emotions and how they can be used to mitigate the status quo bias. However, with more information emerging about incidental emotions and their impact on both the content of thought and processing, there remains a gap in the literature on whether a positive affect state like happiness alone leads to more heuristic processing and reliance on the status quo or if the context of the decision making problem such as nature and material of the task also affects the style of processing coupled with incidental happiness.

This paper explores the impact of incidental happiness on the status quo selection under different framing conditions. This is done by analysing a decision making problem where one has the chance to exchange their recently purchased phone with another one that ranks higher on one attribute and lower on another. Moreover, the study uses negative attribute framing, where one would choose between two consumer products with two negative attributes (such as screen strength vs screen fragility). There is little to no literature examining the effect that being in the negative outcomes domain coupled with positive incidental affect has on the status quo reliance.

Under the framework of the Mood Maintenance Model, the loss avoidance tendencies that accompany positive emotions like happiness may potentially lead to more careful processing of the choice problem - reducing the status quo bias. The results of this study could be potentially utilized by marketers in deciding the strategy for exchange offers (or sometimes recalls due to product flaws), by managers while undertaking new policy decisions and by policymakers when choosing between two extremely different and opposing choices (to mitigate the potential status quo bias).

LITERATURE REVIEW

The literature review aims to collect and present information on the judgment, motivation and observed behavior of those in a positive affective condition to contribute to the research question of how incidental happiness can have an impact on the status quo bias, when exposed to different framing conditions.

2.1 Incidental happiness and decision making

Series of research conducted over the last few years have shown that emotions that are seemingly unrelated to a particular task can affect one's evaluation and judgment of the task. Therefore, incidental emotions such as happiness that can be induced through a small gift or through recalling a happy memory can facilitate such carry over effects. (Isen, Dalgleish & Power, 1999) (Yen & Chaung, 2008)

The impact of incidental happiness on decision making is varied and is influenced by a myriad of factors such as the domain of the task, the importance of the task, stakes involved etc. (Bodenhausen et al, 1994, Bless et al.,1996) In the context of the status quo bias, incidental happiness is believed to have a potential impact.

Status quo bias

Status quo bias is referred to as a bias which heightens one's preference for the current state of the world. When choosing between different products (in the case of consumer choice), different policies etc, it has been observed that people often stick with their previously made decision (or status quo), even in situations where this choice may not be optimal. These have been noted in both real life settings as well as experimental studies involving a hypothetical decision making task with one of the options framed as the status quo (Samuelson & Zeckhauser, 1988, Kahneman et al. 1991)

In a study conducted by Luce (1999), a correlation was found between high trade off difficulty and the reliance on the status quo choice. It was shown that in a decision making task involving selection of a car (from multiple options), when highly valued attributes were similar and differed in a way where there was no clear winner, participants experienced a strong negative affect from the task. The results suggested that to remove this negative affect, one would participate in avoidant options such as choosing the status quo.

It is reasoned that due to loss aversion, a phenomenon where individuals value losses of x amount more negatively than they value gains of x amount positively. (Kahneman and Tversky 1979; Thaler 1980) . This heightened sensitivity to losses as opposed to gains can cause one to

stick with the status quo choice. For example, if someone were to choose between two smartphone brands that only differed on two attributes such that one product ranks higher on attribute 1 but lower on attribute 2 (relative to the alternative product), and one of the options were framed as a status quo, one would be more likely to select the status quo.

According to loss aversion, the potential gain that one might experience from switching to an alternative choice is not worth the potential loss that one could incur, so they stick with their current choice.

However, recent studies show the impact of certain incidental emotions on the status quo bias. That is certain incidental emotions seem to amplify/reduce the status quo bias. This has not been explained by loss aversion alone and calls for an integration of affect as it may be that some emotions cause a higher or lower degree of loss aversion.

2.2 Incidental happiness and the status quo bias

(This section discusses the current research on incidental affect such as happiness on the status quo bias while addressing gaps that remain in the literature. Since this study aims to explore the possible contrasting effects of incidental happiness on the status quo bias under different framing conditions, this section will discuss why a unidirectional effect of happiness on the status quo bias might need to be tested better.)

Notable theories that incorporate affect into understanding the possible impact of incidental emotions on decision making under uncertainty and risk include the Appraisal Tendency Framework (Lerner and Keltner, 2000) and the Mood Maintenance theory.

According to the ATF, happiness is an emotion with high appraisals of certainty. Such emotions have been said to create a higher reliance on heuristic processing and are proposed to increase the status quo reliance. An experiment involving a hypothetical decision task comparing different products and services saw that happiness (high certainty) led to an increase in the status quo selection across all categories (Yen & Chaung, 2008). Another study noted a higher status quo selection under “angry” participants relative to sad participants (Garg et al., 2005).

While a stronger access to stereotypes and heuristics have been observed in individuals under happiness, there is also evidence of higher and more efficient decision making skills as well as systematic processing. (Isbell, 2004, Bless et al. 1996, Isen et. al 1993, 1999) Therefore, while happiness and other positive affect can cue heuristics, they are not necessarily seen to be reliant

on these and have demonstrated engagement in decision making tasks in a more systematic and evaluative manner.

Some authors have noted that the nature of happiness to induce both heuristic as well as systematic processing of tasks have to do with contextual factors such as whether the task was interesting or meaningful to the individual, materials used in the task, etc. (Bodenhausen et al, 1994, Bless et al.,1996))

Therefore the underlying motivations of emotions might impact the way one engages with a particular decision making task. One such example is a study aimed at exploring the effects of anxiety and sadness saw that in situations of gambling/job selection, sad individuals were biased in favor of high risk-high reward options, whereas individuals with anxiety were biased in favor of low-risk low-reward options (Raghunathan and Pham, 1999). The authors suggest that motivational differences in the emotions, anxiety having a uncertainty reduction based goal while sadness having a goal of reward replacement, led to this pattern in selection. (see also, Lerner and Tiedens, 2006)

It is then important to understand more about the underlying motivations and meaning behind happiness to further explore why these motivations might lead to a bias towards the status quo option and under what conditions.

2.3 The Mood Maintenance framework

(this section discusses the various results and findings consistent with the mood maintenance theory and builds the framework for why differently framed but equivalent situations might result in different behavior patterns when one is influenced by positive affect)

The mood maintenance theory suggests that those in a happy mood are motivated to maintain their moods and avoid any potential deterioration to the same (Isen & Simmonds, 1978). In the context of the status quo bias studies, when one encounters two similar products that differ on important attributes such that there is no clear preference, those in a happy mood would be motivated to avoid the loss that one can face from switching to the alternative choice, even though there is an opportunity for an equivalent gain.

This loss-avoidant behavior as well as lack of gain seeking was suggested when authors found that those under positive affective conditions were more sensitive to losses than they were to potential gains (Isen, Nygren, Ashby, 1985). In areas of research exploring affect and risk, it was shown that both risk seeking as well as risk aversive behaviour can be demonstrated by those in

positive conditions depending on possibilities of real loss. When stakes were low, hypothetical or the potential loss not meaningful, positive affect is likely to engage risk-prone behaviour. However, under the presence of a real threat, positive affect leads to a higher degree of risk-averse behaviour (Isen & Arkes, 1988; Isen & Patrick, 1988).

While not directly related to the risk literature, another study by Isen & colleagues found evidence of higher degree of variety seeking behaviour displayed by people under positive affect, when the products were safe to consume. Again, the possibility of harm to safety (which can be compared to a meaningful loss) played a role in whether people were more or less variety seeking. (Kahn & Isen, 1993)

Therefore, this dual nature of positive affect is consistent under mood maintenance theory and is explained by the main motivation to maintain the current affective state but avoid causing any deterioration to their mood.

Therefore, it may seem that those in a happy mood have a higher preference of avoiding potentially adverse outcomes which can cause a deterioration in their moods, such as that from incurring a loss. In that case, happy mood individuals should be more efficient in tasks where the primary focus is avoidance of potential losses or adverse outcomes as it is in line with their motivations (Lerner and Tiedens, 2006). Moreover, they are less likely to engage in gain-seeking when there is an adverse outcome salient in the decision task.

2.4 Attribute framing's effects on judgment and decision making

(This section aims to shed light on how contextual factors such as framing of attributes can have an impact on evaluation and judgment and decision making tasks. The section also introduces the negative framing and discusses its effects. Since the study uses negative attribute framing, this section explores how negative framing could align the objective of the task with the motivations that underlie those in a happy state)

In the context of recent studies that explore the impact of incidental emotions on the status quo bias, the attributes used to describe the products are generally positive (or ambiguous). That is, for these attributes more is better. An example is if one was then comparing two similar phones (one framed as the status quo) that differ on two positively framed attributes such as screen strength and battery strength, and one ranked higher on one attribute and low on another.

A fundamental observation is that positive framing brings about positive associations with the object in question. Further, it can also diminish the prominence of negative outcomes. This spotlight on the positives can obscure the presence of conflicting goals, effectively reducing the need for individuals to grapple with tough trade-offs. (Schneider, 1992).

It has also been suggested that people actively search for negative or positive attributes depending on the objective of the task, for example choosing the best option or rejecting the worst option (Shafir, 1993). A positive frame could then hide the negative attributes that one might look for when approaching a choice problem with the motivation of avoiding adverse events, which is consistent with the motivation of people in a happy mood.

According to mood maintenance theory, a person under positive affect would try to avoid the possibility of a loss and not engage in gain-seeking behaviour, therefore selecting the safer status quo option. (Isen, Nygren, Ashby, 1985) While one could gain one attribute, it would lose on the other attribute. Therefore, in this case one is comparing gains and losses in the domain of positive outcomes.

Positive affect is also more likely to foster optimistic evaluations as it has been found to cue positive material in the memory (*e.g.*, Isen, Shalcker, Clark, & Karp, 1978). Therefore, under positive affect, one is likely to have optimistic expectations about the status quo choice. This would be further strengthened under the domain of positive outcomes.

However, if the attributes were to be framed negatively, it would emphasize the potential for an adverse outcome (screen breaking or battery deteriorating) relative to desired outcomes (screen remains intact, battery performs efficiently). To reduce a potential undesirable outcome might be more aligned with the objectives of one under positive affect than to increase a potential desirable outcome.

Both actions here deal with removal of unwanted outcomes, whereas, both actions deal with increasing desired outcomes under positive framing of attributes. Since positive affect creates a motivation to avoid any mood threatening outcomes, it should lead to higher evaluation of both choices/actions when both actions deal with removing mood threatening outcomes. However, when actions deal with increasing positive outcomes, one might find no pronounced difference in avoiding negative outcomes from either option. Since actions generally require reasoning compared to inaction, a lack of clear need for switching might result in selecting the status quo choice (inaction).

2.5 Hypothesis

According to the mood maintenance hypothesis, those in a positive affective state will make decisions that maintain or improve their current emotional state and avoid any meaningful loss.

In previous studies, positive framing of the attributes of choices (exception - Luce, 1999) presents itself in the domain of positive outcomes with no potentially meaningful loss from sticking with the status quo choice while a potential loss could occur from choosing the alternative. For example, when choosing between two cell phones such that they both slightly differ on attributes such as battery strength and screen strength.

(1) However, when the attributes are framed negatively, one has to choose between two negatives (hence, in the domain of negative outcomes). Since the sensitivity to negative mood threatening outcomes is higher under positive affect, one will be more evaluative in their decision. Now the choice is between sticking with the current negative or facing uncertainty amongst possible gain (reduction in current negative) or loss from choosing the alternative. While before, one had to choose between sticking with current positive features or try to potentially improve or worsen it.

(2) Negative framing highlights the otherwise salient negative information related to each outcome, but also highlights the potential loss that one would accrue from staying with the status quo choice. This should reduce the attractiveness of the status quo choice.

The negative framing of attributes in the decision making problem should then align the objectives of the task, which is to choose the least adverse outcome, with the motivations of those in a happy mood (as explained under mood maintenance). The heightened sensitivity to losses (mood threatening negative outcomes) in a happy mood should lead to a more detailed evaluation of the task,

Adding to this, the highlighting of possible negative attributes of status quo outcome should reduce the safety that is associated with inaction (through choosing the status quo option). Both of these mechanisms should work in concert to reduce the status quo bias. There may also be a compounding effect which could reduce the status quo bias to a higher degree (as opposed to the effect that negative attribute framing should have on the SQ choice alone).

Using the above mentioned reasoning, the following hypothesis can be developed:

H1: Happy affect will lead to a lower selection of the status quo choice under negative attribute framing than under positive attribute framing.

The first hypothesis aims to find whether framing (positive vs negative) can lead to a potential reduction in the status quo choice. By comparing those under happy affect in different frames, one can see how the motivations and decreased attractiveness of status quo choice lead to a difference in outcome selection.

H2: Negative attribute framing will lead to a lower selection of the status quo choice under happy affect condition compared to those who are in the no affect condition (neutral)

The second hypothesis seems to see whether the effect for the loss frame is more for happy individuals compared to neutral individuals. If the difference is significant, then it may be inferred that there is indeed a compounding of affect motivations and framing effect and not solely the framing effect. That is, affect accompanying motivation plays a key role.

EXPERIMENT

3.1 Aim of the experiment

The experiment is designed to find the interaction of different affective states such as happiness with framing (positive and negative attribute) on the status quo choice selection. The 2x2 design allows to study the effect that the different framing has on the status quo reliance of individuals in a happy condition. Status quo selection is the outcome variable of interest and is represented by selecting option A) which says stick with brand A (see figure 4).

It also allows us to test whether the framing effect produces similar effects across all affective states or not. A possible difference might expose different objectives that one undertakes when in a happy affective state, such as maximizing resources or minimizing potential loss of resources, which may impact their decision making and judgment.

Drawing from the mood-maintenance framework, those in a happy mood are motivated to maintain their current affective state and are more avoidant of potentially mood threatening events such as a potential loss. In the positive framing condition, those in a happy mood are more likely to rely on the status quo choice because the potential loss from switching might not be worth it to them, despite the potential gain. Moreover, they may also see the status quo option as safe.

In the negative framing however, possible drawbacks of sticking with the status quo option are highlighted. Those in a happy mood, being motivated to avoid a potential loss, should be more evaluative and rely less on the status quo option. Also, since both attributes are negative, we are dealing in the negative domain of outcomes (that is, each option provides disutility) as opposed to the positive framing set up. Those in a happy mood must therefore be more sensitive and avoid any possible adverse events (disutility), causing them to evaluate both options more rigorously.

Therefore, an interaction between happiness treatment and negative framing treatment should lead to a reduction in status quo selection, compared to other groups.

3.2 Methodology & experimental design

To test the hypothesis stated above, an online survey was conducted involving an emotional manipulation part & a decision making task where one was given a scenario to choose between two similar smartphones where one of the options was framed as the status quo.

The survey was open for the period of June 2023 - Aug 2023 and was made and shared using the online software Qualtrics.

The experiment implemented a 2x2 between subjects design considering positive affect and no-affect condition as well as negative and positive frame condition. The assignment of subjects to the groups was randomized through the use of Qualtrics's option to randomize assignment to a group. In total, 4 different groups were created.

	Positive Frame	Negative Frame
No affect	<i>Group 1: No affect condition x Positive framing condition</i>	<i>Group 3: No affect condition x Negative framing condition</i>
Happy Affect	<i>Group 2: Happy affect condition x Positive framing condition</i>	<i>Group 4: Happy affect condition x Negative framing condition</i>

Table 1: 2x2 Table explaining the different treatment groups based on the Affect X Framing condition

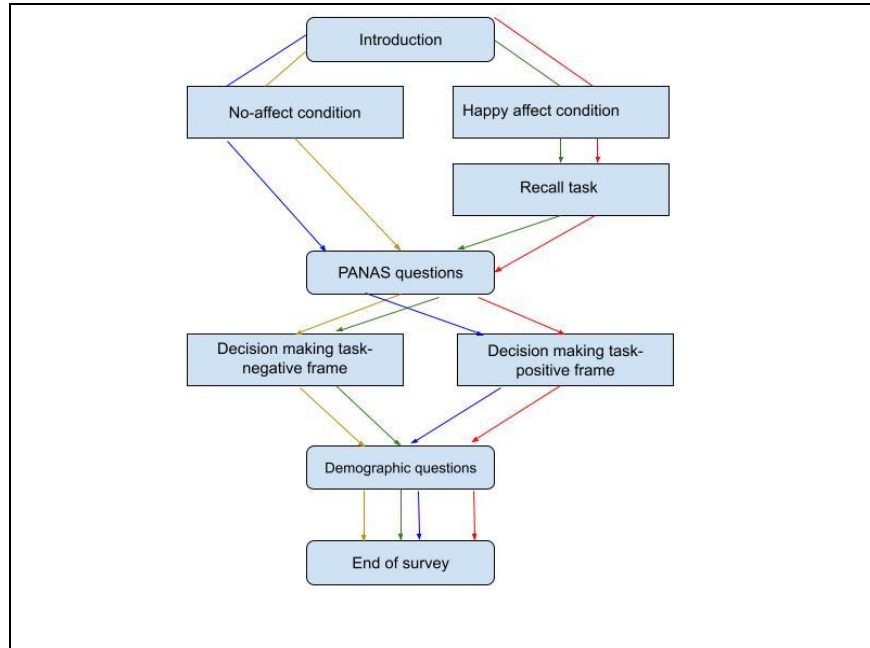


Figure 1 : this figure represents the outline of a survey based on how individuals are assigned to different groups. The colour Red represents the Happy Affect x Positive Framing group, Green represents Happy affect x Negative Framing group, Yellow represents the No-affect x Negative Framing group and lastly, the colour blue represents the No-affect x Positive Framing group)

Introduction

The survey starts by informing the participants about the survey. It mentioned that the survey is completely anonymous and that participants can quit the survey at any time they wanted. The participants were thanked for their time.

Below this, a message regarding consent option was presented indicating that participants are over 18 and understand that the data collected will be used solely for the purposes of the research.

For those assigned to the Happy Affect condition, the next part of the survey included the recall task, whereas for those assigned to the No-Affect condition, the survey went straight to the PANAS questionnaire.

Emotional Induction

Those assigned to the happy affect treatment were introduced to a recall task which asked them to think of a recent event in their lives that made them happy and then asked them to write in detail what made them happy. This is one of the most common methods implemented for successfully inducing an emotion and has been used for the same purpose in several studies.

“Recall a moment from your life that made you extremely happy. What was the event? What was it particularly that made you feel happy? Please try to describe with as much detail as possible”

After the task, participants were directed to the emotional manipulation check through the use of the PANAS (Positive Affect Negative Affect) questionnaire. For those who were assigned to the no-affect condition, the PANAS questionnaire was introduced right after the introduction part.

The scale comprises 20 items, where 10 items measure positive affect and 10 items measure negative affect. Each item is rated on a 5 point likert scale ranging from 1=very slightly/not at all to 5= extremely. A total score is then calculated separately for positive affect and negative affect by adding the scores obtained from the positive affect items and then the negative affect items, respectively. A higher score of positive items would mean a higher positive affect was generated, while a higher score of negative items would imply that a higher negative affect was generated.

It is important to note that the PANAS accounts for the possibility of both positive and negative affect existing simultaneously, therefore measuring positive and negative affect separately and not as a combined sum. An example is someone who might feel happy upon recalling events in life that made them feel extremely happy while also feeling sad due to those events no longer existing in their current experience (nostalgia).

Participants were given the following instructions regarding the scale: **“Indicate the extent to which you are feeling this way at the current moment”**.

Decision making task

After the completion of the PANAS questionnaire, participants were directed to the decision making task where one had to choose between two identical products (smartphones) that were mostly similar except on certain attributes. The following scenario was presented to the subjects:

Imagine the following scenario and choose one of the two options.

Your work company provides you with a rental phone with a contract lasting a year. You have been using Brand A for the last year and your contract is coming to an end. You have the option to either renew the contract with Brand A or choose Brand B.

Based on your choice, your company will give you the latest model of the phone. The two phones are identical and differ only on two attributes as displayed below. (Assume that there are no costs of switching the contracts)

Subjects were either assigned to the positive framing condition or the negative framing condition at random and received the same message as above in both conditions, however the options were presented differently under each treatment. The description of the attributes included 3 options - High, Medium and Low.

Attributes	Brand A	Brand B
Screen Strength	High	Medium
Battery Strength	Medium	High

Figure 2: Presentation of attributes under positive attribute framing; Participants assigned to groups 1 and 2 would see this as a part of their choice problem

Attributes	Brand A	Brand B
Screen Fragility	Low	Medium
Battery Deterioration	Medium	Low

Figure 3: Presentation of attributes under negative attribute framing; Participants assigned to groups 3 and 4 would see this as a part of their choice problem

The negative framing was used in a way such that the choice problem remains virtually the same. For example, if the phone A scored High on screen strength then it would score Low on screen fragility.

Also under the negative attribute framing as well as positive attribute framing, moving from Low to High would increase the negative attribute as well as the positive attribute. Therefore a High Screen Fragility would imply that the screen is more fragile (relative to Medium/Low), while a High Screen strength would imply that the screen is more strong (relative to Medium/Low).

The following options were presented to the participants and remained the same in both positive and negative frames. Sticking with Brand A would represent the status quo choice while switching to Brand B would represent the alternative choice.

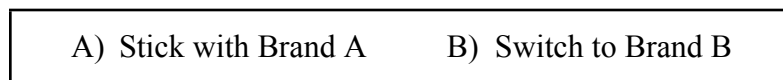


figure 4: Presentation of the choices presented to the participants; Stick with brand A would mean the status quo was selected while option B would represent the alternative selection

The smartphones were similar across all attributes (not mentioned) and only differed across two attributes related to the battery and the screen of the phone. The choice problem that the participants received differed on how the attributes were framed, that is, while the scenario and the options remained the same, the attributes were framed either positively or negatively.

The assignments to the framing treatments were randomized, as was the case with the affect induction, through qualtrics. The positive framing included attributes “Battery Strength” and “Screen Strength” While the negative framing included attributes “Battery Deterioration” & “Screen Fragility”.

The use of smartphones as the product category of choice was made for accessibility. While previous studies employed products such as cars, health club subscriptions etc, this task used smartphones as the category simply because most people have experiences (and likely preferences) when it comes to smartphone purchases.

Further, while no pre-tests were conducted, the attributes were selected after reading various articles on the preferences of attributes of smartphones. A good battery life and screen quality (as

well as durability in general) were considered one of the top attributes that consumers look for. The following articles were used in the assessment: “Which Smartphone Features Really Matter to Consumers?” (GWI market research); “What features are most important to you in your next phone purchase?” (Statistica market research)

Another reason for the use of these attributes was that they directly impact immediate use. However, the lack of a pretest serves as a major limitation in our study and is discussed in further detail in the limitations section.

After this, the last section of the survey asked demographic questions such as age, gender, level of educational attainment, country of origin and country of residence. This concluded the survey.

3.2 Results and Discussion

Sample Description

The experiment involved 179 participants with diverse age groups, education levels and countries (of origin as well as residence) to ensure generalizability of the results. Among participants, there were 92 men, 72 women and 2 non-binary persons. 13 respondents chose the option “prefer not to say”.

The age of the participants ranged from 18 to 54 years, with a mean age of 24.7 years, (SD= 7.588405) Participants resided from a total of 15 different countries, with the most number of participants residing in India (100) followed by the Netherlands (50). Regarding the educational attainment levels of the participants, the majority of the respondents had a University Bachelor's Degree (85) which, followed by participants with a Graduate or professional degree (44).

	Positive Frame	Negative Frame
<i>No affect</i>	47 (Group 1)	47 (Group 3)
Happy affect	43 (Group 2)	42 (Group 4)

Table 2: this table represents the different treatment groups and the sample size of each group

Due to incomplete responses, the distribution of responses amongst treatments was not equal. Groups with No-affect condition (under both positive and negative framing conditions) had 47 respondents each, while the Happy Affect x Positive framing group and Happy Affect x Negative framing group had 43 and 42 respondents, respectively. *(more detailed summary of these statistics can be found in the Appendix under the section B, titled summary statistics)*

Emotional induction check

A one-tailed t-test was used to check whether the recall task had a desired effect on one's affective state. Using the measures obtained from the PANAS scale, those in happy affect treatment groups on average had a higher positive PANAS score than those in the no-affect condition ($M = 30.458$ vs 25.755 , p (one-tailed) = 0.0002^{***} ; p (two-tailed) = 0.0005^{***}).

Therefore, we conclude that the recall task introduced to those in the happy affect condition was successful in generating a higher positive affect.

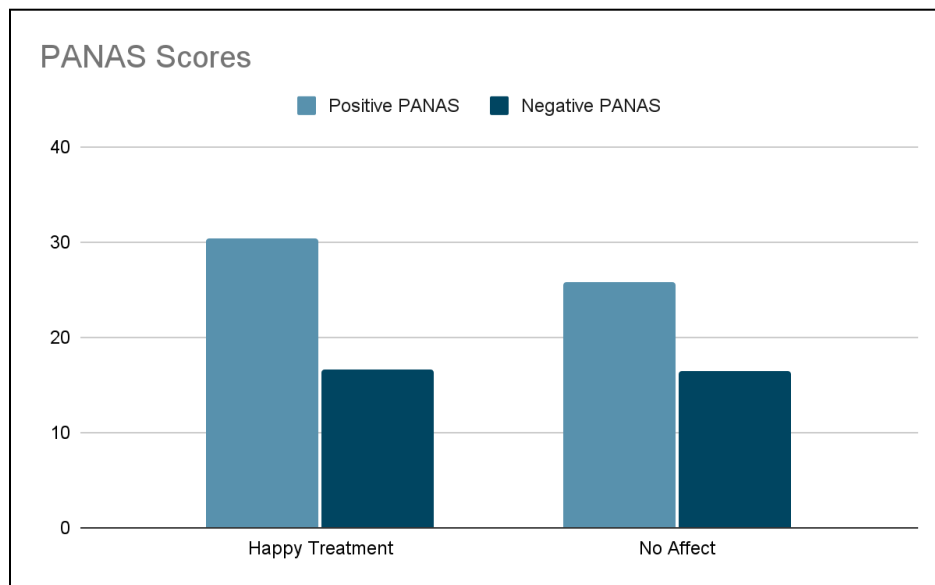


Figure 5: The PANAS scores of respondents in the happy treatment group and the No-affect group

The result of the t-test comparing the means of negative PANAS scores between the two groups revealed no significant difference ($M = 16.6$ vs 16.47872 ; p (two-tailed) = 0.9137).

Additionally, participants that received the happy affect treatment had a higher positive PANAS score (30.45882) compared to the negative PANAS score (16.6). The difference was statistically significant at the 1% level (p (two-tailed) = 0.000^{***}).

Participants that received the no-affect treatment also had a higher positive PANAS score relative to their negative PANAS score ($M= 25.75532$ vs 16.47872 , $p(\text{two-tailed}) = 0.000^{***}$).

Another implication of the results of the affect check is that while those in no-affect condition displayed less positive affect than those in the happy affect condition, they still were on average, more positive than negative in regards to their affective states.

This could suggest that the differences noted in the results of the decision making task between the two groups could be the intensity of the positive affect and not the affect itself. (For further discussion, refer to the limitations section).

Analysis of the decision making task

Overall, the status quo option was selected 94 times while the alternative option was selected 85 times. A distribution by group revealed that only group 4 (Happy affect x Negative Framing) selected the alternative option more than the status quo choice, while all other groups selected the status quo choice more than the alternative option.

It was found that those in the happy affect x positive framing condition displayed the highest percentage of status quo selection (58.139%), followed closely by those in the no-affect x negative framing condition (57.44%), no-affect x positive framing condition (55.319%) and lastly, the happy affect x negative framing condition (38.09%).

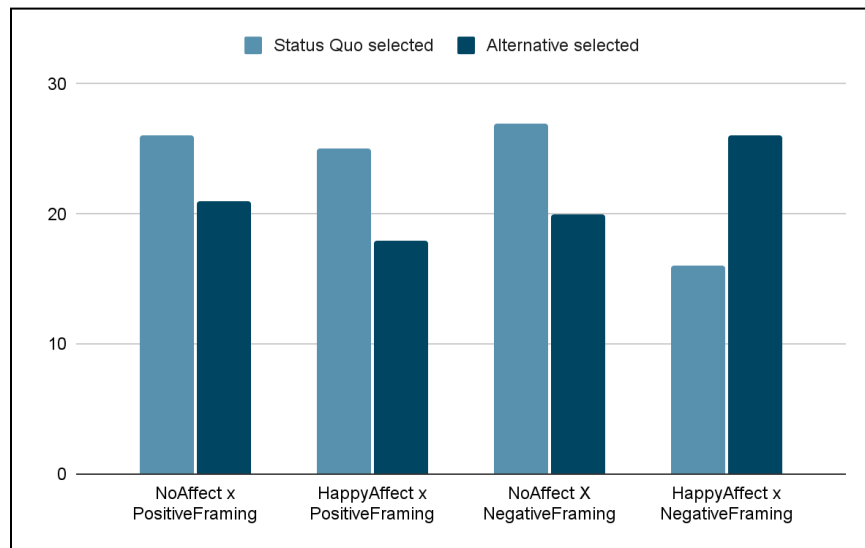


Figure 6: frequency of status quo option selected and the alternative choice selected by all 4 groups

Next, several z-tests of proportions are conducted to see whether there exists any significant difference in the proportion of status quo option selection amongst the different groups.

H1: Happy affect will cause a lower selection of the status quo choice under negative attribute framing when compared to positive attribute framing.

To test the hypothesis that happy affect leads to a lower status quo selection under negative framing relative to positive framing, a one-tailed z-test of proportions was used to compare the proportion of status quo choice selected amongst group 2 (58.139%) and group 4 (38.09%).

Results of the z test revealed that the proportion of participants selecting the status quo option under group 4 was significantly less than those in group 2 ($z = 1.8490$, p (one-tailed) = 0.0322*).

Thus, an association between framing and status quo selection was found, for those subjects that received the “happy affect treatment”. (*Group 2 and Group 4*). That is, for happy individuals, those who received the positively framed attributes in the decision making task were more likely to select the status quo option than those who received negatively framed attributes.

For the effect size, cohen’s h was calculated and found to be 0.404. This suggests that the effect of the treatment was somewhere between small and medium. These results are supportive of the first hypothesis.

H2: Negative attribute framing will cause a lower selection of the status quo choice under happy affect condition compared to those who are neutral.

Similarly, to test the hypothesis that negative framing leads to a lower status quo selection under positive affect compared to no-affect, a one tailed z-test of proportions was used again to compare the proportion of individuals who selected the status quo option between group 3 (57.44%) and group 4 (38.09%).

Again, results of the z test revealed that the proportion of participants selecting the status quo option under positive affect x negative framing was significantly less than those in group 2 ($z = 1.8238$, p (one-tailed) = 0.0341*).

Thus, an association between affective state and status quo selection was found, for those subjects that received the “negative framing” treatment (*Group 3 and Group 4*). That is, for participants which received the decision problem framed negatively, those under the happy affect

condition were less likely to select the status quo option, relative to those who were not. This is in line with hypothesis 2.

For the effect size, Cohen's h was calculated and found to be 0.389. This suggests that the effect of the treatment was somewhere between small and medium.

Additionally other z-tests were also conducted along to test for associations between happy affect and Status Quo selection as well as negative framing and no significant associations were found. That is, those participants that received the "positive framing" treatment did not show a difference in status quo selection in either affective states. Also, participants that received the "no affect" treatment did not show a significant difference in status quo selection under negative framing vs positive framing. (See appendix section B, Table B8).

Regression analysis

A logistic regression was conducted with the binary dependent variable "Status quo selection", indicating 0 for when the alternative was selected and 1 when the status quo was selected. The independent variables were "Happiness" and "Negative Frame" and other control variables were included such as age, gender etc. (see list below).

Variable Name	Variable Description
Status Quo Option	Binary Variable denoting whether the status quo option was selected by the respondent in the decision making task, that is, whether they chose option A. 1= Status Quo option selected, 0= Alternative option selected.
Happiness	Binary Variable that denotes whether the respondent received the "Happy Affect" Treatment. 1 = respondent received the happy treatment, 0= respondent received the no-effect treatment.
Negative Frame	Binary variable that denotes whether the respondent received the negatively framed information/was a part of the "Negative Frame" treatment. It takes values 0 and 1, 0 denoting the respondent was a part of the "Positive Frame" condition while 1 denotes the respondent was a part of the "Negative Frame" condition.
Age	Denotes the age of the respondent. Age is treated as a continuous variable.
Gender	Categorical variable denoting whether the respondent is Male, Female or Other. "Other" consist of those who selected "Non-binary/third gender" "Prefer not to say" or "Prefer to self describe". The variable takes values 1-3.
Nationality	Categorical Variable that denotes which country the respondent is originally from.. This variable takes value 1-4 with 1 =India, 2=Netherlands, 3=others, 4 =Greece
Residence	Categorical Variable that denotes which country the respondent is currently

	living in. This variable takes value 1-3 with 1 =India, 2=Netherlands, 3=others.
Education	Categorical Variable that denotes the level of educational attainment of the respondent. It takes values 1-4. 1= Completed school at most 2= Some University but no degree 3= University Bachelor's degree 4= Graduate or Professional degree. 5= Prefer not to say.
Group	Categorical variable denoting which treatment group the respondent was assigned to. It takes values 1-4 for Groups 1-4 respectively.

The result obtained was insignificant for all the variables. Another regression with the interaction term (Happy Affect x Negative Frame) was conducted and revealed insignificant results for all variables, including the interaction term.

Binary Dependent Variable: Status Quo option selected; 0 = alternative selected, 1= status quo selected

	Coefficient	Std. err.	z	P> z	[95% conf. interval]	
Happy Treatment	-.3376504	.320559	-1.05	0.292	-.9659345	.2906338
Negative Frame	-.3729842	.3152571	-1.18	0.237	-.9908769	.2449084
Gender						
1	-.0473007	.601012	-0.08	0.937	-1.225263	1.130661
2	-.5080041	.6240638	-0.81	0.416	-1.731147	.7151386
Residence						
1	.280869	.5595705	0.50	0.616	-.8158691	1.377607
2	-.5571956	.5423558	-1.03	0.304	-1.620193	.5058023
Nationality						
1	-.2335641	.6266175	-0.37	0.709	-1.461712	.9945836
2	.5798792	.6884409	0.84	0.400	-.7694401	1.929199
4	.6676619	.7864376	0.85	0.396	-.8737275	2.209051
Education						
2	.2402358	.6567945	0.37	0.715	-1.047058	1.527529
3	-.6868964	.5046437	-1.36	0.173	-1.67598	.3021871
4	-.0863991	.5978135	-0.14	0.885	-1.258092	1.085294
5	.2119038	1.038967	0.20	0.838	-1.824435	2.248242
Age	-.0093328	.0240697	-0.39	0.698	-.0565084	.0378429
Constant	1.295243	.9643038	1.34	0.179	-.5947579	3.185244

Number of observations: 179

Table 3: this table represents the results of the logistic regression of the outcome variable Status quo choice using explanatory variables "Happiness" "Negative Frame". Other variables were added

While the result for happiness was not surprising, it was believed that negative framing across all affective states would lead to a decrease in the status quo choice, which was not in line with the result.

Negative framing of the attributes should lead to a reduction in the status quo attractiveness (or highlight the potential negatives of sticking with the status quo). However, negative framing did not lead to a reduction in status quo selection amongst individuals in the no-affect condition. One possible explanation for this can be that the negative attribute framing also reduced the attractiveness of the alternative choice. Further, the motivations of those under the No-Affect condition could play a role in increasing (or no change) the status quo selection.

Binary Dependent Variable: Status Quo option selected; 0= alternative selected, 1= status quo selected						
	Coefficient	Std. err.	z	P> z 	[95% conf. interval]	
Happy Treatment	.0859906	.4568409	0.19	0.851	-.8094012	.9813824
Negative Frame	.0325453	.4426142	0.07	0.941	-.8349625	.9000532
Happy*NegFrame	-.8555013	.6581159	-1.30	0.194	-2.145385	.4343822
Gender						
2	-.4200319	.3374302	-1.24	0.213	-1.081383	.2413192
3	.08875	.6046755	0.15	0.883	-1.096392	1.273892
Residence						
2	-.8105696	.6332405	-1.28	0.201	-2.051698	.4305589
3	-.16047	.5684638	-0.28	0.778	-1.274639	.9536987
Nationality						
2	.6998629	.8065039	0.87	0.386	-.8808558	2.280582
3	.1088855	.6362338	0.17	0.864	-1.13811	1.355881
4	.8509188	.8548042	1.00	0.320	-.8244666	2.526304
Education						
2	.1410904	.665403	0.21	0.832	-1.163076	1.445256
3	-.7282424	.5086282	-1.43	0.152	-1.725135	.2686506
4	-.1919009	.6065362	-0.32	0.752	-1.38069	.9968883
5	.1270048	1.050623	0.12	0.904	-1.932179	2.186188
Age	-.0061901	.0242278	-0.26	0.798	-.0536757	.0412955
Constant	1.064591	.7732858	1.38	0.169	-.4510212	2.580203
Number of observations: 179						

Table 4: This table represents the results of the logistic regression of the outcome variable Status quo choice using explanatory variables “Happiness” “Negative Frame” and their interaction term “Happy*NegFrame”.

Additionally, it was also expected that the interaction effect between the happy affect and negative framing treatment to have a significant impact on the status quo selection. Since the negative framing was expected to be more in line with the motivations of those in a happy mood, which is to avoid any adverse outcomes as opposed to seeking better outcomes, it should have had a negative effect.

While the group with this combination (Happy Affect X Negative Framing) showed the least amount of status quo reliance, it also had the lowest sub sample size (42). This could potentially play a role in providing insignificant results.

3.3 Discussion

The results discussed above suggest no clear evidence of the combined effect of happy affect treatment and negative framing treatment leading to a significant reduction in the selection of status quo choice, relative to both groups 2 (happy affect x positive framing treatment) and 3 (No affect x negative framing treatment).

A logistic regression was conducted which revealed no significant results for both the treatment variables “Happiness” or “Negative Frame”. Further, an interaction term was used in another model, which also gave insignificant results for all predictor variables. These results are not in line with the hypotheses H1 and H2, as well as the mood-maintenance framework as discussed previously in the literature section.

Those in a happy mood are motivated to maintain their current affective state (Isen & Simmonds, 1978) and are relatively more sensitive to losses than gains (Isen, Nygren, Ashby, 1985). Due to this motivation to avoid losses and not necessarily engage in gain seeking behaviour, those in happy affect treatment were expected to have a higher status quo bias under the positive framing condition, relative to neutral (no affect) individuals.

While those in the happy affect x positive framing condition displayed a higher status quo selection than those in the no-affect x positive framing condition, the difference in the proportion of status quo selection was not significant between the two groups.

By highlighting the negative outcomes present in the task and potentially aligning the objective of the task with the motivation of those in the happy affective states, it was hypothesized that happiness would lead to a lower status quo selection in the negative frame. In the negative framing condition, those under happy affect condition had a lower status quo selection than those

in the no-affect condition. The difference in proportion of the status quo choice across the two groups was statistically significant.

Comparison of the status quo selection under negative framing vs positive framing amongst individuals in the happy affect condition revealed that those in the negative framing condition had a significantly lower status quo selection, relative to those in the positive framing condition.

This difference observed in individuals in the happy affect condition could potentially depend on their motivation. In a positive frame, one may not see a meaningful loss in sticking with the status quo but a potential loss from switching is possible. Moreover, since these two options are very similar, it just might not be worth switching to the alternative option.

However, in the negative framing condition, the potential drawback of sticking with the status quo option is highlighted. Also, since both options have their attributes framed negatively, happy individuals may be more motivated to make the decision with more consideration, as making a wrong decision might appear more harmful (compared to when attributes are framed positively) to one's affective state, potentially worsening it.

Comparison of negative framing vs positive framing across individuals in the no affect condition revealed no significant difference in status quo selection. Another comparison of status quo selection amongst groups no affect x negative framing and happy affect x positive framing revealed that those in happy affect condition had a lower status quo selection, relative to those in a no-affect condition, under negative framing.

These results suggest that the use of negative framing may not have a similar effect on the status quo selection, across individuals in different affective states. It is possible then, that the motivations of those in a happy mood might play a big role in how negative framing effects their status quo reliance.

Overall, the results of the z-tests suggest that the use of negative framing had a significantly different impact on the status quo selection depending on the affective states. It also suggests that when exposed to negative framing, those in the happiness treatment displayed a considerably lower status quo bias (relative to those in the no affect condition), however under the positive frame, this effect was not present.

While it is clear that the treatments were successful in inducing the effects on the status quo reliance in line with the hypothesis, it is not conclusive whether emotions were the cause of the contribution or just the treatment. This is further addressed in the limitations.

3.4 Limitations

There are several limitations that exist in this study and should be considered when making inferences about the results observed.

First, the sample size collected may not have been large enough based on power analysis. For a 20% effect size between groups, Gpower estimates that the sample size should be 77 observations per group. However, the treatment groups in this study received 47 observations for two groups, and 43 and 42 for the remaining groups. Further, It may be possible that the discrepancy observed in the z tests and regression results could be due to a smaller sample size than needed.

Secondly, While the treatment was successful in reporting a higher positive affect score, it is worth noting that those in the no-affect condition also had a higher positive affect score than the negative affect score. Therefore, it could be that those in the no-affect condition were mostly in a positive affective state such as happiness.

However, being exposed to the recall task saw a significant difference in the proportion of status quo selection, relative to not being exposed to the task (under negative framing). Further, those in happiness condition saw a significant difference in the status quo selection under positive/negative framing but individuals in the no affect condition showed no such difference under the framing conditions. This suggests some differences amongst those who were exposed to the recall task compared to those who were not.

One possible reason behind the differences noted could be that while the No-Affect group reported significantly higher positive PANAS scores than negative PANAS scores, there may be a threshold of positive affect (related to intensity of positive affect experienced) which separates those under the condition, such that the effects of happiness on the status quo selection only occur above a certain level. However no such correlations between PANAS scores and the status quo bias was found. Another possible explanation could be that while Positive PANAS scores were higher, they were not necessarily representative of “happiness” and could be other positive affect such as pride or calm, while those exposed to the recall task were happy due to the nature of the task (Recalling a happy memory might specifically induce happiness). However, this cannot be tested.

While the paper aims to study the impact of happiness, we used a PANAS scale as eliciting one specific emotion at a time can be very difficult, compared to positive/negative affect. It has been noted in recent studies that valence alone can be a limitation to understanding the effect of emotions on the status quo bias as different emotions that share a similar valence can produce contrasting effects. Therefore, it is entirely possible that those in the happy affect treatment

group also contain positive affective states other than happiness, which might have a different outcome.

In the decision making task, the attributes were chosen on the basis of market research articles discussing preferences for smartphone attributes and no importance ratings test were conducted (such as one conducted by Luce, 1999). It is possible then that there isn't an actual status quo bias and that one attribute is majorly preferred over the other. While this could be a strong reason for the bias observed for option A (which had a lower battery strength and a higher screen strength), this would not explain why a strong reversal in preferences was noted by those in Happy Affect X Positive Framing condition, who selected the brand B (which had lower screen strength but higher battery strength). Also since this reversal was not observed under those in the No affect x Negative Framing condition, it is unlikely to be solely a framing effect.

Since the decision making task was a hypothetical situation, some respondents might not take it seriously, which can also have an impact on the status quo selection. Since behaviour of those in happy moods have shown to alter across real vs hypothetical decision making situations, it is worth considering that a real life situation might produce contrasting results. For example, those in a happy mood when faced with extremely strong real threats might end up favouring the status quo option, even upon rigorous evaluation of the situation.

Lastly, while it is hypothesized that the loss-avoidance motivation of those who are in a happy state can lead to a selection of status quo (under positive framing) as well as reduction in status quo choice, the reasoning or motivations were never directly tested. It could be that those in the happy affect and negative framing condition simply found the status quo as the less attractive option. While this line of reasoning was partially addressed by finding the effect of negative framing on those in the no affect condition, it is still possible for those particularly in the happy affect condition to decrease their status quo selection when options are framed with negative attributes due to some other mechanism.

CONCLUSION

In our study of exploring the impact of incidental happiness on the status quo bias when under different framing conditions, we employed both logistic regression and z tests of proportions to analyze the effect of different treatments on the status quo choice selection.

The logistic regression, incorporating both “happiness” and “negative framing” as binary predictors yielded no significant effects. These findings were consistent even after adding an interaction term (Happiness#Negative Framing) to account for interactive effects that were hypothesized based on the literature.

However, a closer examination of the proportion of status quo selection across different groups revealed a different story. One-tailed Z-tests of proportions revealed that the treatment group exposed to both Happy affect and Negative framing had a significantly lower proportion of status quo selection, relative to both the Happy affect and Positive framing treatment as well as the No affect and Negative Framing group. Further, the effect size was found to be less than moderate.

The possible reason behind this discrepancy noted could be due to power differentials between the two methods. While the effect was significant (which was captured by the use of z-tests), the required sample size as per power analysis was more than the sample size used per group. Therefore, a smaller sample size might be the reason for this difference. It could also be that the effect size was actually smaller than expected. Another potential reason could be that the model was misspecified.

While the z tests provide some support to our hypothesis, the regression findings reject the hypothesis. Therefore, while there is some evidence suggesting that the interplay between happiness and negative framing have a negative effect on the status quo selection, this relationship requires further explanation and validation.

The presence of happiness in participants under the no-affect conditions further posed as a strong limitation, potentially clouding the effects of happiness on the status quo option selection. That is, while the treatment group exposed to happiness chose the status quo option as hypothesized, it cannot be said that it was the mere presence of happiness that caused this.

Therefore we conclude that although we observed an association between those who were exposed both to the happiness recall task and negative framing, and the status quo selection, the findings do not provide clear support for our hypotheses.

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Appendix

A. Information regarding the survey conducted

Dear Participant, thank you for taking the time to participate in this survey. My name is Shubham Kumar and this survey is for a research I'm conducting on decision making as a part of my Master's Thesis at Erasmus University Rotterdam.

Your answers will remain anonymous and will only be used for the purposes of this research. If you have any questions, please feel free to contact me by email at 651925sk@eur.nl
You can quit the survey at any point if you do not wish to continue.

To proceed, please indicate your consent by confirming the following statement: "I hereby confirm that I am over 18 years of age and willingly agree to participate in this survey. I understand that my responses will be collected anonymously and used solely for research purposes".

I consent
 I do not consent

Figure A1: This is the first page of the survey and explained the study as well as notified participants about anonymity and age conditions.

Q1 ★

Recall a moment from your life that made you extremely happy. What was the event? What was it particularly that made you feel happy? Please try to describe with as much detail as possible.

Figure A2: This section was presented to participants assigned to the happy affect condition.

Q2

Indicate the extent to which you are feeling this way at the current moment.

	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
Interested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Disinterested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Excited	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Upset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strong	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Guilty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Scared	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hostile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enthusiastic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Proud	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Irritable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alert	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ashamed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inspired	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nervous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Determined	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Attentive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jittery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Active	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Afraid	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Figure A3: The PANAS questionnaire which was presented to participants assigned to the happy affect condition.

Q3

Imagine the following scenario and choose one of the two options.

Your work company provides you with a rental phone with a contract lasting a year. You have been using Brand A for the last year and your contract is coming to an end. **You have the option to either renew the contract with Brand A or choose Brand B.**

Based on your choice, your company will give you the latest model of the phone. The two phones are identical and differ only on two attributes as displayed below. (Assume that there are no costs of switching the contracts)

Attributes	Brand A	Brand B
Screen Strength	High	Medium
Battery Strength	Medium	High

Stick with Brand A
 Switch to Brand B

Figure A4: This page of the survey contained decision making. Here, attributes were framed positively. This page was seen by those in the positive framing condition.

Q8 *

Imagine the following scenario and choose one of the two options.

Your work company provides you with a rental phone with a contract lasting a year. You have been using Brand A for the last year and your contract is coming to an end. **You have the option to either renew the contract with Brand A or choose Brand B.**

Based on your choice, your company will give you the latest model of the phone. The two phones are identical and differ only on two attributes as displayed below. (Assume that there are no costs of switching the contracts)

Attributes	Brand A	Brand B
Screen Fragility	Low	Medium
Battery Deterioration	Medium	Low

Stick with Brand A

Switch to Brand B

Figure A5: This page of the survey contained decision making. Here, attributes were framed negatively. This page was seen by those in the negative framing condition.

B. Information regarding the results

Summary Statistics

This section contains the summary statistics to all variables used in the regression study

<i>Gender</i>	<i>NoAffect x Positive Framing</i>	<i>Positive Affect x Positive Framing</i>	<i>NoAffect x Negative Framing</i>	<i>Positive Affect x Negative Framing</i>
<i>Male</i>	21	23	28	20
<i>Female</i>	22	19	13	18
<i>Other</i>	4	1	6	4

Table B1 - Summary Statistics of Gender

<i>Residence</i>	<i>NoAffect x Positive Framing</i>	<i>Positive Affect x Positive Framing</i>	<i>NoAffect x Negative Framing</i>	<i>Positive Affect x Negative Framing</i>
<i>India</i>	27	23	24	26
<i>Netherlands</i>	9	16	16	9

<i>Residence</i>	<i>NoAffect x Positive Framing</i>	<i>Positive Affect x Positive Framing</i>	<i>NoAffect x Negative Framing</i>	<i>Positive Affect x Negative Framing</i>
<i>India</i>	27	23	24	26
<i>Other</i>	11	4	7	7

Table B2 - Summary Statistics of Residence

<i>Nationality</i>	<i>NoAffect x Positive Framing</i>	<i>Positive Affect x Positive Framing</i>	<i>NoAffect x Negative Framing</i>	<i>Positive Affect x Negative Framing</i>
<i>India</i>	33	26	26	33
<i>Netherlands</i>	3	5	4	2
<i>Other</i>	8	10	15	4
<i>Greece</i>	3	2	2	3

Table B3 - Summary Statistics of Nationality

<i>Education</i>	<i>NoAffect x Positive Framing</i>	<i>Positive Affect x Positive Framing</i>	<i>NoAffect x Negative Framing</i>	<i>Positive Affect x Negative Framing</i>
Completed school at most	7	8	4	6
Some University but no degree	5	6	7	1
University Bachelor's degree	26	16	21	22
Graduate or Professional degree.	8	12	13	11
Prefer not to say	1	1	2	2

Table B4 - Summary Statistics of Education

<i>Age</i>	<i>NoAffect x Positive Framing</i>	<i>Positive Affect x Positive Framing</i>	<i>NoAffect x Negative Framing</i>	<i>Positive Affect x Negative Framing</i>
<i>Mean Age</i>	25.7234	23.23256	25.17021	24.90476
<i>S.D</i>	9.042658	5.167836	7.316804	8.192232
<i>S.E</i>	1.319007	.7880877	1.067265	1.264089
<i>95% CI Lower-95% CI Upper</i>	23.06838 28.37843	21.64213 24.82298	23.02192, 27.31851	22.35188 27.45764

Table B5 - Summary Statistics of Age.

Results of t-tests

Happy Treatment group vs No-Affect treatment group									
	Mean Happy Treatment	Mean No-Affect treatment	difference.	95% CI lower.	95% CI upper.	t	df	p	p(two-tailed)
Positive PANAS	30.45882	25.75532	4.703504.	2.09776	7.309249	3.5622	177	0.0002***	0.0005***
Negative PANAS	16.6	16.47872	.1212766	-2.083546	2.326099	0.1086	177	0.4568.	0.9137

Table B6: results of t-test comparing means of positive and negative PANAS scores between those in the happy treatment and those in the no-affect treatment)

Positive PANAS score vs Negative PANAS score									
	Positive PANAS	Negative PANAS	difference.	95% CI lower.	95% CI upper.	t	df	p	p(two-tailed)
Happy Treatment	30.45882	16.6	13.85882	11.2887	16.42894	10.7232	84	0.0000***	0.0000***
No-Affect Treatment	25.75532	16.47872	9.276596	6.930613	11.62258	7.8524	93	0.0000***	0.0000***

Table B7: results of t-test comparing positive PANAS score vs Negative PANAS score for individuals in the happy treatment as well as individuals in the no-affect treatment)

Results of z-tests

The following tables represent the results of the various z tests conducted to see the difference in status quo selection amongst the treatment groups.

- Group 1: No Affect x Positive Framing
- Group 2: Happy Affect x Positive Framing
- Group 3: No Affect x Negative Framing
- Group 4: Happy Affect x Positive Framing

Group	Mean Status Quo choice	Std. err.	[95% conf. Interval]		p	p<0	p>0
1	.5531915	.0725186	.4110576	.6953254	0.7874	0.3937	0.6063
2	.5813953	.0752322	.433943	.7288477			
1	.5531915	.0725186	.4110576	.6953254			
3	.5744681	.0721191	.4331173	.7158189	0.8352	0.4176	0.5824

Table B8: Result z-test of proportions comparing proportion of status quo selection amongst groups 1 & 2 as well as groups 1 & 3)

	Mean Group 2	Mean Group 4	difference.	95% CI lower.	95% CI upper.	z	p(one tailed)	p(two-tailed)
Status Quo Selected	0.5813953	0.3809524	0.200443	-0.0076718	0.408557.	1.849	0.0322	0.0645
	Mean Group 3	Mean Group 4	difference.	95% CI lower	95% CI upper	z	p(one tailed)	p(two-tailed)
Status Quo Selected	.5744681	0.3809524	.1935157	-.0103215	.3973529	1.8238	0.0341	0.0682

Table B9: Result z-test of proportions comparing proportion of status quo selection amongst groups 3& 4 as well as groups 2 & 4)

Regression results

Variable Name	Variable Description
Status Quo Option	Binary Variable denoting whether the status quo option was selected by the respondent in the decision making task, that is, whether they chose option A. 1= Status Quo option selected, 0= Alternative option selected.
Happiness	Binary Variable that denotes whether the respondent received the “Happy Affect” Treatment. 1 = respondent received the happy treatment, 0= respondent received the no-effect treatment.
Negative Frame	Binary variable that denotes whether the respondent received the negatively framed information/was a part of the “Negative Frame” treatment. It takes values 0 and 1, 0 denoting the respondent was a part of the “Positive Frame” condition while 1 denotes the respondent was a part of the “Negative Frame” condition.
Age	Denotes the age of the respondent. Age is treated as a continuous variable.
Gender	Categorical variable denoting whether the respondent is Male, Female or Other. “Other” consist of those who selected “Non-binary/third gender” “Prefer not to say” or “Prefer to self describe”. The variable takes values 1-3.
Nationality	Categorical Variable that denotes which country the respondent is originally from.. This variable takes value 1-4 with 1 =India, 2=Netherlands, 3=others, 4 =Greece
Residence	Categorical Variable that denotes which country the respondent is currently living in. This variable takes value 1-3 with 1 =India, 2=Netherlands, 3=others.
Education	Categorical Variable that denotes the level of educational attainment of the respondent. It takes values 1-4. 1= Completed school at most 2= Some University but no degree 3= University Bachelor's degree 4= Graduate or Professional degree. 5= Prefer not to say.
Group	Categorical variable denoting which treatment group the respondent was assigned to. It takes values 1-4 for Groups 1-4 respectively.

Table B10: List of variables and their description regarding how they are used in the regressions conducted.

Binary Dependent Variable: Status Quo option selected; 0 = alternative selected, 1= status quo selected

	Coefficient	Std. err.	z	P> z	[95% conf. interval]	
Happy Treatment	-.3376504	.320559	-1.05	0.292	-.9659345	.2906338
Negative Frame	-.3729842	.3152571	-1.18	0.237	-.9908769	.2449084
Gender						
1	-.0473007	.601012	-0.08	0.937	-1.225263	1.130661
2	-.5080041	.6240638	-0.81	0.416	-1.731147	.7151386
Residence						
1	.280869	.5595705	0.50	0.616	-.8158691	1.377607
2	-.5571956	.5423558	-1.03	0.304	-1.620193	.5058023
Nationality						
1	-.2335641	.6266175	-0.37	0.709	-1.461712	.9945836
2	.5798792	.6884409	0.84	0.400	-.7694401	1.929199
4	.6676619	.7864376	0.85	0.396	-.8737275	2.209051
Education						
2	.2402358	.6567945	0.37	0.715	-1.047058	1.527529
3	-.6868964	.5046437	-1.36	0.173	-1.67598	.3021871
4	-.0863991	.5978135	-0.14	0.885	-1.258092	1.085294
5	.2119038	1.038967	0.20	0.838	-1.824435	2.248242
Age	-.0093328	.0240697	-0.39	0.698	-.0565084	.0378429
Constant	1.295243	.9643038	1.34	0.179	-.5947579	3.185244

Number of observations: 179

Table B12: this table represents the results of the logistic regression of the outcome variable Status quo choice using explanatory variables “Happiness” & “Negative Frame”.

Binary Dependent Variable: Status Quo option selected; 0= alternative selected, 1= status quo selected

	Coefficient	Std. err.	z	P> z	[95% conf. interval]	
Happy Treatment	.0859906	.4568409	0.19	0.851	-.8094012	.9813824
Negative Frame	.0325453	.4426142	0.07	0.941	-.8349625	.9000532
Happy*NegFrame	-.8555013	.6581159	-1.30	0.194	-2.145385	.4343822
Gender						
2	-.4200319	.3374302	-1.24	0.213	-1.081383	.2413192
3	.08875	.6046755	0.15	0.883	-1.096392	1.273892
Residence						
2	-.8105696	.6332405	-1.28	0.201	-2.051698	.4305589
3	-.16047	.5684638	-0.28	0.778	-1.274639	.9536987
Nationality						
2	.6998629	.8065039	0.87	0.386	-.8808558	2.280582
3	.1088855	.6362338	0.17	0.864	-1.13811	1.355881
4	.8509188	.8548042	1.00	0.320	-.8244666	2.526304
Education						
2	.1410904	.665403	0.21	0.832	-1.163076	1.445256
3	-.7282424	.5086282	-1.43	0.152	-1.725135	.2686506
4	-.1919009	.6065362	-0.32	0.752	-1.38069	.9968883
5	.1270048	1.050623	0.12	0.904	-1.932179	2.186188
Age	-.0061901	.0242278	-0.26	0.798	-.0536757	.0412955
Constant	1.064591	.7732858	1.38	0.169	-.4510212	2.580203
Number of observations: 179						

Table B13: this table represents the results of the logistic regression of the outcome variable Status quo choice using explanatory variables “Happiness” “Negative Frame” and their interaction term “Happy*NegFrame”.

Binary Dependent Variable: Status Quo option selected; 0= alternative selected, 1= status quo selected

	Coefficient	Std. err.	z	P> z	[95% conf. interval]	
Group						
1	.7369654	.4515991	1.63	0.103	-.1481526	1.622083
2	.822956	.4715491	1.75	0.081	-.1012633	1.747175
3	.7695108	.4645696	1.66	0.098	-.141029	1.680051
Gender						
1	-.08875	.6046755	-0.15	0.883	-1.273892	1.096392
2	-.5087819	.6261942	-0.81	0.417	-1.7361	.7185362
Residence						
1	.16047	.5684638	0.28	0.778	-.9536987	1.274639
2	-.6500996	.5500093	-1.18	0.237	-1.728098	.4278988
Nationality						
1	-.1088855	.6362338	-0.17	0.864	-1.355881	1.13811
2	.5909773	.6877567	0.86	0.390	-.757001	1.938956
4	.7420333	.7892282	0.94	0.347	-.8048256	2.288892
Education						
2	.1410904	.665403	0.21	0.832	-1.163076	1.445256
3	-.7282424	.5086282	-1.43	0.152	-1.725135	.2686506
4	-.1919009	.6065362	-0.32	0.752	-1.38069	.9968883
5	.1270048	1.050623	0.12	0.904	-1.932179	2.186188
Age	-.0061901	.0242278	-0.26	0.798	-.0536757	.0412955
Constant	.3647912	.9788834	0.37	0.709	-1.553785	2.283367

Number of observations: 179

Table B15: Output of logistic regression taking treatment groups as explanatory variables. Results show that relative to group 4, being in group 2 and 3 has a higher likelihood of selecting the status quo choice. These results are significant at the 10% significance level.