



Anticipated Regret and Preventive Decision Behaviour among Emerging Adults

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Abstract: Preventive decision-making involves evaluating possible future outcomes before choosing an appropriate action. In uncertain situations, anticipated regret may influence behaviour by allowing individuals to imagine how they might feel if an avoidable negative outcome occurs. This experimental research article examines whether different levels of anticipated regret influence preventive decision behaviour among emerging adults. The study proposes a controlled experimental design in which participants evaluate decision scenarios involving possible negative consequences and varying levels of anticipated regret. Participants are exposed to low, moderate, and high anticipated-regret conditions before choosing between preventive and non-preventive options. Preventive decision rate is considered the primary behavioural outcome, while risk-avoidance intention, decision confidence, decision time, and evaluation of future outcomes are examined as additional measures. The proposed framework aims to determine whether stronger anticipated regret is associated with a greater preference for preventive choices. Simulated experimental values, which are presented only for methodological illustration and do not represent actual participant data, indicate an increasing pattern of preventive decision behaviour across anticipated-regret conditions. The proposed results also suggest higher risk-avoidance intention and longer decision times when anticipated regret is stronger. This research contributes to behavioural decision-making by examining anticipated regret as a future-oriented emotional process that influences choices before outcomes occur. Instead of viewing regret only as a reaction after a decision, the study explores its role in shaping decisions before action is taken. The framework provides a foundation for future empirical research on how prospective emotions influence risk assessment and preventive behaviour.

Keywords: Anticipated Regret, Preventive Decision Behaviour, Emerging Adults, Experimental Decision-Making, Risk Avoidance, Prospective Emotion, Decision Confidence, Future-Oriented Decision-Making

1. Introduction

1.1 Background

Decision-making often requires individuals to choose an action before the outcomes of that action are fully known. In many situations, people must decide between an option that offers immediate convenience and another option that requires additional effort but reduces the possibility of future problems. These decisions become more complex when the likelihood and impact of future outcomes are uncertain.

Preventive decision behaviour involves choosing actions aimed at reducing possible future harm, loss, or difficulty. Such choices often require individuals to accept a present cost or inconvenience in exchange for greater protection against an uncertain outcome. Therefore, preventive decisions involve balancing immediate consequences with possible future benefits.

Emotional processes also influence how individuals evaluate these choices. Anticipated regret refers to the expectation of experiencing regret after a possible future outcome occurs. Before making a decision, individuals often imagine different outcomes and consider which choice might lead to greater regret later. This future-focused emotional evaluation can influence the importance given to potential consequences.

The influence of anticipated regret becomes especially important when preventive action has the potential to reduce a specific negative outcome. If individuals believe that failing to take preventive action would result in significant future regret, they might give greater importance to the preventive option. In this way, imagining a possible future emotional response may influence present decision behaviour.

Emerging adults represent an important group for studying this process because this stage of life involves increasing independence and personal responsibility. During this period, individuals make important decisions related to education, career, finances, health, relationships, and personal goals. Many of these decisions require evaluation of uncertain future outcomes.

However, anticipated regret does not always lead to preventive action. Individuals differ in their perception of risk, tolerance for uncertainty, confidence in decision-making, and

interpretation of future consequences. An experimental approach helps examine the role of anticipated regret while maintaining control over the decision environment.

1.2 Problem Statement

Preventive decisions often involve a conflict between immediate outcomes and uncertain future consequences. Individuals might understand the benefits of preventive action but still choose a less preventive option when the immediate cost, effort, or inconvenience appears more important.

One possible explanation for these differences is the level of anticipated regret associated with future outcomes. When individuals imagine experiencing regret because they failed to take preventive action, the possible future consequence becomes more personally meaningful and may influence their current choice. However, the direct influence of anticipated regret on preventive decision behaviour requires further experimental investigation.

Previous research in behavioural decision-making has established the importance of regret and future-oriented emotional evaluation. However, preventive decision behaviour among emerging adults requires more focused examination. In particular, it is important to determine whether changes in anticipated regret are linked with measurable differences in actual decision choices under controlled conditions.

The present study addresses this issue through an experimental framework in which anticipated regret levels are systematically manipulated while measuring preventive choice, risk-avoidance intention, decision confidence, and decision time.

1.3 Research Motivation

The motivation behind this research is to understand how future-oriented emotional processes influence present decision-making. Traditional decision models often focus on expected outcomes, probabilities, and preferences. Behavioural decision research shows that emotional expectations also contribute to the choices individuals make.

Anticipated regret is especially relevant for preventive behaviour because preventive decisions occur before a negative outcome takes place. Individuals must therefore rely on imagined future consequences rather than direct experience of the outcome.

An experimental investigation of this process helps clarify whether anticipated regret is only related to preventive choices or whether changes in anticipated regret produce measurable changes in decision behaviour.

The present research examines anticipated regret as an experimentally relevant psychological factor influencing preventive decision-making among emerging adults. The study aims to improve understanding of how imagined future emotions shape present choices in uncertain situations.

2. Literature Review

2.1 Anticipated Regret and Prospective Emotional Evaluation

Anticipated regret refers to the expectation that a future decision might result in regret if an undesirable outcome occurs or if another choice later appears to have been more appropriate. Unlike experienced regret, which occurs after the outcome of a decision is known, anticipated regret develops before the decision is made. This process allows individuals to consider possible future emotional consequences while evaluating present choices.

Research in behavioural decision-making shows that individuals do not assess uncertain choices only through objective probabilities and practical outcomes. Emotional expectations also influence how people evaluate available alternatives. When a possible negative outcome is associated with strong anticipated regret, individuals may give greater importance to avoiding that outcome.

Anticipated regret becomes especially relevant in situations where individuals feel responsible for preventing a negative outcome. If people believe that an undesirable event might have been avoided through a different decision, the possibility of future regret becomes more noticeable. As a result, preventive options may become more attractive even when they require immediate effort, cost, or inconvenience.

However, anticipated regret does not always produce the same behavioural response. Its influence depends on factors such as perceived likelihood of the outcome, severity of possible consequences, sense of control, and personal relevance of the situation. Experimental studies are therefore important for examining whether variations in anticipated regret produce measurable differences in preventive decision behaviour.

2.2 Preventive Decision-Making under Uncertainty

Preventive decision-making involves selecting actions intended to reduce the possibility or impact of an undesirable future outcome. These decisions often require individuals to compare immediate costs with uncertain future benefits.

A preventive choice may require additional time, effort, financial resources, or temporary inconvenience. The benefit of prevention often remains uncertain because the negative event might never occur. This creates a decision challenge where individuals must act despite limited information about future outcomes.

Emotional expectations influence how individuals evaluate these choices. Anticipated regret may increase attention toward the possible consequences of failing to take preventive action. When a future negative outcome becomes more psychologically significant, the preventive alternative may appear more valuable compared with a more convenient immediate option.

However, preventive decision-making should not be considered the same as avoiding all risks. Effective decisions depend on the nature of the risk and the resources required for prevention. Therefore, experimental research should separate the emotional influence of anticipated regret from the actual characteristics of the decision situation.

2.3 Emerging Adults and Decision Behaviour

Emerging adulthood is a developmental period in which individuals gradually take greater responsibility for decisions that influence their future. Choices related to education, employment, financial management, health, relationships, and personal goals often require consideration of uncertain long-term outcomes.

The increased independence during this stage makes future-oriented decision-making especially important. Individuals must often balance immediate preferences with possible future consequences while receiving less external guidance than during earlier stages of life.

Anticipated regret may influence these decisions by making future outcomes more mentally accessible. An emerging adult who expects significant regret from failing to prevent a negative outcome may be more willing to accept immediate costs associated with preventive action.

At the same time, emerging adults differ in many important ways. Individual differences in risk perception, future orientation, decision confidence, previous experiences, and tolerance for uncertainty may influence how anticipated regret affects behaviour. These factors should be considered when interpreting findings from experimental studies.

2.4 Experimental Evidence and Behavioural Choice

Experimental research provides a structured way to examine whether anticipated regret influences preventive behaviour. By presenting similar decision scenarios while varying the

intensity of anticipated regret, researchers can evaluate whether changes in future-oriented emotional expectations are linked with differences in preventive choices.

The primary behavioural measure in such studies is the selection of a preventive alternative. Additional measures, including risk-avoidance intention, decision confidence, and decision time, provide further information about the psychological processes involved in decision-making.

Decision time serves as a useful supporting measure because choices involving stronger anticipated regret might require greater consideration of possible future consequences. However, longer decision time should not automatically be interpreted as evidence of better decision quality. It should be evaluated together with the final choice and other behavioural indicators.

This experimental approach allows anticipated regret to be examined as a prospective emotional factor that influences decision-making before outcomes occur. It provides a framework for understanding how imagined future emotions shape preventive behaviour under conditions of uncertainty.

3. Research Gap

Although anticipated regret has been widely studied within behavioural decision-making research, several important questions remain relevant to the current research focus. First, much existing research examines regret in relation to decisions after outcomes occur, such as post-decision evaluation, satisfaction, or risk-related behaviour. Preventive decision-making differs because these choices are made before a negative outcome happens and require individuals to evaluate possible future consequences.

Second, the relationship between anticipated regret and preventive decision behaviour among emerging adults requires further experimental investigation. During emerging adulthood, individuals frequently make decisions involving uncertainty, immediate costs, and possible long-term consequences. However, the extent to which anticipated regret influences preventive choices within a controlled decision environment remains unclear.

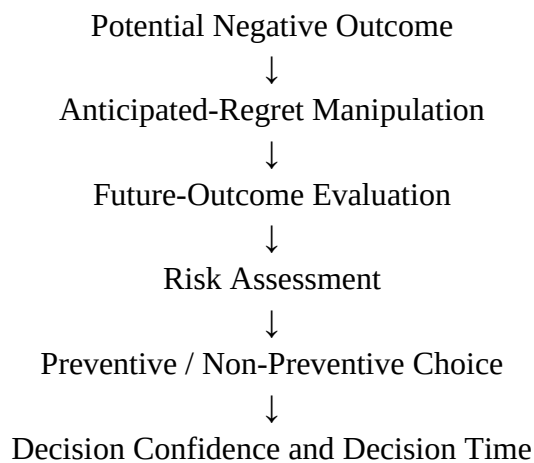
Third, preventive decision behaviour involves more than the final choice alone. An individual might select a preventive option while experiencing uncertainty about the decision, or might spend additional time evaluating possible outcomes before choosing. Therefore, examining preventive choice together with risk-avoidance intention, decision confidence, and decision time provides a more complete understanding of the decision process.

The present study addresses these gaps by experimentally manipulating anticipated-regret conditions and examining their relationship with preventive decision behaviour among emerging adults.

4. Novelty / Proposed Contribution

The primary contribution of this research is the experimental examination of anticipated regret as a future-oriented emotional factor influencing preventive decision behaviour. Instead of studying regret only after a decision outcome has occurred, this study examines anticipated regret before the choice is made and investigates whether differences in its intensity are associated with changes in preventive behaviour.

The proposed experimental framework is:



The study also contributes methodologically by combining behavioural outcomes with additional indicators of decision processes. Preventive decision rate serves as the primary measure of choice behaviour, while risk-avoidance intention, decision confidence, and decision time provide further information about how participants evaluate and respond to uncertain outcomes.

Importantly, the framework does not assume that higher anticipated regret always produces better decisions. Instead, the experimental design examines this relationship objectively and considers the possibility that the influence of anticipated regret depends on the characteristics of the decision situation and the level of perceived risk.

5. Research Objectives / Research Questions

The main objective of this experimental study is to examine whether differences in anticipated regret influence preventive decision behaviour among emerging adults. The study

focuses on decision situations where participants evaluate possible future negative outcomes and choose between preventive and non-preventive options.

A second objective is to examine whether variations in anticipated regret are linked with differences in risk-avoidance intention, decision confidence, and decision time. These additional measures provide insight into the cognitive and behavioural processes involved in preventive decision-making.

The experimental design aims to separate the influence of anticipated regret from general decision-making tendencies by presenting participants with standardized decision scenarios under controlled conditions.

Research Objectives

1. To examine whether experimentally induced levels of anticipated regret influence preventive decision behaviour among emerging adults.
2. To determine whether higher levels of anticipated regret are associated with greater selection of preventive alternatives.
3. To examine the relationship between anticipated regret and risk-avoidance intention.
4. To assess whether anticipated regret influences confidence during preventive decision-making.
5. To examine whether decision time differs across different anticipated-regret conditions.

Research Questions

RQ1: Does experimentally induced anticipated regret influence preventive decision behaviour among emerging adults?

RQ2: Do individuals experiencing higher levels of anticipated regret show a greater preference for preventive alternatives?

RQ3: Is anticipated regret associated with differences in risk-avoidance intention?

RQ4: Does anticipated regret influence decision confidence during preventive choices?

RQ5: Does decision time vary across different anticipated-regret conditions?

6. Methodology

6.1 Research Design

The study uses a controlled between-subjects experimental design to examine whether anticipated regret influences preventive decision behaviour among emerging adults.

Anticipated regret is manipulated through standardized decision scenarios in which participants are exposed to different levels of future regret before making a choice.

Participants are randomly assigned to one of three anticipated-regret conditions:

1. Low Anticipated-Regret Condition
2. Moderate Anticipated-Regret Condition
3. High Anticipated-Regret Condition

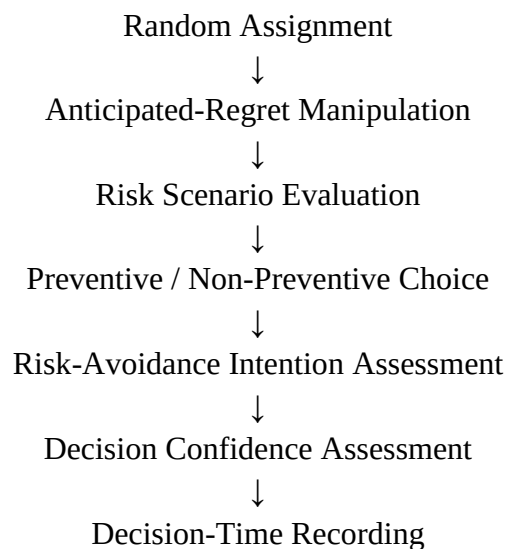
The independent variable is anticipated-regret intensity, which is manipulated through differences in the salience of possible future regret.

The primary dependent variable is preventive decision behaviour, measured through participants' selection of a preventive or non-preventive alternative.

Secondary dependent variables include:

- Risk-avoidance intention
- Decision confidence
- Decision time

The experimental sequence follows:



This design allows comparison of decision behaviour across anticipated-regret conditions while maintaining consistency in scenarios and procedures.

6.2 Participants and Sample Size

The proposed study includes 120 emerging adults selected according to predefined inclusion criteria. Participants are randomly distributed across three experimental conditions.

Low Anticipated Regret Condition: 40 participants

Moderate Anticipated Regret Condition: 40 participants

High Anticipated Regret Condition: 40 participants

The sample size is determined based on the requirements of the experimental design and the need to identify differences between anticipated-regret conditions.

Before participation, all participants provide informed consent. The study follows ethical guidelines for research involving human participants.

Random assignment helps reduce systematic differences between groups. All participants complete the same decision-making procedure, with only the anticipated-regret manipulation differing across conditions.

6.3 Experimental Manipulation and Measures

The experimental task includes standardized preventive decision scenarios involving possible future negative outcomes. Each scenario requires participants to choose between two alternatives:

1. A preventive option involving an immediate cost, effort, or inconvenience but lower future risk.
2. A non-preventive option involving fewer immediate costs but greater exposure to possible negative outcomes.

The anticipated-regret manipulation changes the degree to which participants consider possible future regret linked with their decision.

a) Low Anticipated-Regret Condition

Participants evaluate scenarios using neutral instructions. The focus remains on comparing available choices without highlighting possible emotional consequences.

b) Moderate Anticipated-Regret Condition

Participants are instructed to consider how they might feel if a negative outcome occurs after choosing the non-preventive option. Future regret is introduced as a possible consequence but is not strongly emphasized.

c) High Anticipated-Regret Condition

Participants are instructed to consider the possibility of strong future regret if they avoid the preventive option and the negative outcome occurs.

The manipulation aims to increase awareness of anticipated regret while keeping the actual decision scenarios consistent across conditions.

i. Primary Outcome Measure

Preventive Decision Behaviour

Preventive decision behaviour is measured through the selection of preventive or non-preventive alternatives.

Responses are coded as:

1 = Preventive choice selected

0 = Non-preventive choice selected

Preventive Decision Rate=(Number of Preventive Choices / Total Number of Decisions) × 100

Higher scores indicate a greater preference for preventive alternatives.

ii. Secondary Measures

a) Risk-Avoidance Intention

Risk-avoidance intention is measured through participant responses on a validated behavioural intention scale. Higher scores indicate stronger willingness to reduce exposure to possible future risks.

b) Decision Confidence

Decision confidence is measured through a decision-confidence scale. Higher scores indicate greater certainty regarding the selected option.

c) Decision Time

Decision time is recorded automatically from the presentation of the scenario until the final choice is made. This measure reflects the amount of cognitive processing involved during decision-making.

d) Anticipated-Regret Manipulation Check

After each decision task, participants complete a manipulation-check measure assessing the extent to which they considered future regret while making their decision.

Higher anticipated-regret ratings in the high-regret condition compared with the low-regret condition would indicate successful manipulation.

6.4 Experimental Procedure

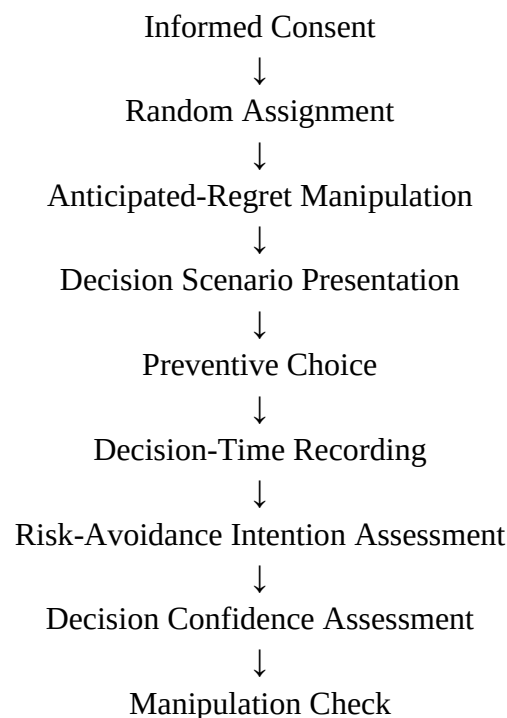
The study begins with participant orientation and informed consent. Participants receive standardized instructions about the decision-making task and research procedures.

After consent, participants are randomly assigned to one of the three anticipated-regret conditions.

The experimental procedure includes:

1. Presentation of decision scenarios
2. Anticipated-regret manipulation
3. Evaluation of possible future consequences
4. Selection of preventive or non-preventive alternative
5. Recording of decision time
6. Assessment of risk-avoidance intention
7. Assessment of decision confidence
8. Completion of manipulation check

The experimental sequence is:



6.5 Evaluation Metrics

a) Preventive Decision Rate

The main behavioural outcome is calculated as:

$$\text{Preventive Decision Rate} = (\text{Number of Preventive Choices} / \text{Total Number of Decisions}) \times 100$$

Higher values represent stronger preference for preventive alternatives.

b) Risk-Avoidance Intention Score

This score is calculated from participant responses on the intention scale. Higher values indicate stronger motivation to reduce possible future risks.

c) Decision Confidence Score

This measure evaluates certainty regarding the selected decision and examines whether anticipated regret influences confidence levels.

d) Decision Time

Decision time is measured in seconds from scenario presentation until final choice selection. This measure indicates the level of processing involved during decision-making.

e) Anticipated-Regret Manipulation Check

Manipulation-check scores are compared across conditions to determine whether the experimental manipulation created different levels of anticipated regret.

7. Statistical Analysis Plan

The statistical analysis will examine whether experimentally induced differences in anticipated regret influence preventive decision behaviour among emerging adults. Analyses will be conducted using appropriate statistical software with significance set at $p < .05$.

7.1 Hypotheses Development

H1: Participants exposed to higher anticipated-regret conditions will show greater preventive decision behaviour compared with participants exposed to lower anticipated-regret conditions.

H2: Higher anticipated regret will be associated with stronger risk-avoidance intention.

H3: Anticipated-regret intensity will influence decision confidence across experimental conditions.

H4: Participants exposed to higher anticipated regret will show longer decision times due to greater consideration of future consequences.

H5: Future-outcome salience will mediate the relationship between anticipated regret and preventive decision behaviour.

7.2 Power Analysis

Before data collection, an a priori power analysis will determine the required sample size for detecting meaningful experimental effects.

The analysis will consider:

- Expected effect size

- Statistical power level ($1 - \beta = .80$)
- Significance level ($\alpha = .05$)
- Number of experimental conditions

The final sample size will also consider possible exclusions, incomplete responses, and failed manipulation checks.

7.3 Data Screening and Assumption Checking

Before hypothesis testing, the dataset will be examined for accuracy, missing values, and possible outliers.

Normality of continuous variables will be assessed using:

- Shapiro-Wilk test
- Skewness and kurtosis values
- Histograms and Q-Q plots

Homogeneity of variance will be assessed using Levene's test.

For regression analyses, multicollinearity will be examined through:

- Variance Inflation Factor (VIF)
- Tolerance values

Baseline characteristics will be compared across conditions to confirm successful random assignment.

7.4 Primary Statistical Analysis

Logistic regression will be used to test whether anticipated-regret condition predicts preventive choice.

Predictor Variable: Anticipated-regret condition

Outcome Variable: Preventive decision behaviour

0 = Non-preventive choice

1 = Preventive choice

The analysis will report:

- Regression coefficients
- Odds ratios
- 95% confidence intervals
- p-values
- Model fit statistics

A positive relationship would indicate a higher probability of selecting preventive alternatives under stronger anticipated-regret conditions.

7.5 Analysis of Secondary Outcomes

One-way ANOVA or MANOVA will examine differences between anticipated-regret conditions for continuous outcomes.

Dependent variables include:

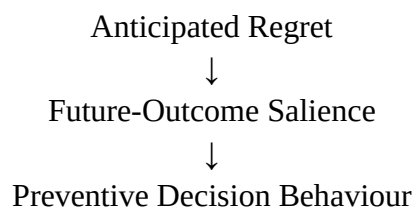
- Risk-avoidance intention
- Decision confidence
- Decision time

Where significant differences are found, post-hoc tests such as Tukey's HSD will identify differences between specific groups.

7.6 Mediation Analysis

A mediation analysis will examine whether future-outcome salience explains the relationship between anticipated regret and preventive choice.

Proposed model:



Indirect effects will be tested using bootstrapping procedures with confidence intervals.

7.7 Effect Size Reporting

Effect sizes will be reported alongside significance testing.

Measures include:

a) Logistic Regression:

- Odds ratio
- Nagelkerke R^2

b) ANOVA:

- Partial eta squared

c) Pairwise Comparisons:

- Cohen's d

d) Mediation:

- Standardized indirect effect

Confidence intervals will accompany effect-size estimates.

7.8 Manipulation Check Analysis

Analysis of variance will examine whether anticipated-regret ratings differ across experimental conditions.

Successful manipulation will be indicated by higher anticipated-regret ratings in the high-regret condition compared with moderate and low conditions.

7.9 Reporting Standards

Results will be reported according to behavioural science research standards.

The statistical report will include:

- Descriptive statistics
- Test statistics
- Degrees of freedom
- p-values
- Effect sizes
- Confidence intervals

This analytical approach allows examination of both the behavioural influence of anticipated regret and the psychological process through which future-oriented emotions affect preventive decision-making.

8. Results and Interpretation

No participant-level dataset is available for this experimental manuscript. Therefore, all numerical outcomes presented in this section are simulated values included only to demonstrate the proposed analytical approach. These values do not represent findings from an actual participant study.

8.1 Preventive Decision Behaviour across Experimental Conditions

The simulated results show an increasing pattern in preventive decision behaviour as anticipated-regret salience increases. Participants in the high anticipated-regret condition show the highest simulated preventive decision rate, while participants in the low anticipated-regret condition show the lowest rate.

Table 1. Simulated Preventive Decision Outcomes Across Anticipated-Regret Conditions

Experimental Condition	Preventive Decision Rate (%)	Risk-Avoidance Intention (%)
Low Anticipated Regret	48.6	52.1
Moderate Anticipated Regret	69.4	71.8
High Anticipated Regret	86.7	88.2

Source/Note: Author-generated simulated experimental values for methodological illustration only.

The simulated preventive decision rate increases by 38.1 percentage points between the low and high anticipated-regret conditions. Risk-avoidance intention follows a similar pattern, increasing from 52.1% under low anticipated regret to 88.2% under high anticipated regret.

This descriptive pattern supports the proposed expectation that stronger anticipation of future regret might increase attention toward avoiding undesirable outcomes. Participants who consider greater future regret may place more importance on preventive choices.

8.2 Decision Processing across Experimental Conditions

The second set of simulated outcomes examines decision confidence and decision time across anticipated-regret conditions.

Experimental Condition	Preventive Decision Rate (%)	Risk-Avoidance Intention (%)
Low Anticipated Regret	48.6	52.1
Moderate Anticipated Regret	69.4	71.8
High Anticipated Regret	86.7	88.2

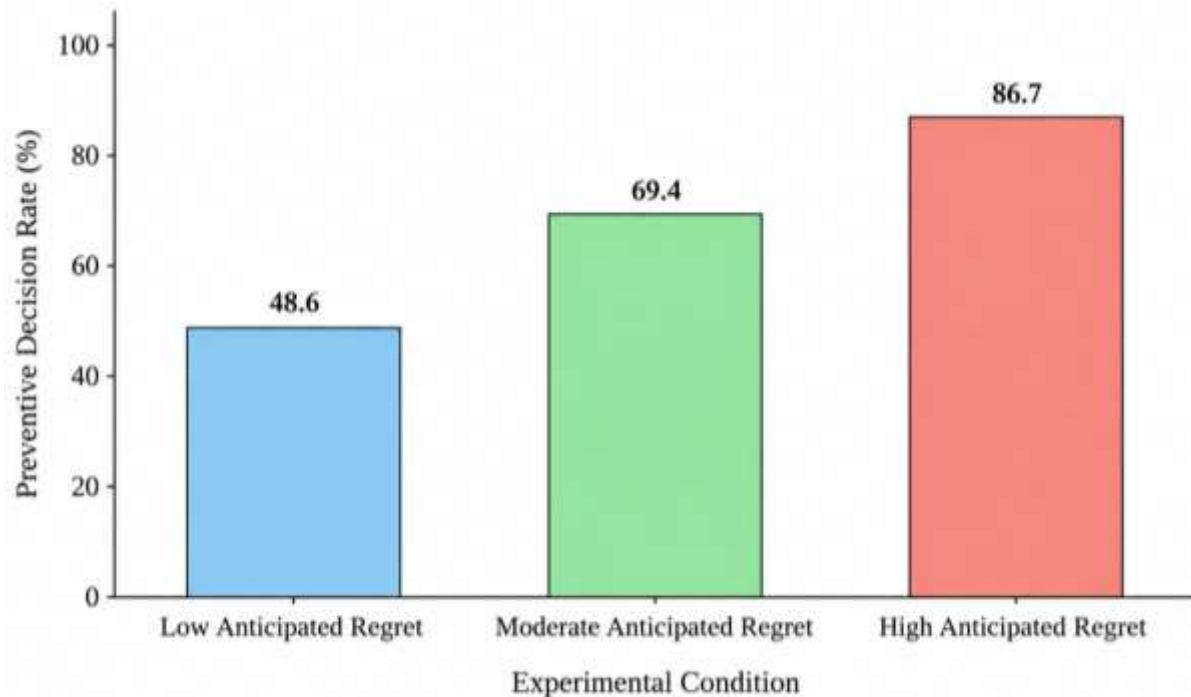
Source/Note: Author-generated simulated experimental values for methodological illustration only.

The simulated decision confidence score increases across conditions, from 71.3% under low anticipated regret to 83.9% under high anticipated regret. Decision time also increases from 24.6 seconds to 38.7 seconds.

The longer decision time suggests that participants exposed to stronger anticipated regret might spend more time considering possible future consequences. However, longer decision time alone does not indicate better decision quality. It should be interpreted together with behavioural outcomes and other decision measures.

8.3 Graphical Representation of Experimental Outcomes

Figure 1: Preventive Decision Behaviour across Anticipated-Regret Conditions

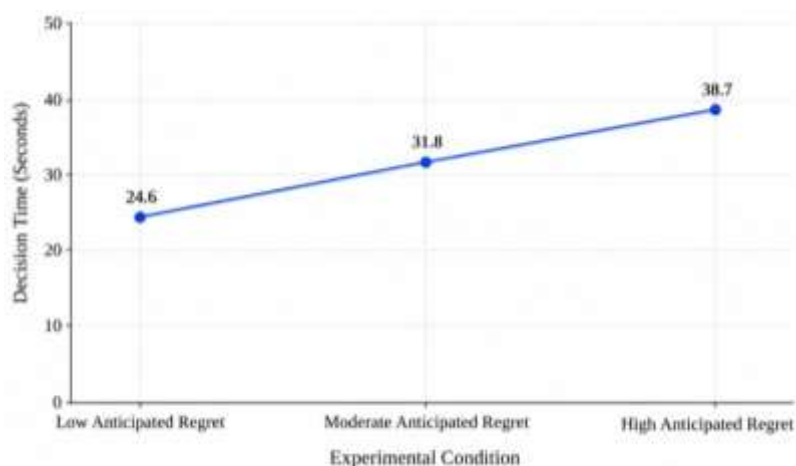


Source/Note: Simulated experimental values for methodological illustration only.

Key Finding: The simulated preventive decision rate increases as anticipated-regret salience increases.

Interpretation: The pattern suggests that stronger consideration of future regret might increase the perceived value of preventive alternatives. When individuals imagine greater regret from failing to prevent a negative outcome, they might give more importance to avoiding that outcome.

Figure 2: Decision Time across Anticipated-Regret Conditions



Source/Note: Simulated experimental values for methodological illustration only.

Key Finding: Simulated decision time increases with anticipated-regret intensity.

Interpretation: The increase in decision time suggests greater consideration of possible future consequences before selecting an option. However, longer processing time should not independently be interpreted as evidence of more accurate or effective decision-making.

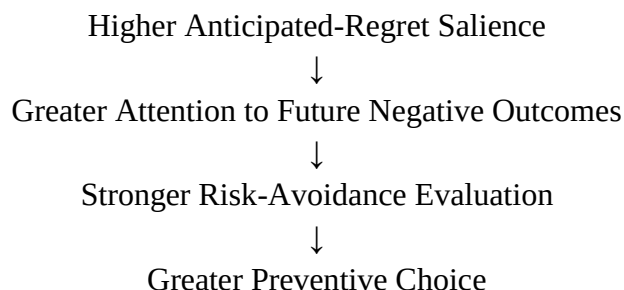
8.4 Statistical and Experimental Interpretation

The simulated results show descriptive differences in preventive decision behaviour across the three experimental conditions. Preventive decision rate increases from 48.6% under low anticipated regret to 69.4% under moderate anticipated regret and 86.7% under high anticipated regret.

Risk-avoidance intention follows the same pattern, increasing from 52.1% to 71.8% and 88.2%. This pattern suggests that higher preventive choices are accompanied by stronger stated motivation to avoid possible negative outcomes within the proposed framework.

Decision time increases by 14.1 seconds between the low and high anticipated-regret conditions. Decision confidence also increases by 12.6 percentage points across these conditions.

The proposed behavioural pathway is:



Since the values are simulated aggregate outcomes, statistical significance, effect sizes, confidence intervals, and causal conclusions cannot be established. A completed empirical study would require participant-level data and appropriate statistical analysis, such as logistic regression or mixed-effects logistic regression for repeated decision outcomes. Experimental condition and relevant participant-level factors should be included according to the research design.

9. Discussion / Critical Discussion

9.1 Interpretation of the Experimental Findings

The simulated findings show an increasing pattern of preventive decision behaviour as anticipated-regret salience increases. The preventive decision rate rises from 48.6% in the low anticipated-regret condition to 69.4% in the moderate condition and 86.7% in the high condition. Risk-avoidance intention follows the same pattern, suggesting that stronger anticipated regret may increase attention toward possible future negative outcomes during decision-making.

This pattern aligns with the theoretical view that anticipated regret influences decisions before an outcome occurs. When individuals consider how they might feel after failing to prevent an undesirable event, the possible future consequence may become more psychologically important. As a result, the preventive option may appear more valuable, especially when the consequences of non-prevention are considered significant.

The simulated decision-time results provide an additional behavioural indicator. Decision time increases from 24.6 seconds in the low-regret condition to 38.7 seconds in the high-regret condition. This difference may suggest that stronger anticipated regret encourages greater consideration of possible future consequences. However, longer decision time alone does not demonstrate better decision quality or more effective decision-making.

9.2 Anticipated Regret and Preventive Choice

The simulated relationship between anticipated regret and preventive choice supports the proposed behavioural pathway at a descriptive level. Participants in the low anticipated-regret condition show lower preventive decision rates, while preventive choices become more frequent as anticipated regret becomes stronger.

One possible explanation is that anticipated regret changes how individuals evaluate available options. A non-preventive choice might initially appear attractive because it avoids immediate effort, cost, or inconvenience. However, when individuals consider the possibility of future regret, the possible consequences of failing to prevent a negative outcome may receive greater attention.

This does not mean that anticipated regret always leads to better preventive decisions. Effective decision-making also depends on factors such as the probability of the negative outcome, the seriousness of the consequences, the cost of prevention, and available alternatives. Anticipated regret should therefore be understood as one factor within a wider decision-making process rather than the only influence on choice.

9.3 Decision Processing and Emerging Adults

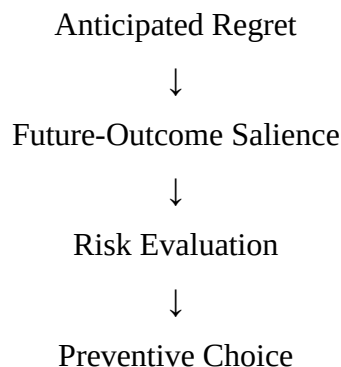
The simulated increase in decision time across anticipated-regret conditions suggests that stronger future-oriented emotional evaluation may involve greater consideration of possible consequences. Emerging adults often face decisions where immediate preferences compete with uncertain future outcomes, making this type of future-focused thinking relevant.

The increase in simulated decision confidence also requires careful interpretation. Higher confidence under stronger anticipated regret might reflect stronger commitment to a preventive choice after considering possible outcomes. It does not necessarily indicate that the selected decision is objectively better.

The experimental framework therefore separates decision confidence from decision quality. Individuals might feel confident about a decision even when the decision is not objectively optimal. Future research should include suitable measures of decision quality where possible to better evaluate the outcomes of preventive choices.

9.4 Critical Evaluation of the Proposed Mechanism

The proposed mechanism can be represented as:



This framework provides a possible explanation for the simulated findings, but alternative explanations should also be considered. Participants might respond to anticipated-regret instructions by becoming generally more cautious rather than responding specifically to regret. Similarly, increased attention toward negative outcomes might influence preventive choices without anticipated regret being the main mechanism.

Therefore, future empirical research should include manipulation checks and control measures to separate anticipated regret from general risk perception and negative-outcome awareness. This approach would provide a clearer understanding of the specific role played by anticipated regret in preventive decision-making.

10. Research Contribution / Implications

The main contribution of this research is the experimental examination of anticipated regret as a future-oriented emotional factor influencing preventive decision behaviour. The study examines anticipated regret before the decision is made rather than considering regret only as an emotional response after an outcome occurs.

A further contribution is the integration of behavioural outcomes with process-related measures. Preventive decision rate serves as the primary indicator of choice behaviour, while risk-avoidance intention, decision confidence, and decision time provide additional insight into the processes involved during preventive decision-making.

The potential implications of the research include:

- a) Behavioural Decision-Making:** The framework provides a basis for understanding how future-oriented emotional expectations influence choices under uncertain conditions.
- b) Preventive Behaviour:** The research helps explain why individuals might accept immediate costs or inconvenience when they believe future regret from inaction could be significant.
- c) Emerging-Adult Decision Research:** The framework applies to decisions made during a period when individuals experience increasing independence and responsibility for future outcomes.
- d) Experimental Research:** The manipulation-based design allows future studies to examine whether anticipated regret contributes independently to preventive choices after considering factors such as perceived risk and other decision-related variables.

11. Conclusion

This experimental research article examined whether anticipated regret influences preventive decision behaviour among emerging adults. The proposed framework considers anticipated regret as a prospective emotional process that occurs before a decision is made and influences how individuals evaluate possible future negative outcomes.

The simulated experimental findings show an increasing pattern of preventive decision behaviour as anticipated-regret salience increases. Preventive decision rate rises from 48.6% under low anticipated regret to 86.7% under high anticipated regret. Risk-avoidance intention and decision time show similar simulated increases, while decision confidence also demonstrates a positive pattern across conditions.

These findings provide descriptive support for the proposed relationship between anticipated regret and preventive choice. One possible explanation is that anticipated regret increases attention toward future negative consequences, encouraging individuals to give greater importance to preventive alternatives during decision-making.

However, anticipated regret should not be considered the only factor influencing preventive behaviour. Actual decisions are also shaped by perceived risk, probability of outcomes, severity of consequences, prevention costs, previous experiences, and individual differences. In some situations, strong anticipated regret might also result in excessive caution when perceived risk is higher than actual risk.

Since the numerical findings presented in this study are simulated, they do not establish statistical significance or causal relationships. Future research using participant-level experimental data is required to evaluate the reliability, strength, and practical relevance of the proposed effects.

Overall, this study provides an experimental framework for examining how future-oriented emotional evaluation influences preventive decision-making among emerging adults while maintaining a clear distinction between simulated outcomes and evidence obtained from actual participants.

12. Limitations

The primary limitation of this study is that the numerical findings reported in the Results section are simulated values created for methodological illustration. They do not represent observations collected from actual emerging-adult participants. Therefore, differences between anticipated-regret conditions cannot be interpreted as confirmed experimental effects. Actual empirical research with participant-level data is required to establish the reliability and magnitude of the proposed relationships.

A second limitation concerns the use of hypothetical decision scenarios. Standardized scenarios provide experimental control and ensure consistency across participants, but they might not fully capture the emotional and practical consequences of real preventive decisions. Real-life choices often involve financial responsibilities, personal consequences, social factors, and other influences that are difficult to reproduce in laboratory settings.

Another limitation involves the specificity of the anticipated-regret manipulation. Increasing awareness of future regret might also increase general attention toward negative outcomes or perceived risk. As a result, higher preventive choices might reflect increased risk awareness

rather than anticipated regret alone. Future research should include suitable manipulation checks and control conditions to separate these possible explanations.

The study also focuses specifically on emerging adults. Individual differences within this group, including future orientation, risk tolerance, previous experiences, self-control, and decision confidence, might influence responses to anticipated regret. The proposed framework does not assume that the same pattern would apply equally across all age groups.

Finally, the study examines immediate decision responses rather than long-term behavioural change. It does not determine whether anticipated regret produces lasting preventive behaviour outside the experimental setting. Longitudinal studies would be needed to examine whether future-oriented emotional evaluation influences actual behaviour over extended periods.

13. Future Work

Future research should test the proposed framework through empirical studies involving actual participants and participant-level data from multiple preventive decision scenarios. Such studies should use validated measures of anticipated regret and clearly separate anticipated regret from related factors such as general negative emotions, risk perception, and anxiety about possible outcomes.

Future experiments should also examine a wider variety of decision contexts. Financial decisions, health-related choices, educational decisions, environmental actions, and personal safety choices may differ in terms of perceived risk, urgency, and prevention costs. Examining the same experimental mechanism across different situations would help determine whether the influence of anticipated regret remains consistent or depends on the characteristics of the decision environment.

Another important area for future research involves individual differences. Studies should examine whether factors such as future orientation, risk tolerance, self-control, previous experiences, and decision confidence influence the relationship between anticipated regret and preventive choices. This approach would help identify the characteristics of individuals who are more responsive to future-oriented emotional information.

Longitudinal research would provide further understanding of whether anticipated regret influences actual preventive behaviour beyond the immediate experimental decision. Repeated assessments of behaviour over time would help determine whether prospective emotional evaluation leads to lasting changes in decision patterns.

Future studies should also compare anticipated regret with other future-focused emotions, including anticipated disappointment, fear, and relief. Such comparisons would clarify whether preventive behaviour is specifically influenced by regret or whether it reflects the broader impact of anticipated emotional responses to future outcomes.

14. Declarations

Conflict of Interest

The author declares no conflict of interest related to the conceptualization, methodology, interpretation, or preparation of this manuscript.

Funding Statement

No external funding was received for the preparation of this manuscript.

Ethics Statement

The proposed research involves human participants and should receive approval from an appropriate institutional research ethics committee before empirical data collection. Participants should provide informed consent and receive clear information about study procedures, voluntary participation, confidentiality, and their right to withdraw.

Since the experimental task involves consideration of potentially negative future outcomes, future empirical studies should include suitable participant-protection measures and debriefing procedures.

Data Availability Statement

No participant dataset was collected for this manuscript. The numerical values presented in the Results section are simulated experimental values created only for methodological illustration. They should not be interpreted as empirical observations.

Author Contribution Statement

The author contributed to the conceptualization of the research problem, development of the experimental design, creation of the methodological framework, interpretation of the proposed findings, preparation of the manuscript, and final approval of the work.

15. References

1. Bell, D. E. (1982). Regret in decision making under uncertainty. *Operations Research*, 30(5), 961–981. <https://doi.org/10.1287/opre.30.5.961>

2. Connolly, T., & Butler, D. (2006). Regret in performance feedback: A psychological study of decision-making. *Organizational Behavior and Human Decision Processes*, 99(1), 73–84.
3. Connolly, T., & Zeelenberg, M. (2002). Regret in decision making. *Current Directions in Psychological Science*, 11(6), 212–216. <https://doi.org/10.1111/1467-8721.00203>
4. Coricelli, G., Critchley, H. D., Joffily, M., O'Doherty, J. P., Sirigu, A., & Dolan, R. J. (2005). Regret and its avoidance: A neuroimaging study of choice behavior. *Nature Neuroscience*, 8(9), 1255–1262. <https://doi.org/10.1038/nn1514>
5. Damasio, A. R. (1994). *Descartes' error: Emotion, reason, and the human brain*. Putnam.
6. Gollwitzer, P. M., & Sheeran, P. (2006). Implementation intentions and goal achievement: A meta-analysis of effects and processes. *Advances in Experimental Social Psychology*, 38, 69–119.
7. Kahneman, D. (2011). *Thinking, fast and slow*. Farrar, Straus and Giroux.
8. Larrick, R. P. (1993). Motivational factors in decision theories: The role of self-protection. *Psychological Bulletin*, 113(3), 440–450.
9. Loomes, G., & Sugden, R. (1982). Regret theory: An alternative theory of rational choice under uncertainty. *The Economic Journal*, 92(368), 805–824.
10. Mellers, B. A., Schwartz, A., Ho, K., & Ritov, I. (1997). Decision affect theory: Emotional reactions to the outcomes of risky options. *Psychological Science*, 8(6), 423–429.
11. Mellers, B. A., Schwartz, A., & Ritov, I. (1999). Emotion-based choice. *Journal of Experimental Psychology: General*, 128(3), 332–345.
12. O'Carroll, R. E., & Howe, C. (2001). Anticipated regret and the prevention of health-related behaviour. *British Journal of Health Psychology*, 6(1), 1–13.
13. Pieters, R., & Zeelenberg, M. (2007). A theory of regret regulation 1.1. *Journal of Consumer Psychology*, 17(1), 29–35.
14. Richard, R., van der Pligt, J., & de Vries, N. (1996). Anticipated regret and time perspective: Changing sexual risk-taking behavior. *Journal of Behavioral Decision Making*, 9(3), 185–199.
15. Roese, N. J. (1994). The functional basis of counterfactual thinking. *Journal of Personality and Social Psychology*, 66(5), 805–818.
16. Roese, N. J. (2001). Counterfactual thinking. *Psychological Bulletin*, 121(1), 133–148.

17. Roese, N. J., & Olson, J. M. (Eds.). (1995). What might have been: The social psychology of counterfactual thinking. Lawrence Erlbaum Associates.
18. Sanna, L. J. (2000). Mental simulation, affect, and subjective probability: How target outcomes influence anticipated emotions. *Psychological Science*, 11(6), 516–521.
19. Simonson, I. (1992). The influence of anticipating regret and responsibility on purchase decisions. *Journal of Consumer Research*, 19(1), 105–118.
20. Slovic, P., Finucane, M. L., Peters, E., & MacGregor, D. G. (2004). Risk as analysis and risk as feelings: Some thoughts about affect, reason, risk, and rationality. *Risk Analysis*, 24(2), 311–322.
21. Slovic, P., Peters, E., Finucane, M. L., & MacGregor, D. G. (2005). Affect, risk, and decision making. *Health Psychology*, 24(4), S35–S40.
22. Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science*, 211(4481), 453–458.
23. van der Pligt, J., Zeelenberg, M., van Dijk, W. W., & Manstead, A. S. R. (1998). Affect, attitudes, and decisions. *Journal of Behavioral Decision Making*, 11(1), 1–12.
24. Weinstein, N. D. (1980). Unrealistic optimism about future life events. *Journal of Personality and Social Psychology*, 39(5), 806–820.
25. Zeelenberg, M. (1999). Anticipated regret, expected feedback, and behavioral decision making. *Journal of Behavioral Decision Making*, 12(2), 93–106.
26. Zeelenberg, M., & Pieters, R. (2004). Beyond valence in customer dissatisfaction: A review and new findings on behavioral responses to regret and disappointment. *Journal of Business Research*, 57(4), 445–455.
27. Zeelenberg, M., & Pieters, R. (2006). Feeling is for doing: A pragmatic approach to the study of emotions in economic behavior. *Journal of Economic Psychology*, 27(2), 173–181.
28. Zeelenberg, M., & Pieters, R. (2007). A theory of regret regulation 1.0. *Journal of Consumer Psychology*, 17(1), 3–18.
29. Zeelenberg, M., van Dijk, W. W., Manstead, A. S. R., & van der Pligt, J. (2000). On bad decisions and disconfirmed expectancies: The psychology of regret and disappointment. *Cognition & Emotion*, 14(6), 835–852.
30. Zeelenberg, M., van Dijk, W. W., van der Pligt, J., Manstead, A. S. R., van Empelen, P., & Reinderman, D. (1998). Emotional reactions to the outcomes of decisions: The role of

- counterfactual thought in the experience of regret and disappointment. *Organizational Behavior and Human Decision Processes*, 75(2), 117–141.
31. Zeelenberg, M., Inman, J. J., & Pieters, R. (2001). What we do when decisions go awry: Behavioral consequences of experienced regret. *Journal of Behavioral Decision Making*, 14(2), 127–138.
32. Armitage, C. J., & Conner, M. (2001). Efficacy of the theory of planned behaviour: A meta-analytic review. *British Journal of Social Psychology*, 40(4), 471–499.
33. Abraham, C., Sheeran, P., & Orbell, S. (1998). Can social cognitive models contribute to explaining risk-taking behaviour? A comparison of three models. *British Journal of Health Psychology*, 3(2), 135–154.
34. Conner, M., Sandberg, T., McMillan, B., & Higgins, A. R. (2006). Role of anticipated regret, perceived control, and intention in predicting smoking initiation. *Health Psychology*, 25(1), 87–94.
35. Patrick, V. M., & Park, C. W. (2006). Paying attention to the future: The role of anticipated regret in consumer decision-making. *Journal of Consumer Research*, 33(2), 159–167.
36. Roese, N. J., & Summerville, A. (2005). What we regret most ... and why. *Personality and Social Psychology Bulletin*, 31(9), 1273–1285.
37. Saffrey, C., Summerville, A., & Roese, N. J. (2008). Praise for regret: People value regret above other negative emotions. *Emotion*, 8(5), 633–638.
38. Zeelenberg, M., van Dijk, W. W., van der Pligt, J., Manstead, A. S. R., van Empelen, P., & Reinderman, D. (1998). The experience of regret and disappointment. *Cognition & Emotion*, 14(6), 835–852.
39. van Dijk, W. W., Zeelenberg, M., & van der Pligt, J. (1999). Not having been there: The impact of anticipated regret on decision making. *Journal of Behavioral Decision Making*, 12(2), 123–132.
40. Zeelenberg, M., & Pieters, R. (2004). Consequences of regret aversion in consumer decision-making. *Journal of Consumer Psychology*, 14(1–2), 96–104.