When Time is Money: A Time Perspective Model for Savings

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ABSTRACT

This paper was aimed to investigate the relationship between the dimensions of Zimbardo's Time Perspective and saving behaviour with the mediating role of saving intention on the Indian households. The authors collected the data through a structured questionnaire from 498 respondents. PLS-SEM has been used to analyze the results and these results are elaborated by creating two models i.e. measurement model and structural model. The results depicted that past negative, past positive and present fatalistic have shown no significant effect on saving behaviour and future perspective only have the direct significant effect on the outcome variable. Future perspective came out to be the strongest predictor of saving behaviour.

Keywords: Saving behaviour, Saving Intention, Zimbardo's Time Perspective Theory, PLS-SEM, Indian Households.

INTRODUCTION

In an era marked by economic uncertainty and increasing financial complexity, understanding the psychological factors that influence individuals' saving behaviors has become paramount for both financial institutions and policymakers. While traditional economic models have long emphasized rational decision-making and income levels as primary determinants of saving patterns, emerging research in behavioral economics suggests that psychological time orientation plays a crucial role in shaping financial behaviors. This study examines the relationship between Zimbardo's Time Perspective Theory and individuals' saving intentions and actual saving behaviors.

Philip Zimbardo's Time Perspective Theory, developed through extensive psychological research, proposes that individuals' subjective perceptions of time across past, present, and future dimensions significantly influence their decision-making processes and behavioral outcomes. The theory identifies five distinct time perspective orientations: Past-Negative, Past-Positive, Present-Hedonistic, Present-Fatalistic, and Future-Oriented. Each orientation reflects different cognitive and emotional relationships with temporal experiences, potentially creating distinct patterns in how individuals approach financial planning and saving decisions.

The theoretical framework suggests that individuals with a strong future-oriented time perspective are more likely to engage in goal-directed behaviors, delay gratification, and make sacrificial decisions in the present for anticipated future benefits. Conversely, present-oriented individuals may prioritize immediate rewards and experiences over long-term financial security. Understanding these temporal orientations could provide valuable insights into the psychological mechanisms underlying saving behavior, potentially explaining why some individuals consistently save while others struggle with financial accumulation despite similar economic circumstances.

This research addresses a significant gap in the literature by empirically investigating how different time perspective orientations influence both the intention to save and actual saving behaviors. By examining the relationship between psychological time orientation and financial behavior, this study aims to contribute to the growing body of knowledge in behavioral finance and provide practical implications for financial education, policy development, and intervention strategies designed to promote healthy saving habits across diverse populations.

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REVIEW OF LITERATURE

Zimbardo's research on the psychology of time perspective focuses on the ways in which individuals develop temporal orientations that divide the flow of personal experience into different mental categories, or time zones, of Past, Present, and Future (Zimbardo & Boyd, 2008). The Time Perspective Theory has emerged as a significant framework for understanding financial decision-making behaviors, particularly in the context of saving and retirement planning (Stolarski et al., 2018).

Research consistently demonstrates a positive relationship between future time perspective and saving behaviors. Studies reveal a positive association of future time perspective, retirement goal clarity, and social group support with retirement planning behavior (Jacobs-Lawson & Hershey, 2005), which are moderated by financial literacy, while future time perspective and retirement goal clarity also play mediating roles. This finding suggests that individuals who naturally focus on future outcomes are more likely to engage in proactive financial planning (Riitsalu & Raaij, 2020).

Individuals with a strong FTP tend to exhibit behaviors conducive to retirement savings. Indeed, several studies have demonstrated that future orientation, as measured (Polanco, 2025) by various psychological instruments, correlates positively with long-term financial planning behaviors. Future-Orientated Person: This person's decisions tend to be based less on concrete, empirical aspects of the current behavioral setting and relatively more on his or her anticipated, abstract imaginings of future consequences of alternative courses of action (Adee et al., 2024; Zimbardo & Boyd, 2008).

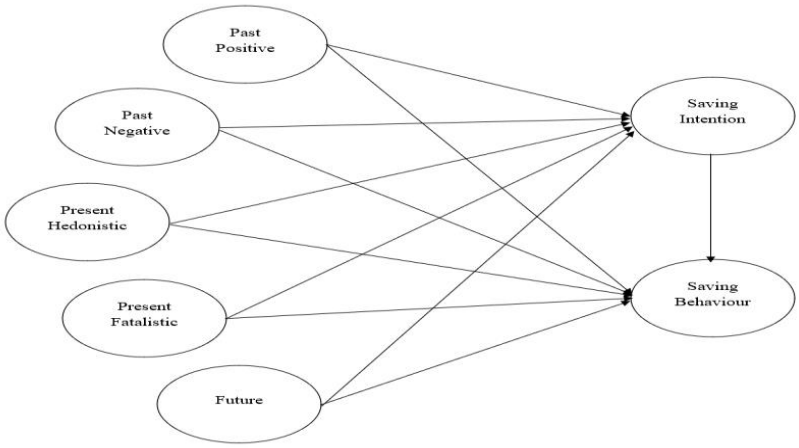
The literature acknowledges that time perspective operates within a broader psychological framework. Empirical research reports significant differences between people with high and low need for cognitive closure regarding the quantity of information they process, the intensity of that information, the use of decision rules, and the level of self-confidence in their decisions (Topa et al., 2018; Zimbardo et al., 2017). This indicates that understanding time perspective is crucial for comprehensive financial wellness programs.

The integration of time perspective into behavioral economics research has revealed important insights. Empirical findings in the areas of behavioral economics and judgment and decision making (JDM) demonstrate departures from the notion that man is economically rational, illustrating instead that people often act in ways that are economically suboptimal (Knoll, 2010). Time perspective provides one explanation for these seemingly irrational financial decisions.

Research Gap

While the research establishes clear connections between future time perspective and positive saving behaviors, several gaps remain in the literature. The relationship between present-oriented and past-oriented time perspectives and saving behavior requires further investigation. Additionally, the cultural and demographic variations in these relationships need more comprehensive examination.

Conceptual Framework



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Source: Developed by Authors

Objectives of the study

1. To analyze the effect of time perspective factors on saving intention and saving behaviour.
2. To examine the effect of saving intention on saving behaviour.

RESEARCH METHODOLOGY

This study employs a mixed research design approach, incorporating both descriptive and causal research methodologies to examine the impact of Zimbardo's time perspective on saving intention and saving behavior (Zimbardo & Boyd, 2008). The target population for this study comprises working adults aged 18-65 who have regular income and the potential for saving behavior. The study employs a purposive sampling technique, also known as judgmental sampling.

The study collected data from 498 respondents, which exceeds the minimum sample size requirements for structural equation modeling analysis. According to Hair et al. (2017), a sample size of 200 or more is generally considered adequate for SEM analysis, while some scholars suggest a minimum of 10 observations per estimated parameter. The sample size of 498 provides sufficient statistical power for detecting meaningful relationships and ensures the stability of parameter estimates in the PLS-SEM analysis.

The study employs Partial Least Squares Structural Equation Modeling (PLS-SEM) using SmartPLS software for data analysis. PLS-SEM was selected as the primary analytical technique due to its advantages in handling complex models with multiple constructs and its ability to simultaneously assess both measurement and structural models (Hair et al., 2019).

ANALYSIS AND RESULTS

The data analysis starts from the measurement model by providing validity and reliability results of the model and it is followed by the path analysis from the structural model. The quality of the structural model is also elaborated by various measures like coefficient of determination, predictive relevance etc. and model fit statistics are provided where it proves the how good the model fits with the data.

Fig 1: Measurement Model

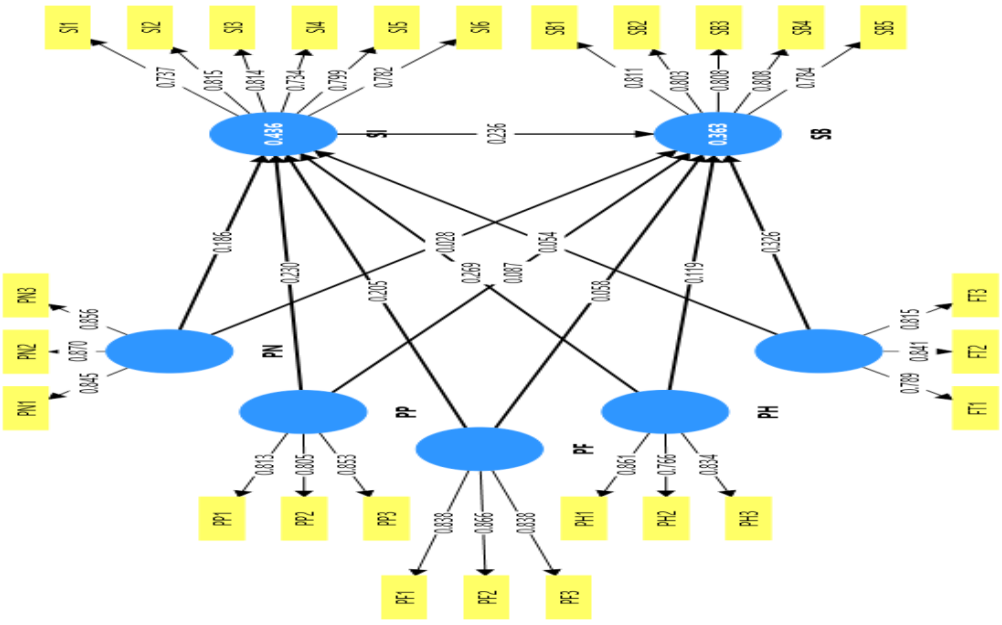

Figure 1: Measurement model generated using SmartPLS by Authors

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Table I shows that all primary loadings (bold values) are above 0.7, ranging from 0.734 to 0.87, which is excellent and exceeds the recommended threshold. Cross-loadings are generally lower than primary loadings, also indicates good discriminant validity (Hair et al., 2019). The strongest construct appears to be PN (Past Negative Perspective) with loadings between 0.845-0.87. SI (Saving Intention) has 6 indicators, while most other constructs have 3 indicators each, and SB (Saving Behaviour) has 5.

Table I: Cross-Loadings/ Factor Loadings

	FT	PF	PH	PN	PP	SB	SI
FT1	**0.789**	0.133	0.255	0.167	0.194	0.359	0.213
FT2	**0.841**	0.131	0.163	0.213	0.231	0.414	0.207
FT3	**0.815**	0.225	0.213	0.201	0.246	0.358	0.244
PF1	0.169	**0.838**	0.24	0.301	0.273	0.26	0.378
PF2	0.171	**0.866**	0.306	0.289	0.312	0.262	0.395
PF3	0.166	**0.838**	0.219	0.285	0.272	0.244	0.34
PH1	0.229	0.293	**0.861**	0.35	0.285	0.354	0.446
PH2	0.171	0.188	**0.766**	0.199	0.213	0.278	0.317
PH3	0.224	0.252	**0.834**	0.313	0.271	0.277	0.415
PN1	0.19	0.282	0.284	**0.845**	0.42	0.282	0.356
PN2	0.228	0.302	0.313	**0.87**	0.397	0.296	0.379
PN3	0.195	0.3	0.32	**0.856**	0.435	0.256	0.481
PP1	0.262	0.306	0.264	0.427	**0.813**	0.267	0.424
PP2	0.226	0.245	0.29	0.335	**0.805**	0.281	0.342
PP3	0.195	0.281	0.233	0.433	**0.853**	0.344	0.435
SB1	0.401	0.232	0.314	0.264	0.252	**0.811**	0.379
SB2	0.433	0.239	0.302	0.267	0.322	**0.803**	0.332
SB3	0.373	0.276	0.352	0.312	0.332	**0.808**	0.448
SB4	0.355	0.246	0.264	0.228	0.286	**0.808**	0.374
SB5	0.274	0.211	0.242	0.213	0.255	**0.784**	0.312
SI1	0.18	0.379	0.356	0.361	0.364	0.314	**0.737**
SI2	0.196	0.346	0.452	0.396	0.432	0.37	**0.815**
SI3	0.197	0.408	0.41	0.426	0.44	0.39	**0.814**
SI4	0.214	0.249	0.328	0.31	0.31	0.316	**0.734**
SI5	0.219	0.335	0.353	0.35	0.368	0.395	**0.799**
SI6	0.268	0.324	0.357	0.383	0.362	0.378	**0.782**

Source: Authors' calculations

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue VII July 2025

Table II shows that all values exceed 0.7 (ranging from 0.748 to 0.872), indicating good to excellent internal consistency reliability. All values are above 0.85 (ranging from 0.856 to 0.903), which is excellent and exceeds the 0.7 threshold. All constructs have AVE > 0.6 (ranging from 0.61 to 0.734), confirming convergent validity as they exceed the 0.5 minimum threshold (Hair et al., 2019; Garson, 2016). PN (α=0.82, AVE=0.734) and SI (α=0.872, AVE=0.61) show particularly strong reliability.

Table II: Internal Consistency Reliability and Convergent Validity

Variables	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
FT	0.748	0.751	0.856	0.665
PF	0.804	0.807	0.884	0.718
PH	0.759	0.777	0.861	0.674
PN	0.82	0.825	0.892	0.734
PP	0.764	0.772	0.863	0.678
SB	0.863	0.867	0.901	0.645
SI	0.872	0.876	0.903	0.61

Source: Authors' calculations

Table III: Discriminant Validity – HTMT criterion

	FT	PF	PH	PN	PP	SB	SI
FT							
PF	0.257						
PH	0.339	0.378					
PN	0.303	0.423	0.442				
PP	0.365	0.429	0.414	0.610			
SB	0.568	0.360	0.450	0.381	0.441		
SI	0.338	0.519	0.585	0.556	0.591	0.528	

Source: Authors' calculations

Results from table III shows that all HTMT values are below 0.85, with the highest being 0.610 (between PN and PP). Most values are well below 0.6, indicating strong discriminant validity) (Henseler et al. 2015). The lowest discriminant validity appears between PN and PP (0.610), but this is still acceptable. Strong discriminant validity overall, as all constructs are sufficiently distinct from each other.

Variance Inflation Factor (VIF) values assess multicollinearity among indicators analyzes that all VIF values are below 3, ranging from 1.424 to 2.022 (Table IV), (Kock & Lynn, 2012). This indicates no multicollinearity concerns, as values are well below the threshold of 5. The measurement model is free from multicollinearity issues.

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue VII July 2025

Table IV: VIF values for Multicollinearity assessment

Indicators	VIF	Indicators	VIF	Indicators	VIF
FT1	1.424	**PN1**	1.88	**SB4**	1.93
FT2	1.577	**PN2**	2.017	**SB5**	1.895
FT3	1.513	**PN3**	1.687	**SI1**	1.632
PF1	1.645	**PP1**	1.492	**SI2**	2.022
PF2	1.83	**PP2**	1.567	**SI3**	1.993
PF3	1.757	**PP3**	1.604	**SI4**	1.69
PH1	1.614	**SB1**	1.906	**SI5**	1.963
PH2	1.432	**SB2**	1.826	**SI6**	1.845
PH3	1.603	**SB3**	1.83		

Source: Authors' calculations

Structural Model

The structural equation modeling analysis conducted using SmartPLS reveals a complex pattern of relationships among the latent constructs, with significant implications for understanding the underlying theoretical framework.

The path coefficients analysis from Table V demonstrates that Future Time Perspective exhibits the strongest direct relationship with Saving Behaviour ($\beta = 0.326$, $t = 7.973$, $p < 0.001$), establishing it as the most influential predictor in the model. However, the relationship patterns reveal a distinctive mediation structure where Saving Intention serves as a crucial intermediary variable for most other predictors.

Fig 2: Structural Model

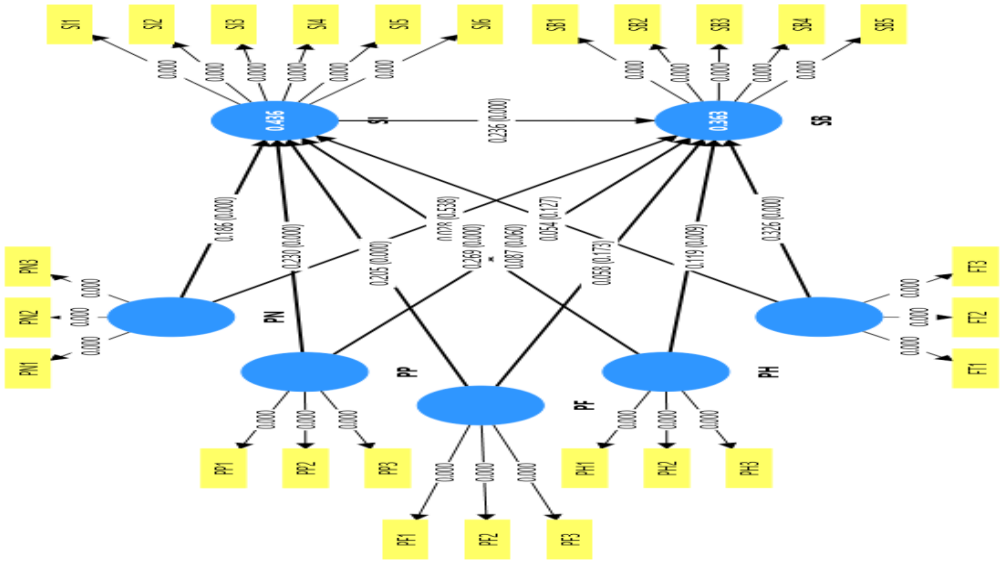

Figure 1: Structural model generated using SmartPLS by Authors

Specifically, Present Hedonistic time perspective shows the strongest influence on Saving Intention ($\beta = 0.269$, $t = 7.411$, $p < 0.001$), followed by Past Positive ($\beta = 0.230$, $t = 5.900$, $p < 0.001$), Present Fatalistic Time

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue VII July 2025

Perspective (β = 0.205, t = 5.369, p < 0.001), and Past Negative (β = 0.186, t = 5.213, p < 0.001), while Saving Intention subsequently influences Saving Behaviour (β = 0.236, t = 4.852, p < 0.001).

Notably, several direct paths to Saving Behaviour prove non-significant, including Future Time Perspective → Saving Intention (β = 0.054, p = 0.127), Present Fatalistic Time Perspective → Saving Behaviour (β = 0.058, p = 0.173), Past Negative → Saving Behaviour (β = 0.028, p = 0.538), and Past Positive → Saving Behaviour (β = 0.087, p = 0.060), suggesting that these constructs primarily influence the outcome variable through the mediating mechanism.

Table V: Path Coefficients – Total Effects

	Path Coefficients	**Standard deviation**	**T statistics**	**P values**	**Remarks**
FT -> SB	0.326	0.041	7.973	0.0000	Supported
FT -> SI	0.054	0.035	1.528	0.1270	Not Supported
PF -> SB	0.058	0.043	1.364	0.1730	Not Supported
PF -> SI	0.205	0.038	5.369	0.0000	Supported
PH -> SB	0.119	0.046	2.61	0.0090	Supported
PH -> SI	0.269	0.036	7.411	0.0000	Supported
PN -> SB	0.028	0.045	0.616	0.5380	Not Supported
PN -> SI	0.186	0.036	5.213	0.0000	Supported
PP -> SB	0.087	0.046	1.88	0.0600	Not Supported
PP -> SI	0.23	0.039	5.9	0.0000	Supported
SI -> SB	0.236	0.049	4.852	0.0000	Supported

Source: Authors' calculations

The mediation analysis in Table VI confirms this pattern, revealing significant indirect effects for Present Hedonistic → Saving Intention → Saving Behaviour (β = 0.064, t = 3.816, p < 0.001), Past Negative → Saving Intention → Saving Behaviour (β = 0.044, t = 3.441, p = 0.001), Past Positive → Saving Intention → Saving Behaviour (β = 0.054, t = 3.672, p < 0.001), and Present Fatalistic → Saving Intention → Saving Behaviour (β = 0.048, t = 3.418, p = 0.001), while the Future Time → Saving Intention → Saving Behaviour pathway remains non-significant (β = 0.013, t = 1.444, p = 0.149).

Table VI: Path Coefficients – Indirect Effects for Mediation

	Path Coefficients	**Standard deviation**	**T statistics**	**P values**	**Remarks**
PH -> SI -> SB	0.064	0.017	3.816	0.0000	Supported
PN -> SI -> SB	0.044	0.013	3.441	0.0010	Supported
PP -> SI -> SB	0.054	0.015	3.672	0.0000	Supported
FT -> SI -> SB	0.013	0.009	1.444	0.1490	Not Supported
PF -> SI -> SB	0.048	0.014	3.418	0.0010	Supported

Source: Authors' calculations

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue VII July 2025

Table VII: Quality of the model

Variables	R-square	R-square adjusted	f-square
SB	0.363	0.355	
FT			0.147
PF			0.004
PH			0.016
PN			0.001
PP			0.008
SI	0.436	0.431	0.049
FT			0.005
PF			0.061
PH			0.103
PN			0.042
PP			0.066

Source: Compiled by Authors

This finding suggests that FT operates through a different mechanism than the other predictors, maintaining a direct influence on SB without requiring the mediating role of SI. Table VII demonstrates acceptable explanatory power, with R-square values of 0.363 for SB and 0.436 for SI, indicating that 36.3% of the variance in the outcome variable and 43.6% of the variance in the mediator are explained by their respective predictors (Cohen, 1998; Hair et al. 2014).

The effect sizes (f-square) reveal that FT has the most substantial impact on SB ($f^2 = 0.147$), representing a small to medium effect, while PH demonstrates the strongest influence on SI ($f^2 = 0.103$).

Table VIII: Model Fit Statistics

	Saturated model	**Estimated model**
SRMR	0.06	0.06
d_ULS	1.263	1.263
d_G	0.528	0.528
NFI	0.734	0.734

Source: Authors' calculations

The model fit statistics present mixed results, with SRMR of 0.06 indicating good fit according to the threshold of less than 0.08, but NFI of 0.734 falling below the recommended 0.90 benchmark suggesting potential areas for model improvement (Hair et. al., 2019; Henseler et. al., 2016). These findings collectively indicate that while

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue VII July 2025

the proposed theoretical framework captures important relationships among the constructs, there may be opportunities to enhance the model's overall fit through refinement of measurement items or consideration of additional pathways that could better explain the complex dynamics within the structural model.

CONCLUSION

Future time perspective is the strongest predictor of actual saving behavior, suggesting that individuals who focus on future outcomes are more likely to save without requiring intermediate intention formation. This direct pathway indicates that future-oriented thinking automatically translates into financial planning behavior. Contrary to expectations, present hedonistic time perspective strongly predicts saving intentions and moderately influences saving behavior. This suggests that pleasure-seeking individuals may save to enable future enjoyment or maintain lifestyle flexibility, representing a sophisticated form of hedonistic motivation.

Both positive and negative past experiences significantly influence saving intentions, which then translate to behavior. This indicates that financial socialization and past financial experiences play crucial roles in motivating saving through cognitive processing and intention formation. Most time perspectives (except future orientation) primarily influence saving behavior through intentions rather than directly, supporting cognitive theories of behavioral change and highlighting the importance of intention formation in financial behavior. Even individuals with present fatalistic perspectives can develop saving intentions and behavior, suggesting that appropriate interventions focusing on intention formation could help overcome fatalistic barriers to saving.

The results provide strong support for the integration of time perspective theory with the theory of planned behavior in financial contexts. The findings demonstrate that different time perspectives operate through different psychological mechanisms - future orientation works directly, while other time perspectives require intention mediation. This suggests that time perspective influences not just what people do, but how they process financial decisions.

For future-oriented individuals, Focus on practical saving tools and investment opportunities. For present-hedonistic individuals. Emphasize how saving enables future enjoyment and lifestyle maintenance. For individuals with past experiences, leverage positive memories or help reframe negative experiences into learning opportunities.

Limitations and Future Directions

While the model explains substantial variance in both saving intentions (43.6%) and behavior (36.3%), additional factors such as financial self-efficacy, social norms, and economic constraints could further enhance understanding. Future research should explore the specific cognitive and emotional mechanisms that explain why different time perspectives use different pathways to influence saving behavior, and investigate potential moderators that might strengthen or weaken these relationships across different demographic or economic contexts.

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