Buying (quality) time predicts relationship satisfaction

Abstract

Seven studies examine the association between time-saving purchases (e.g., housecleaning and meal delivery services) and relationship satisfaction. Study 1 uses an eleven-year longitudinal panel survey to show that increases in time-saving purchases predict long-term increases in relationship satisfaction. Study 2 replicates these findings with a six-week daily diary study, demonstrating that time-saving purchases predict daily increases in relationship satisfaction particularly for members of dual-income couples who are experiencing higher levels of stress. Studies 3 through 4b reveal that time-saving purchases are most beneficial when couples translate this influx of temporal resources into quality time spent together. Study 5 identifies two key aspects of quality time—positive mood when together and perceived support—that uniquely predict relationship satisfaction. Study 6, a pre-registered study, provides comprehensive evidence for our conceptual model: Members of committed relationships who make time-saving purchases more effectively manage daily stressors (i.e. household chores) and spend more quality time together which predicts increased relationship satisfaction. Once again, these benefits are strongest for individuals experiencing higher levels of stress. These findings develop a nuanced framework connecting time-saving purchases to relationship satisfaction.

Key Words: Time; Consumption; Dual Career Couples; Stress Management; Relationship Satisfaction

Buying (quality) time predicts relationship satisfaction

Every couple has received the vague and often unsolicited advice—typically from older relatives—to "make time for one another." Left unsaid is specific advice about exactly how couples are supposed to find this free time (since time cannot be made, only found) or how they should spend it. We offer a solution: by spending money to buy themselves out of time-consuming tasks, we propose that busy couples can buy themselves quality time together.

Certainly, couples who spend more quality time together are more satisfied with their relationships and experience greater intimacy (Kingston & Nock, 1987; Kirchier, 1988; Milek, Butler & Bodenmann, 2015; Orthner, 1975). However, work and family demands place significant constraints on the amount of time that couples spend together (Bianchi, Robinson, & Milkie, 2006; Claxton & Perry-Jenkins, 2008). In one recent study, working adults reported spending only about one hour of quality time with their spouse and children each day (Hur et al., 2021). Another study estimated a decline of 26% in the amount of quality time that spouses spend with one another between 1975 and 2000 (Bianchi et al., 2006). Indicative of this lack of quality time, many working adults in the US and globally feel more pressed for time than in previous generations (Hamermesh & Lee, 2007; Giurge, Whillans, & West, 2020 for a review).

At the same time, new technologies exist that offer solutions to the time stress of modern life. The rise of the gig economy has made outsourcing tasks more accessible and affordable. In one survey conducted in 2015 by the Pew Research Center, seven-in-ten Americans had used some type of online or sharing economy service in the past year. Research indicates that even relatively low-cost time-saving purchases—such as having groceries delivered or using a ridesharing service—can have benefits for personal wellbeing (Lok & Dunn, 2022).

While past research has documented a reliable association between time-saving purchases and personal happiness (Whillans et al. 2017; Lok & Dunn, 2022; see Dunn et al. 2020 for a

review), little is known about whether and why buying time might predict relationship satisfaction. In this paper, we test whether time-saving purchases allow working adults in committed romantic relationships to spend more quality time together and experience greater relationship satisfaction as a result. We also explore the features of quality time that predict relationship satisfaction. In doing so, this investigation contributes to research on relationship satisfaction, resource management, and the psychology of time and wellbeing by providing the first test of whether time-saving purchases allow couples to more effectively navigate the time demands of daily life. This research also sheds light on the question of what couples should do with an influx of time (i.e. additional temporal resources) to enhance relationship satisfaction.

Time-Saving Purchases as the Provision of Temporal Resources

We conceptualize time-saving purchases as the ability to gain additional temporal resources by paying for assistance to complete time-consuming activities. In conceptualizing time-saving purchases as an influx of temporal resources, we draw on the Conservation of Resources (COR) model. The COR model is a highly cited theory of stress, proposing that people are motivated to protect their current resources and acquire new ones (Hobfoll, 1989).

According to the COR model, people must invest resources to recover from losses, protect against future losses, and gain additional resources (Westman et al. 2004). For example, an employee who has been working long hours might invest time and money in a relaxing vacation to recover their depleted emotional and mental resources. Using the COR model as a conceptual framework, time-saving purchases can be viewed as a decision to use financial resources to gain additional time. Full-time working adults in committed relationships typically have some discretionary income and somewhat limited time. We propose that time-saving purchases provide crucial temporal resources that working adults need to protect and increase on

a regular basis. This argument aligns with research proposing the benefits of increased temporal resources for highly time stressed individuals (Sharif, Mogilner & Hershfield, 2021).

Research on the COR model suggests that having greater access to resources can positively influence wellbeing and relationship satisfaction (see Chen, Westman & Hobfoll, 2015 for a review). For example, having greater access to personal resources like self-esteem and social support can protect against burn-out when working in highly stressful occupations such as caregiving or teaching (Janssen et al. 1999). In the context of relationships, when full-time working adults have more supportive partners, they report lower levels of work-family conflict and experience greater relationship satisfaction (Jansen, 2003). This research suggests that intrapersonal resources like self-esteem and interpersonal resources like social support can promote wellbeing, especially when couples are facing high levels of stress (Chen et al. 2015).

Relevant research using the COR model has explored the association between increased temporal resources among busy professionals and wellbeing. Research on "respite" has found that sabbaticals—year-long breaks from paid employment—can reduce stress and improve positive mood by helping working professionals feel more in control of their time and enabling them to reconnect with loved ones (Davidson et al. 2010; Schabram, Bloom & DiDonna, 2022). Paid vacations are also associated with an increase in temporal resources and lower levels of stress and burnout among employees (Etzion, 2003; Westman & Edan, 1997; DeBloom, Geurts & Kompier, 2012). This research suggests that increased temporal resources enable people who are experiencing high levels of stress to better navigate demands at work and outside of it, in turn predicting higher wellbeing and improving the quality of social and romantic relationships.

Building on this research, we propose that time-saving purchases are a previously unexplored response to the demands of daily life that may increase temporal resources and predict greater relationship satisfaction for working adults in committed romantic relationships.

An influx of temporal resources should help employed adults more effectively manage their daily demands and positively predict relationship satisfaction as a result. The COR model proposes that the more resources people have available relative to their demands, the greater wellbeing they will experience (Hobfoll, 2001). Time-saving purchases should therefore benefit relationship satisfaction when these purchases provide a greater influx of temporal resources: that is, when they save more time. This research leads to our first two hypotheses (H1, H2):

> **Hypothesis 1 (H1):** Working adults in committed romantic relationships who make time-saving purchases will report higher levels of relationship satisfaction than those who do not make time-saving purchases (Studies 1-3, 5, 6).
>
> **Hypothesis 2 (H2):** The amount of time that couples save through time-saving purchases will be a significant positive predictor of relationship satisfaction (Studies 3, 5, 6).

Time Saving Purchases Increase Quality Time

While prior research using the COR model has focused on understanding how intrapersonal resources like self-esteem and interpersonal resources like social support predict wellbeing, there is much less research documenting *when* or *why* an influx of temporal resources might translate into greater wellbeing or relationship satisfaction. Our research aims to address this gap by proposing that an influx of temporal resources will predict greater relationship satisfaction by improving the quality of time that working adults spend with their romantic partner.

Quality time is defined as the perception of spending enjoyable time together (Carlson et al. 2022) and it is critical for preserving relationship satisfaction (Kremer-Sadlik & Paugh, 2007; Kingston & Nock, 1987; Kirchier, 1988; Milek, Butler, & Bodenmann, 2015; Orthner, 1975). Yet working adults in committed romantic relationships spend very little quality time with their romantic partners, which can undermine relationship satisfaction (Bianchi, Robinson, & Milkie, 2006; Claxton & Perry-Jenkins, 2008; Hatch & Bulcroft, 2004). We propose that time-saving purchases, and especially purchases that provide a greater influx of temporal resources (i.e., purchases that save more time), will predict higher relationship satisfaction by enabling couples to spend more quality time together. This proposition leads us to the next hypothesis (H3):

> **Hypothesis 3 (H3):** Time-saving purchases will predict relationship satisfaction by enabling couples to spend more quality time together (Studies 4-6).

In testing this hypothesis, we explore various conceptualizations of quality time. While past research has defined quality time as the overall perception of spending enjoyable time together (Carlson et al. 2022), very little research has explored the specific characteristics of time-use that influence these perceptions. Contributing to research in this area, we test two previously studied conceptualizations of quality time that could contribute to relationship satisfaction: how couples spend time together and how they feel about time spent together.

First, we examine whether time-saving purchases predict relationship satisfaction by decreasing the amount of time that couples spend together on mood-detracting activities like chores (Giurge, Whillans, & Yemiscigil, 2021) or increasing the amount of time spent together on mood-enhancing activities like exercise and socializing (Smeets et al. 2020). Second, we examine whether time-saving purchases predict relationship satisfaction by altering the

subjective experience of time together, either by decreasing negative emotional experiences or increasing positive emotional experiences when together (Kremer-Sadlik & Paugh, 2007).

In testing these two distinct conceptualizations of quality time—as objective time spent on various activities and as the subjective experience of time itself—this investigation advances research on time-use, time-perception, and relationship satisfaction. Conceptually, this investigation helps to uncover whether time-use activities or the subjective experience of time itself matters in predicting relationship satisfaction for working adults in committed romantic relationships. Practically, this investigation addresses the question of how working adults may consider spending an influx of time to enhance their relationship satisfaction.

Time-Saving Purchases Allow Couples to Proactively Navigate Household Stress

We also test *why* time-saving purchases predict quality time. Research using the COR model shows that personal resources like social support and coping abilities allow people in romantic relationships to engage in more proactive coping strategies when they are faced with higher demands (Chen et al. 2015). Engagement with proactive coping strategies can in turn predict a positive trajectory of resilience to daily stressors and wellbeing (Westman et al. 2004).

The COR model suggests that access to valuable resources can initiate positive cycles of stress management and wellbeing. These "gain spirals" occur when an influx of new, needed resources enables more positive coping responses to current challenges and results in further resource gains (Hakanen et al. 2008; Chen et al. 2015). We apply this concept to our study of time as a resource in relationships. Specifically, we examine whether time-saving purchases provide working adults with additional time to better manage their household chores, potentially resulting in more quality time spent together and greater relationship satisfaction. This hypothesis reflects the COR model's gain spiral proposition: additional time provided by time-

saving purchases should allow couples to more effectively manage their daily responsibilities, creating opportunities for more positive shared experiences, and higher relationship satisfaction.

Daily diary studies have shown that recurring negative discussions about chores are the most frequent source of conflict for couples who are living together (Papp, Cummings, Goeke-Morey, 2009). Drawing on these findings, we define positive coping to the household chores as an increase in constructive conversations about the chores coupled with a decrease in repetitive, ruminative chore discussions during shared time. We hypothesize that this reduction in chore rumination will predict more quality time together and greater relationship satisfaction.

This prediction is supported by research showing that rumination about chore-related concerns can negatively predict relationship satisfaction (Carlson, Miller, & Rudd, 2020; Zięba et al. 2022). Conversely, problem-focused responses to household tasks, such as planning when and how to complete daily chores, can mitigate these effects (Revenson et al. 2005). Building on this research, we propose that time-saving purchases will predict more constructive responses to the household chores. This, in turn, should predict more quality time together and greater relationship satisfaction. Based on this research, we formulate our fourth hypothesis (H4):

> **Hypothesis 4 (H4):** Working adults in committed romantic relationships who make time-saving purchases (and save more time through these purchases) will have the resources to more positively cope with their daily demands (i.e. household chores). In turn, they will spend more quality time together and report greater relationship satisfaction (Study 6).

We focus on household chores due to their ubiquitous nature and significant impact on relationship satisfaction (Papp, Cummings, Goeke-Morey, 2009; Carlson, Miller & Rudd, 2020; Zieba et al. 2022). Many time-saving purchases, such as meal delivery or cleaning services,

directly address chore-related demands. This direct link provides a clear channel to demonstrate the "gain spiral" effect proposed by the COR model (Hakanen et al. 2008; Chen et al. 2015).

By examining how time-saving purchases influence chore management, we illustrate how couples can use external resources to manage their daily responsibilities, potentially enhancing relationship satisfaction. While we could have studied other common stressors such as managing work demands, testing this “gain spiral” proposition in the context of household chores is a relevant and broadly applicable initial step in demonstrating whether and how time-saving purchases can help busy couples manage their day-to-day responsibilities more effectively.

Time-Saving Purchases Protect Against Stress

We also explore *when* working adults in committed romantic relationships benefit most from time-saving purchases. Based on COR model research showing that resources “protect” against stress (Westman et al. 2004 for a review), we predict a moderating role of stress, such that people in romantic relationships who report relatively high levels of stress (i.e., who face greater demands) will experience greater benefits from increasing their temporal resources by making time-saving purchases. This research leads to the fifth and final hypothesis (H5):

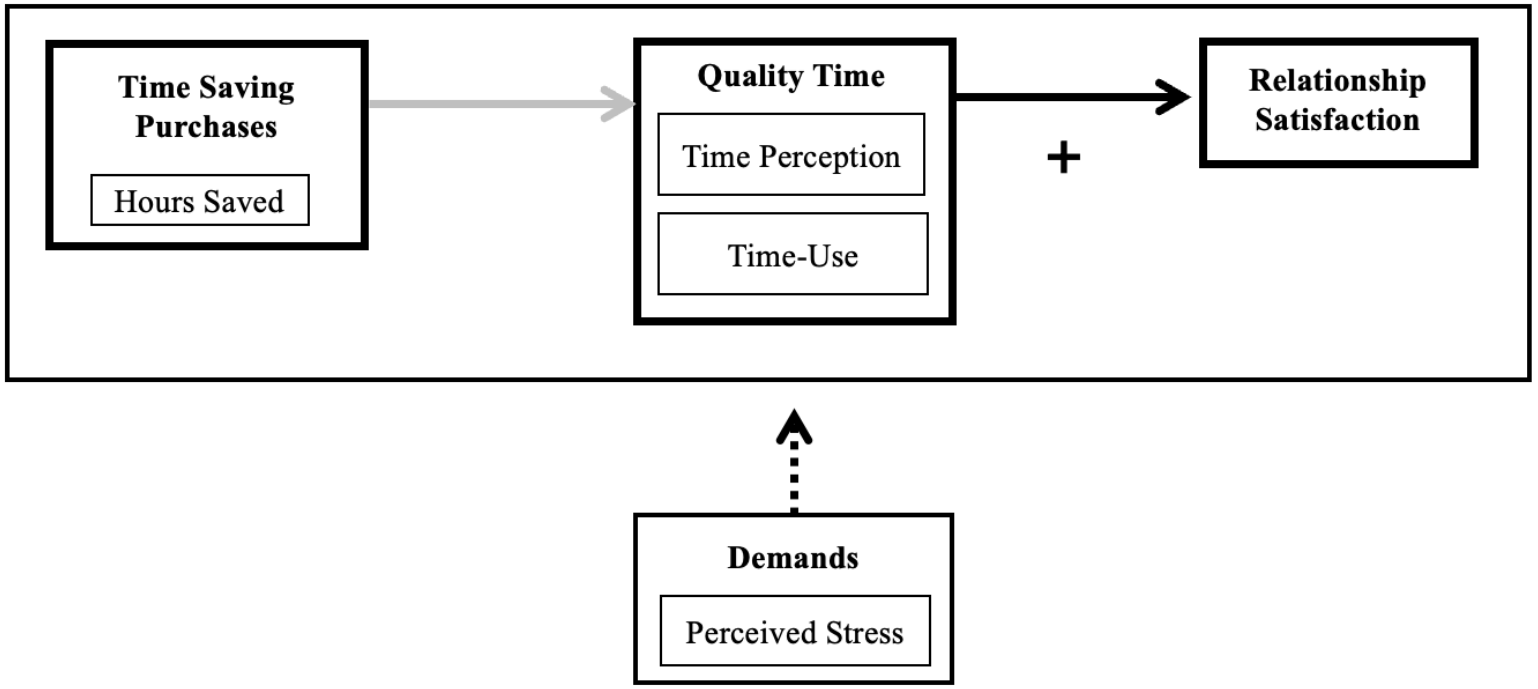
> **Hypothesis 5 (H5):** Members of committed romantic relationships who experience relatively high levels of stress will report greater relationship satisfaction after receiving an influx of temporal resources through time-saving purchases (Studies 1-3, 5).

Overview

We explore these hypotheses across seven studies. Study 1 is an eleven-year longitudinal panel survey testing whether changes in time-saving purchases predict long-term changes in relationship satisfaction. Study 2 is a six-week diary study examining whether time-saving purchases predict daily relationship satisfaction. Both Studies 1 and 2 test whether these benefits

are stronger for respondents who report higher levels of stress. Study 3 tests the role of hours saved in predicting the benefits of time-saving purchases. Studies 4a and 4b provide experimental evidence that quality time explains why time-saving purchases predict relationship satisfaction. Study 5 explores the features of quality time that uniquely predict this association. Study 6, a pre-registered study, tests our full conceptual model (Figure 1). We have no a priori predictions about how stress will moderate the associations between time-saving purchases, quality time, and relationship satisfaction. Thus, our conceptual diagram is open to the possibility that stress could moderate any of the possible direct and indirect effects.

Figure 1. Conceptual model that links time-saving purchases to relationship satisfaction (H1-H5)



Note: In this model, time-saving purchases predict relationship satisfaction (H1) through their influence on quality time (H3). We propose that hours saved will be a unique predictor of the relationship benefits of time-saving purchases (H2). We also hypothesize that time-saving purchases will predict relationship satisfaction by helping people better manage daily stressors like chores and enabling them to experience greater quality time together as a result (H4). We treat stress as a moderator: more stressed individuals should experience the greatest benefits (H5).

In testing these hypotheses, our paper makes three primary contributions to the resource management, consumption, time-use, and relationship satisfaction literatures.

First, this paper contributes to research on the COR model by showing when and how an influx of temporal resources predicts relationship satisfaction for working adults in committed romantic relationships. Past research on the COR model has focused on understanding when and how temporal resources provided by external parties outside of romantic relationships—such as paid vacations provided by workplaces—predict wellbeing and relationship satisfaction (Etzion, 2003). Moving beyond this focus, our investigation explores whether and how working couples can increase their own temporal resources by making time-saving purchases together, with possible benefits for stress management, time-use, quality time, and relationship satisfaction.

Second, this paper provides a conceptual contribution to the time-use and relationship satisfaction literature by exploring how working adults in romantic relationships should spend an influx of time to promote relationship satisfaction. While past research has explored whether subjective experiences of time or spending time in certain leisure activities like exercising or socializing predict self-reported relationship satisfaction, we simultaneously test time-use and perceptions of time and investigate which features uniquely predict relationship satisfaction.

This investigation dovetails with recent calls from relationship researchers to expand the focus of research beyond understanding activities and events that disrupt relationship functioning to study the activities and events that promote relationship satisfaction—such as engaging in hobbies when spending time together (Muise et al. 2019; Righetti et al. 2022 for a review).

Finally, this paper advances research on the topic of how purchases that are acquired through the market economy predict relationship satisfaction. Past research provides compelling evidence that spending money to acquire positive experiences like meals-out and vacations can

enhance interpersonal closeness (Gilovich & Kumar, 2015). Extending this research, our investigation represents the first test of whether, when, and how spending money to save time by spending money to reduce negative experiences like chores and cooking uniquely predicts romantic relationship satisfaction. Across all primary data collection efforts, we include measures of experiential and material purchases and show that time-saving purchases predict relationship satisfaction beyond these other consumption experiences. In doing so, this paper contributes new insight into how consumption decisions predict relationship satisfaction.

The surveys and data for these studies are available through the Open Science Framework (OSF).[1] Studies 4a and 6 were pre-registered. Except for Study 1, an existing public dataset, we prioritized recruiting members of dual-income couples who were living together. We made this decision because dual-income households experience greater time demands compared to single-income households (Kingston & Nock, 1987, Ko & Hwang, 2021). This fact makes members of dual-income couples an appropriate population for testing whether, when, and why time-saving purchases predict relationship satisfaction (See Sharif, Mogilner & Hershfield, 2021 for related arguments). Moreover, these couples are more likely to have money available to spend on services that save time. Focusing on dual-income couples therefore provides an ecologically valid test of our hypotheses (See also: Lok & Dunn, 2022).

Study 1

Overview

Study 1 uses data from a longitudinal panel dataset—Understanding Society: The UK Household Longitudinal Study (UKHLS)—to assess whether changes in time-saving purchases predict long-term changes in relationship satisfaction. Using this dataset, we test whether

[1] https://osf.io/g2kvh/?view_only=368525b3e3754584b5eba7542e9adf63

individuals who are in committed romantic relationships report greater relationship satisfaction after they increase their use of paid time-saving services (H1). We also explore whether time-saving services are more beneficial for people who are experiencing higher levels of stress (H5).

The UKHLS is an 11-year longitudinal panel survey that provides comprehensive information about the lives and experiences of individuals and households in the United Kingdom (UK). Analyzing this dataset has two primary benefits. First, this dataset allows us to control for time-invariant individual characteristics that may confound the association between time-saving purchases and relationship satisfaction, such as personality traits (Ptacek et al., 1994; Stone et al., 2000). Second, the extended timeframe of the UKHLS allows us to explore the reverse causal argument. It is conceivable that individuals who become more satisfied in their relationships might invest more in time-saving services to maintain or further increase their relationship satisfaction (Chen et al. 2015). By analyzing data from the same respondents over eleven years, we can differentiate between our hypothesis—that time-saving purchases predict changes in relationship satisfaction—and the alternative explanation that people in more satisfying romantic relationships simply allocate more resources to time-saving purchases.

Participants and Data Description

Launched in 2009, the UKHLS collects data from approximately 40,000 households across the UK each year, covering a wide range of topics including economic circumstances, social dynamics, health, and wellbeing. The UKHLS sample is designed to be representative of the UK population. The dataset is publicly accessible through the UK Data Service (https://www.understandingsociety.ac.uk/documentation/access-data/). Comprehensive documentation and resources for this dataset can be found on the Understanding Society website (https://www.understandingsociety.ac.uk/documentation/).

For our analyses, we extracted relevant data from Waves 1-11 of the UKHLS, which spanned from 2009-2021. Respondents were included in our final analyses if they were married, in a civil partnership, or cohabitating[2] at least once across the waves of data collection and if they responded to our key questions of interest about relationship satisfaction and time-saving purchases. Our final sample included 98,062 observations from 33,456 respondents. See Table 1 for the demographic characteristics of these respondents. These analyses were not pre-registered.

[2] Respondents who responded to the survey item (mastat_dv) with a "2" "3" or "10" are considered eligible for the relationship questions in the Understanding Society survey.

Table 1
Demographic Characteristics Across Studies

	1	**2**	**3**	**4a**	**4b**	**5**	**6**
% female	53.30%	91.90%	36.80%	53.7%	49.9%	52.1%	68.1%
Md, age	52.01 (14.84)	25-34	35-44	35-44	25-34	35-44	35-44
Md, annual income	£24,067.46 (20815.57)	$70-$79K	$90-$99K	$60-$69K	$60-$69K	$80-89K	$90-$99K
Md (range) # of children	.67 (0-8)	0 (0-4)	2 (1-6)	2 (1-6)	2 (1-6+)	2 (1-6)	2 (1-6)
Md # of work hours/week	32.94 (10.72)	40+ hours	40+ hours	31-40 hours	31-40 hours	31-40 hours	40+ hours

[1]individuals [2]observations

Note. In Study 1, the average working hours per week reported is conditional on employment. In Study 1, the income variable income represents annual personal income. For the remaining studies (Studies 2-6), the income variable represents annual household income. Across all studies, the number of children variable represents the number of children who are currently living in the home.

Measures

Relationship satisfaction. Relationship satisfaction was measured in Waves 1, 3, 5, 6, 8, and 10 using the 4-item Relationship Satisfaction subscale of the Revised Dyadic Adjustment Scale (RDAS; Busby et al., 1995). Respondents reported the frequency that they considered relationship termination, regretted getting married/living together, quarreling, and feeling irritated by their partners. Responses were collected on a 6-point scale ranging from 1 (*All of the time*) to 6 (*Never*). The survey calculated a composite score by summing responses to these four items. This composite score ranged from 0 to 20, with higher scores indicating greater relationship satisfaction (M = 16.09, SD = 2.66, *Range* = 0-20, α = .79).[3]

Time-saving purchases. Time-saving purchases were measured in Waves 2, 4, 6, 8, and 10. Respondents were asked to report on who was primarily responsible for the household chores: themselves, their partner, jointly, or by paying someone else. Respondents reported about the following household chores: "grocery shopping," "cooking," "cleaning/hoovering" (vacuuming in American English), "washing and ironing," "gardening" (yard work in American English), and "DIY jobs" (home improvement tasks and decorating). If respondents reported primarily paying someone else to complete the household task, their response was coded as a "1"; otherwise, their response was coded as "0" (10.18% of observations involved paying for at least one service). Responses were summed at each wave to create a composite score indicating the number of time-saving services that were purchased during that wave of data collection (M = 0.13, SD = 0.45, *Range* = 0-6). This approach allowed us to test within-person changes across

[3] Although this paper tests relationship satisfaction and commitment as separate constructs in all other studies, the available measure in the UKHLS dataset does not allow for this distinction. For consistency with the RDAS subscale, we retain the label "Relationship Satisfaction" while acknowledging that this measure encompasses both satisfaction and commitment aspects of self-reported relationship quality.

time as respondents shifted from completing more chores within the household to paying for more assistance. Each respondent appeared in the dataset an average of three times ($\bar{T}$ = 2.98).

Perceived stress. Perceived stress was measured across all 11 waves of data collection using a validated and widely used measure of distress, the 12-item General Health Questionnaire (GHQ-12; Goldberg et al. 1997). Respondents reported their psychological stress using a 4-point scale with the following response options: 1 = *Better than usual;* 2 = *Same as Usual,* 3 = *Less than usual,* 4 = *Much less than usual*. Example items included: "Have you recently lost much sleep over worry?" and "Have you recently felt you couldn't overcome your difficulties?" To calculate the composite measure, responses were reversed and summed at each wave. Higher scores indicated greater psychological distress (*M* = 11.14, *SD* = 5.54, *Range* = 0-36, α = .91).

Control variables. We tested whether our results held controlling for several variables that could explain the association between time-saving purchases and relationship satisfaction: age, gender (dummy-coded: 1 = *female*), and the number of children respondents reported living at home. The decision to include these covariates in our models was based on prior research exploring the association between time-use, time-perception, and wellbeing (DeVoe & Pfeffer, 2007; DeVoe & Pfeffer, 2010; Hershfield, Mogilner & Barnea, 2016). We also controlled for employment status and household income because the ability to make time-saving purchases and to increase the amount spent on these purchases over time could be an indirect measure of discretionary income (Headey, Muffels & Wooden, 2008). Lastly, we controlled for self-reported physical health because changes in physical health could influence how frequently people report paying for time-saving services as well as their relationship satisfaction (see also Whillans et al. 2017). These control variables were consistently measured across all eleven waves of data collection. See Table 2 for a correlation table between all key variables analyzed in Study 1.

Table 2
Correlation Matrix of Key Variables in Study 1

Variables	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1. Relationship Satisfaction	1							
2. Time-saving Purchases	--	1						
3. Stress	-.27***	.02***	1					
4. Physical Health	.13***	-.03***	-.38***	1				
5. Personal Income	.01***	.04***	-.03***	-.01***	1			
6. Children	-.11***	-.06***	.01***	.03***	-.03***	1		
7. Employed	-.04***	-.06***	-.08***	.11***	.38***	.13***	1	
8. Gender (dummy coded: 1 = *female*)	-.07***	.02***	.10***	-.03***	-.07***	.03***	-.09***	1
9. Age	.12***	.14***	-.04***	-.09***	.24***	-.34***	-.30***	.00

***$p \leq .001$

Note. The correlation between Relationship Satisfaction and Time-saving Purchases is marked as "--" due to the timing of measures in different waves which prevented direct correlation calculation. Correlations are based on annual observations. Income is log-transformed.

Analytical Approach. In Study 1, we tested the longitudinal association between time-saving purchases and relationship satisfaction (H1) using multilevel mixed-effects models. Specifically, due to the timing of the UKHLS survey, time-saving purchases at time *t* are predicting relationship satisfaction at time *t*+1, while controlling for relationship satisfaction at time *t*-1. This approach effectively handles the nested structure of the UKHLS data, where repeated observations are clustered within individuals over time (Hox et al., 2017; Luke, 2019).

This approach accounts for the temporal sequence of the data and allows us to examine how time-saving purchases at one point (*t*-1) predict relationship satisfaction at a subsequent point (*t*) (Grimm et al., 2017). By incorporating random coefficients, this model acknowledges the fact that the influence of time-saving purchases may vary across people, and it allows us to capture person-specific effects (Snijders & Bosker, 2011). This approach disaggregates the effect of time-varying predictors into both within-person and between-person components. In doing so, this model provides a clear understanding of how changes in time-saving purchases relate to changes in relationship satisfaction at both the individual and the group level (Curran & Bauer, 2011). Additionally, mixed-effects models are resilient to missing data and unequal measurement intervals, which are common challenges in longitudinal studies (Bates et al., 2015).

To strengthen causal inference in our longitudinal analysis, we included prior relationship satisfaction as a control variable in our models. This approach allows us to examine whether changes in time-saving purchases predict changes in relationship satisfaction beyond prior relationship satisfaction levels, testing the directional effect proposed in H1 (Grimm, Ram, & Estabrook, 2017). Including the lagged dependent variable (prior relationship satisfaction) serves multiple purposes: It accounts for autoregressive effects (Kearney, 2017), helps to control for unobserved time-invariant confounds (Allison, Williams & Moral-Benito, 2017), and addresses

potential reverse causality concerns (Leszczensky & Wolbring, 2022). This method complements our disaggregation of effects into between and within-person components by capturing additional time-varying individual specific factors (Curran & Bauer, 2011). We present models with and without covariates to demonstrate the robustness of our findings and reduce potential confounding effects (VanderWeele, 2019). This approach strengthens our ability to draw causal inferences about the impact of time-saving purchases on relationship satisfaction over time.

To test H5, we explore interactions between time-saving purchases and stress levels. Specifically, we examine how the within-person effect of time-saving purchases interacts with between-person differences and within-person fluctuations in perceived stress. This analytic strategy allows us to explore whether time-saving purchases protect against the negative impact of both acute and chronic stress levels on relationship satisfaction over time (Hoffman, 2015).

Results

Time-saving purchases and relationship satisfaction. Our main analyses focus on whether changes in time-saving purchases predict changes in relationship satisfaction over time.

Consistent with H1, there was a significant within-person effect of time-saving purchases on relationship satisfaction. Controlling for prior levels of relationship satisfaction, when respondents increased their use of paid time-saving services, they reported a small but significant increase in their self-reported relationship satisfaction, $B_W = .04$, $SE = .02$, $z = 2.23$, $p = .026$. These results were unchanged when we controlled for respondents' age, gender (dummy-coded:

1 = *female*), the number of children living at home, employment status, household income, and self-reported health, $B_W = .05$, $SE = .02$, $z = 2.45$, $p = .014$. See Models 1 and 2 in Table 3.[4]

[4] As evidenced in Table 3, the between-person effect of time-saving purchases on relationship satisfaction was not significant. This non-significant between-person effect may be attributable to the relative rarity of time-saving purchases in the sample. As most observations in this dataset did not involve time-saving purchases, there was limited variability on this measure across respondents, making it more difficult to detect significant between-person differences. We discuss this point further in the general discussion.

Table 3

Multilevel Mixed-Effects Models Examining Between-Person and Within-Person Effects of Time-Saving Purchases on Relationship Satisfaction

	Relationship Satisfaction Model 1				Relationship Satisfaction Model 2			
Fixed effects	***B***	***SE***	***z***	***p***	***B***	***SE***	***z***	***p***
b_W Relationship Satisfaction (lag)	-.22	.00	-61.75	<.001	-.22	.00	-61.49	<.001
b_B Relationship Satisfaction (lag)	1.03	.00	438.69	<.001	1.03	.00	420.23	<.001
b_W Time-saving	.04	.02	2.23	.026	.05	.02	2.45	.014
b_B Time-saving	.01	.01	.84	.403	.00	.01	.12	.903
b_W Personal Income	-	-	-	-	.00	.00	1.16	.244
b_B Personal Income	-	-	-	-	.00	.00	.20	.841
b_W Children	-	-	-	-	-.12	.01	-9.15	.000
b_B Children	-	-	-	-	.00	.01	-.69	.493
b_W Employed	-	-	-	-	-.05	.02	-2.14	.033
b_B Employed	-	-	-	-	.02	.02	.94	.350
b_W Physical Health	-	-	-	-	.05	.00	13.83	<.001
b_B Physical Health	-	-	-	-	.00	.00	.19	.847
b_B Gender (1 = *female*)	-	-	-	-	.00	.01	.41	.679
b_B Age	-	-	-	-	.00	.00	2.69	.007
Intercept	16.06	.00	3288.18	<.001	15.99	.03	466.37	<.001
Obs			79,084				78,427	
N			28,449				28,354	

w = within-person; *b* = between-person

Note. Models 1 and 2 include random intercepts and random slopes (not shown) for time-saving purchases. Within-person predictors were group-mean centered. Between-person predictors were grand-mean centered. Due to the timing of the UKHLS survey, time-saving purchases at time *t* are predicting relationship satisfaction at time *t*+1, while controlling for relationship satisfaction at time *t*-1. Covariates are for the same timepoint as the outcome, relationship satisfaction.

Reverse-Causal Analysis: Exploring the Direction of Influence. Next, we conducted an analysis to investigate the direction of the association between time-saving purchases and relationship satisfaction. We tested whether prior levels of relationship satisfaction predicted changes in the number of time-saving purchases respondents made in the subsequent period. This approach is consistent with best practices in longitudinal research for establishing temporal precedence and ruling out alternative explanations (Rohrer & Murayama, 2023).

Consistent with H1 and our proposed conceptual model, relationship satisfaction did not significantly predict time-saving purchases ($ps \geq .327$). This result held when controlling for covariates (Table 4, Models 1 and 2). These results suggest that changes in relationship satisfaction do not meaningfully predict the increased future use of time-saving services.

In contrast, the lagged value of time-saving purchases significantly predicted current levels of time-saving purchases (Table 4, Models 1 and 2). Within-subject analyses showed that respondents who made more time-saving purchases in the previous year reported lower time-saving services in the current year, $B_W = -.24$, $SE = .00$, $z = -61.78$, $p < .001$. This finding suggests a cyclical pattern: after periods of higher-than-average spending on time-saving purchases, individuals may reduce spending due to decreased need or budget constraints.

Between-subject analyses revealed that respondents who made more (vs. fewer) time-saving purchases in the past year significantly increased their use of these services in the current year, $B_B = 1.04$, $SE = .00$, $z = 340.05$, $p < .001$. These findings held with covariates.

While time-saving purchases predicted current relationship satisfaction and future use of these services, relationship satisfaction did not predict the subsequent use of time-saving services.

Table 4

Multilevel Mixed-Effects Models Examining Between-Person and Within-Person Effects of Relationship Satisfaction on Time-Saving Purchases

	Time Saving Purchases Model 1				**Time Saving Purchases Model 2**			
Fixed effects	***B***	***SE***	***z***	***P***	***B***	***SE***	***z***	***p***
b_W Time-saving *(lag)*	-.24	.00	-61.78	<.001	-.24	.00	-60.77	<.001
b_B Time-saving *(lag)*	1.04	.00	340.05	<.001	1.04	.00	327.73	<.001
b_W Relationship Satisfaction	.00	.00	.98	.327	.00	.00	1.23	.217
b_B Relationship Satisfaction	.00	.00	.67	.506	-.00	.00	-.16	.876
b_W Personal Income	-	-	-	-	.00	.00	2.70	.007
b_B Personal Income	-	-	-	-	-.00	.00	-2.03	.042
b_W Children	-	-	-	-	.01	.00	3.27	.001
b_B Children	-	-	-	-	.00	.00	1.91	.056
b_W Employed	-	-	-	-	.01	.00	3.09	.002
b_B Employed	-	-	-	-	.01	.00	2.11	.035
b_W Physical Health	-	-	-	-	-.00	.00	-1.36	.173
b_B Physical Health	-	-	-	-	.00	.00	.16	.875
b_B Gender (dummy coded: 1 = *female*)	-	-	-	-	-.00	.00	-.37	.714
b_B Age	-	-	-	-	.00	.00	5.31	<.001
Intercept	.14	.00	137.51	<.001	.11	.01	15.28	<.001
Obs			70,392				68,153	
N			27,744				27,162	

w = within-person; *b* = between-person

Note. Model 1 and Model 2 include random intercepts and random slopes (not shown) for relationship satisfaction. Within-person predictors were group-mean centered. Between-person predictors were grand-mean centered. Due to the timing of the UKHLS survey, relationship satisfaction at time *t* predicts time-saving purchases at time *t*+1, while controlling for time-saving purchases at time *t*-1. Covariates are for the same timepoint as the outcome, time-saving purchases.

Moderating role of stress on the benefits of time-saving. To test the moderating role of stress (H5), we expanded our multilevel model to include within- and between-person effects of stress and their interactions with time-saving purchases to predict relationship satisfaction.

Our analysis revealed a significant interaction of between-person time-saving purchases and within-person stress to predict relationship satisfaction, B_B Time-saving x B_W Stress = .02, SE = .00, z = 4.62, p < .001. This interaction was robust to the inclusion of covariates (Table 5, Models 1 and 2). Figure 2 illustrates this interaction and demonstrates that the positive effect of time-saving purchases intensifies as individuals report higher levels of stress over time.

These findings support H5 and suggest that time-saving purchases are especially beneficial for relationship satisfaction when people consistently make more of these purchases (between-person effect) and experience elevated levels of stress (within-person effect).

In contrast, as shown in Table 5, we did not observe significant interactions between within-person shifts in time-saving purchases and within-person shifts in stress, within-person shifts in time-saving purchases and between-person differences in stress, or between-person differences in time-saving purchases and between-person differences in stress to predict relationship satisfaction. These findings highlight the specific conditions under which time-saving purchases are most beneficial for relationship satisfaction—when individuals consistently invest in time-saving purchases and when they experience periodic increases in stress.

Table 5
Interactions Between Time-Saving Purchases and Stress on Relationship Satisfaction

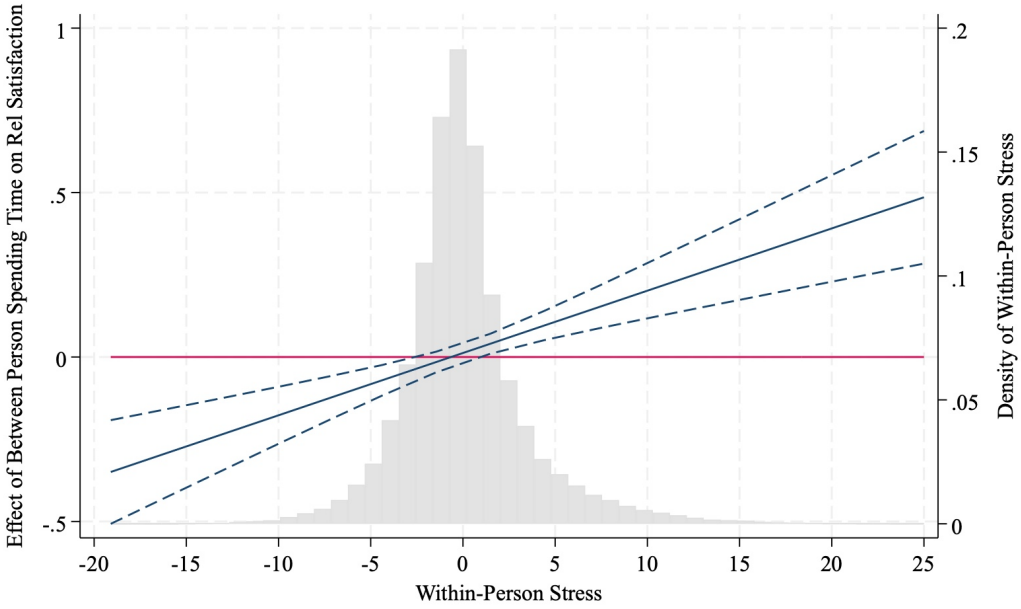
	Relationship Satisfaction Model 1				Relationship Satisfaction Model 2			
Fixed effects	***B***	***SE***	***z***	***P***	***B***	***SE***	***z***	***p***
b_W Relationship Satisfaction (lag)	-.21	.00	-60.24	<.001	-.21	.00	-60.12	<.001
b_B Relationship Satisfaction (lag)	1.03	.00	413.88	<.001	1.03	.00	407.16	<.001
b_W Time-saving	.05	.02	2.61	.009	.05	.02	2.90	.004
b_B Time-saving	.01	.01	.90	.368	.00	.01	.09	.926
b_W Stress	-.06	.00	-39.82	<.001	-.05	.00	-37.84	<.001
b_B Stress	-.00	.00	-2.26	.024	-.00	.00	-2.13	.033
b_W Time-saving *x* b_W Stress	-.00	.01	-.23	.815	-.00	.01	-.75	.452
b_B Time-saving *x* b_W Stress	.02	.00	4.62	<.001	.02	.00	4.96	<.001
b_W Time-saving *x* b_B Stress	.00	.00	.77	.442	.01	.00	1.15	.250
b_B Time-saving *x* b_B Stress	.00	.00	.60	.546	.00	.00	.34	.734
b_W Personal Income	-	-	-	-	.00	.00	.64	.525
b_B Personal Income	-	-	-	-	.00	.00	.17	.868
b_W Children	-	-	-	-	-.11	.01	-9.01	<.001
b_B Children	-	-	-	-	-.00	.01	-.44	.663
b_W Employed	-	-	-	-	-.07	.02	-3.12	.002
b_B Employed	-	-	-	-	.02	.02	1.11	.267
b_W Physical Health	-	-	-	-	.03	.00	7.17	<.001
b_B Physical Health	-	-	-	-	-.01	.01	-1.13	.260
b_B Gender (dummy coded: 1 = *female)*	-	-	-	-	.01	.01	.85	.396
b_B Age	-	-	-	-	.00	.00	2.66	.008
Intercept	16.07	.00	3,304.42	<.001	15.98	.03	470.18	<.001
Obs			78,873				78,234	
N			28,406				28,317	

w = within-person; *b* = between-person

Note. Models 1 and 2 include random intercepts and random slopes (not shown) for time-saving purchases and stress. Within-person predictors were group-mean centered. Between-person predictors were grand-mean centered.

Figure 2

Effect of Between-Person Spending on Time Saving Purchases on Relationship Satisfaction Across Within-Person Changes in Stress



Note. The solid blue line represents the effect of between-person time-saving purchases on relationship satisfaction across varying levels of within-person stress, with the dashed blue lines indicating 95% confidence intervals. The positive slope of the blue line indicates that time-saving purchases have a stronger positive effect on relationship satisfaction when individuals experience higher than usual stress levels. The effect becomes significantly positive (above the red line) at above average stress levels, suggesting that time-saving purchases are particularly beneficial during periods of heightened stress. The gray histogram represents the distribution of within-person stress, which is approximately normally distributed around zero.

Study 1 Discussion

Our analysis of an eleven-year longitudinal panel survey provides evidence for H1: individuals who increased their use of paid time-saving services reported a small but significant increase in relationship satisfaction. This within-person association persisted after controlling for prior relationship satisfaction, demographic characteristics, and fluctuations in personal circumstances including changes in household income.

Critically, our analyses suggest a unidirectional influence of time-saving purchases on relationship satisfaction. While the increased use of time-saving services predicted changes in relationship satisfaction over time, current relationship satisfaction did not drive these purchase decisions. This finding supports our conceptual proposition that people who increase their use of time-saving services will report gains in relationship satisfaction over time and that changes in relationship satisfaction will not explain this association.

We also found initial evidence for H5: individuals who used more time-saving services on average benefited more from these purchases when their stress levels increased over time. These results suggest that time-saving purchases may protect against the negative impact of stress on relationship satisfaction, particularly during periods of heightened stress. The increased relationship benefit of time-saving services for regular users indicates additional advantages for those with established routines and comfort with outsourcing tasks. This familiarity may allow people to leverage these services more efficiently during stressful periods without the added burden of adapting to new strategies. Future research should directly test this possibility.

The within-subject analyses used in Study 1 mitigate concerns about stable individual differences and autocorrelations explaining the observed association between time-saving

purchases and relationship satisfaction. The large, representative sample allowed us to test long-term patterns in the association between time-saving purchases and relationship satisfaction.

Despite these methodological strengths, Study 1 has two key limitations. First, while our longitudinal design and comprehensive controls reduce potential confounds, we cannot fully eliminate omitted variable bias. Unmeasured time-varying factors such as fluctuations in discretionary income or shifts in work-life balance could influence both the propensity to make time-saving purchases and relationship satisfaction. Second, the constraints of secondary data resulted in the use of suboptimal measures for key variables. Notably, only 10.18% of observations indicated payment for time-saving services, likely underestimating their prevalence and attenuating the observed effects. This low percentage likely stems from the survey wording, which asked about the primary responsible party for each task—the individual or a service provider. In Study 2, we address these limitations by collecting primary data with more precise measures of time-saving purchases, stress, relationship satisfaction, and relevant covariates.

Study 2

Overview

In Study 2, we conducted a six-week daily diary study to investigate the association between time-saving purchases and relationship satisfaction for members of dual-income households. Study 2 tests whether individuals report higher relationship satisfaction on days when they make time-saving purchases (H1) and whether these time-saving purchases are especially beneficial for working adults who are experiencing higher levels of stress (H5).

Study 2 compliments Study 1 by using a different time scale and methodology. Study 2 uses daily assessments of time-saving purchases to minimize recollection bias (Kahneman et al. 2006) and capture daily within-person fluctuations in relationship satisfaction.

Mirroring the approach taken in Study 1, we examine the potential bidirectional association between relationship satisfaction and time-saving purchases. This approach once again allows us to address concerns about reverse causality—the possibility that fluctuations in relationship satisfaction predict changes in time-saving purchases rather than vice versa.

Our recruitment strategy targeted working adults in committed romantic relationships who regularly made time-saving purchases. This strategy increased our statistical power by improving the likelihood of capturing at least one such purchase during the six-week study.

Participants and Data Description

We analyzed data from 71 respondents who participated in a six-week daily diary study. Respondents were recruited using Facebook advertisements and they were eligible to participate in the full study if they were in a committed romantic relationship, lived full-time with their partner, worked more than 30 hours per week, had a romantic partner who worked at least 30 hours per week, and made at least two time-saving purchases in a typical month.

Respondents completed short online surveys each evening, reporting on their daily relationship satisfaction, stress levels, and purchase behavior. Daily text messages with survey links were sent at 7 PM each day, with instructions to complete the survey "at the end of the day." Each completed survey earned one entry into a prize lottery for a $100 Amazon gift card.

Of the 74 initial enrollees, three respondents were excluded from our final analyses due to a lack of daily diary data, resulting in a final sample of 71 respondents. See Table 1 for the demographic characteristics of the final sample. The dataset consists of 1,873 complete responses, averaging 26.38 responses per participant over the 42-day study period.[5] This represents a 63% daily completion rate. Table 6 displays correlations between key variables.

[5] Survey completion ranged from 1 to 35 days. All participants were retained. Sensitivity analyses showed that excluding low-response participants did not significantly alter these results.

Table 6

Correlation Matrix for Key Variables in Study 2

Variables	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1. Relationship Satisfaction	1							
2. Time Saving Purchases (dummy coded: 1 = *yes*)	.04†	1						
3. Perceived Stress	-.18***	-.03	1					
4. Material Purchases (dummy coded: 1 = *yes*)	.03	.08**	-.01	1				
5. Experiential Purchases (dummy coded: 1 = *yes*)	.03	.05*	-.03	.05*	1			
6. Age	-.23***	0	0	0	0	1		
7. Work Hours	-.09***	0	0	0	0	.19***	1	
8. Children Living at Home	-.11***	0	0	0	0	.51***	.17***	1
9. Household Income	.01	0	0	0	0	.29***	.32***	.29***

†$p \leq .10$, *$p \leq .05$; **$p \leq .01$; ***$p \leq .001$

Note. This correlation matrix includes both within-person and between-person effects. Variables 1-5 (Relationship Satisfaction, Time Saving Purchases, Stress, Material Purchases, and Experiential Purchases) are person-mean centered, representing within-person deviations from individual averages. These correlations reflect day-to-day associations within individuals. Variables 6-9 (Age, Work Hours, Children Living at Home, and Household Income) are between-person variables, constant for each person across observations. Correlations involving these variables should be interpreted as relationships across individuals. All correlations are based on daily observations.

Measures

Daily relationship satisfaction. We measured day-level relationship satisfaction using a single item measure that was adapted from the Dyadic Adjustment Scale (Spanier, 1976): "How satisfied are you with your romantic relationship right now?" (1 = *Not at all* to 6 = *Extremely*). This measure is commonly used in longitudinal designs because it effectively captures both individual differences and fluctuations in relationship satisfaction (Gadassi et al., 2016).

Daily stress. We used a short, face-valid assessment of overall stress by measuring general self-reported day-level stress using a single item (Folkman & Lazarus, 1985; Folkman et al., 1986a, 1986b). Respondents reported their stress by responding to the item, "How stressed are you right now?" on a scale from 1 = *Not at all* to 6 = *Extremely*.

Time-saving purchases. After completing the relationship and stress items, respondents indicated whether they had made a time-saving purchase with their partner that day using the item: "Did you and your partner make any time-saving purchases today (an item or service that allowed you and your partner to have more free time, e.g. taking a taxi instead of the bus)?" (dummy coded: 1 = *yes*). This measure was adapted from past research (Whillans et al., 2017).

Control variables. Consistent with the approach taken in Study 1, we tested whether our results held controlling for several variables that could otherwise explain the association between time-saving purchases and relationship satisfaction: age, work hours, and the number of children living at home.[6] Recognizing that time-saving purchases might serve as an indirect measure of discretionary income, we took additional steps to control for financial factors. We included household income as a control variable, and we tracked whether respondents made material or experiential purchases during each day of the study. This approach allowed us to disentangle the

[6] Given the skewed distribution (91.9% female), we did not control for gender in our analysis.

effect of time-saving purchases from those of general spending ability and other types of purchases. If respondents only experienced greater relationship satisfaction on days where they made time-saving purchases because they had more discretionary income available to them, controlling for these indicators should eliminate the association between time-saving purchases and relationship satisfaction (Headey, Muffels, & Wooden, 2008; Van Boven & Gilovich, 2003).

To assess whether respondents made material and experiential purchases each day of the study, we asked: "Did you and your partner make any material purchases today (tangible object(s) that you and your partner obtained to keep in your possession, e.g., clothing)?" (dummy coded: 1 = *yes*) and "Did you and your partner make any experiential purchases today (a purchase that you and your partner bought with the primary intention of buying a life experience, e.g., concert tickets)?" (dummy coded: 1 = *yes*). We randomized the presentation of these purchase questions each day.

Results

Analytic approach. We followed the same analytic approach from Study 1, while accounting for the unique characteristics of the daily diary design. We tested the association between time-saving purchases and relationship satisfaction using multilevel mixed-effects models with disaggregated within-person and between-person effects to address confounding factors and time-invariant alternative explanations (Curran & Bauer, 2011; Wang & Maxwell, 2015). This approach allows us to isolate the effect of daily fluctuations in time-saving purchases on changes in relationship satisfaction, controlling for stable individual differences that may influence this association, such as household income (Allison, 2009; Hoffman & Stawski, 2009).

Unlike Study 1 which focused on year-level analyses, Study 2 examined daily effects. This allowed us to capture the immediate, short-term association between time-saving purchases

and relationship satisfaction. Given our sample selection criteria, which excluded people who did not frequently report making time-saving purchases, we anticipated limited between-person variability in time-saving purchases. To avoid potentially biased interpretations (Raudenbush & Bryk, 2002), we primarily focused on reporting and interpreting the within-subject analyses.

Consistent with Study 1 (H1), we tested the association between daily fluctuations in time-saving purchases and relationship satisfaction. We isolated the influence of daily changes in time-saving purchases on relationship satisfaction by controlling for relevant covariates, including whether respondents reported making material and experiential purchases each day, age, household income, hours worked each week, and the number of children living at home. Mirroring Study 1, we examined the lagged effect of time-saving purchases on relationship satisfaction controlling for the prior day's satisfaction levels (Grimm, Ram, & Estabrook, 2017).

We then investigated whether fluctuations in time-saving purchases interacted with stress to predict relationship satisfaction (H5). Specifically, we explored how daily fluctuations in time-saving purchases (within-person changes) interacted with an individual's overall stress levels (between-person differences) and changes in stress levels over time (within-person changes; Preacher, Curran, & Bauer, 2006). This allowed us to explore whether the association between time-saving purchases and relationship satisfaction was moderated by stress, while considering both chronic stress levels and day-to-day fluctuations (Hoffman, 2015; Wang & Maxwell, 2015).

Results

Time-saving purchases and relationship satisfaction. Our main analyses focused on the association between time-saving purchases and relationship satisfaction. Consistent with H1, we found a significant within-person effect of time-saving purchases on relationship satisfaction: On days when individuals made time-saving purchases, they reported higher relationship satisfaction than their typical levels, $B_w = .14$, $SE = .05$, $t = 2.74$, $p = .006$ (Table 7, Model 1).

The interpretation of these results was unchanged when we controlled for whether respondents made material or experiential purchases each day as well as their age, the number of hours they typically worked per week, the number of children they had living at home, and their annual household income, $B_w = .13$, $SE = .05$, $t = 2.41$, $p = .016$ (Table 7, Model 2).

Next, we examined the association between time-saving purchases and relationship satisfaction controlling for relationship satisfaction from the previous day. In this model, the within-person effect of time-saving purchases on relationship satisfaction remained statistically significant, $B_w = .14$, $SE = .05$, $t = 2.95$, $p = .003$. This result held with covariates (Table 7, Models 3 and 4). Thus, the association between time-saving purchases and relationship satisfaction persisted even after accounting for relationship satisfaction on the previous day.

Consistent with our selection criteria, which limited between-person variability in time-saving purchases, the between-person effect of time-saving purchases on relationship satisfaction was not significant (Table 7, Models 1-4). These results suggest that the association between time-saving purchases and relationship satisfaction was predicted by within-person fluctuations in time-saving purchases rather than by stable individual differences in purchasing behavior.

Table 7

Predicting Relationship Satisfaction from Time-Saving Purchases

	Relationship Satisfaction Model 1				**Relationship Satisfaction Model 2**				**Relationship Satisfaction Model 3**				**Relationship Satisfaction Model 4**			
Fixed effects	***B***	***SE***	***z***	***p***	***B***	***SE***	***z***	***p***	***B***	***SE***	***z***	***p***	***B***	***SE***	***z***	***p***
b_W *Relationship Satisfaction (lag)*	-	-	-	-	-	-	-	-	.24	0.02	10.19	<.001	.24	.05	5.01	<.001
b_B *Relationship Satisfaction (lag)*	-	-	-	-	-	-	-	-	1.01	0.02	50.76	<.001	1.00	.01	168.63	<.001
b_W Time-saving (1 = *yes*)	.14	.05	2.74	.006	.13	.05	2.41	.016	.14	0.05	2.95	.003	.13	.05	2.65	.008
b_B Time-saving (1 = *yes*)	-.53	.69	-.78	.437	-.15	.93	-.16	.875	.01	0.12	.11	.913	-.05	.05	-1.05	.293
b_W *Material* (1 = *yes*)	-	-	-	-	.08	.04	1.78	.076	-	-	-	-	.07	.04	1.69	.091
b_B *Material* (1 = *yes*)	-	-	-	-	.57	.61	.94	.349	-	-	-	-	-.07	.04	-1.82	.069
b_W *Experiential* (1 = *yes*)	-	-	-	-	.05	.06	.72	.473	-	-	-	-	.02	.06	.36	.716
b_B *Experiential* (1 = *yes*)	-	-	-	-	1.01	1.44	.70	.482	-	-	-	-	.22	.06	3.45	.001
b_B Age	-	-	-	-	-.29	.14	-2.10	.036	-	-	-	-	-.00	.01	-.22	.830
b_B Work hours					.04	.22	.21	.836					.02	.01	1.72	.086
b_B Children	-	-	-	-	-.01	.12	-.07	.941	-	-	-	-	.00	.01	.16	.877
b_B HH Income	-	-	-	-	.01	.04	.32	.750	-	-	-	-	-.00	.00	-1.23	.219
Intercept	4.83	.17	28.54	<.001	5.01	.37	13.51	<.001	-.03	0.10	-.33	.743	.02	.04	.53	.599
Obs		1,873				1,737				1,617				1,494		
N		71				66				69				64		

w = within-person; *b* = between-person

Note. Models 1 and 2 include random intercepts and random slopes (not shown) for time-saving purchases and stress. Within-person predictors were group-mean centered and are for the same timepoint as the outcome, relationship satisfaction. Between-person predictors were grand-mean centered. All variables labelled 1 = *yes* in this table are dummy coded such that 1 = *yes* and 0 = *no*.

Reverse Causality Analysis: Exploring the Direction of Influence. To address potential concerns about reverse causality, we conducted additional analyses to examine whether relationship satisfaction from the previous day predicted present day time-saving purchases.

Consistent with the results of Study 1, neither the within-person $B_W = .00$, $SE = .01$, $z = .10$, $p = .918$ or the between-person $B_B = .00$, $SE = .00$, $z = 1.14$, $p = .256$ effects of relationship satisfaction on time-saving purchases were significant (Table 8, Model 1). These results held with covariates (Table 8, Model 2).

These results strengthen our confidence in the proposed direction of the association between time-saving purchases and relationship satisfaction by suggesting that fluctuations in relationship satisfaction do not meaningfully influence the decision to buy time.

Table 8

Multilevel Mixed-Effects Models Examining Between-Person and Within-Person Effects of Relationship Satisfaction on Time-Saving Purchases

	Time-saving Purchases Model 1				**Time-saving Purchases Model 2**			
Fixed effects	***B***	***SE***	***z***	***p***	***B***	***SE***	***z***	***p***
b_W Time-saving (1 = *yes*) *(lag)*	-.01	.03	-.39	.700	-.02	.03	-.62	.538
b_B Time-saving (1 = *yes*) *(lag)*	-1.01	.03	-38.1	<.001	-.99	.02	-44.45	<.001
b_W Relationship Satisfaction	.00	.01	.10	.918	.00	.01	.00	.999
b_B Relationship Satisfaction	.00	.00	1.14	.256	.00	.00	1.13	.259
					-.07	.03	-2.39	.017
b_W Material Purchase (1 = *yes*)	-	-	-	-	.04	.02	1.86	.063
b_B Material Purchase (1 = *yes*)	-	-	-	-	-.06	.04	-1.41	.158
b_W Experiential Purchase (1 = *yes*)	-	-	-	-	-.07	.04	-1.67	.095
b_B Experiential Purchase (1 = *yes*)	-	-	-	-	.00	.00	-.54	.586
b_B Age	-	-	-	-	-.01	.01	-1.09	.277
b_B Work hours					.00	.00	.63	.530
b_B Children at Home	-	-	-	-	.00	.00	-.16	.870
b_B Household Income	-	-	-	-	1.98	.03	76.54	<.001
Intercept	1.98	.02	105.48	<.001	-.02	.03	-.62	.538
Obs			1,617				1,494	
N			69				64	

w = within-person; *b* = between-person

Note. Models 1 and 2 include random intercepts and random slopes for time-saving purchases. Within-person predictors were group-mean centered and are for the same timepoint as the outcome, relationship satisfaction. Between-person predictors were grand-mean centered. All variables labelled 1 = *yes* in this table are dummy coded such that 1 = *yes* and 0 = *no*.

Moderating role of stress on the benefits of time-saving purchases. Next, we examined the moderating role of stress on the association between time-saving purchases and relationship satisfaction (H5). Given that our sample consisted exclusively of respondents who made time-saving purchases, we focused on the within-person effects to maintain statistical power and to capture the dynamic nature of these associations. We analyzed how daily fluctuations in time-saving purchases (within-person changes) interacted with both overall stress levels (between-person differences) and changes in stress over time (within-person changes).

As per Table 9, consistent with H5, we found a significant interaction effect of within-person time-saving purchases and between-person stress, B_W Time-saving x B_B Stress = .10, SE = .04, t = 2.33, p = .020. These results held with covariates (Table 9, Models 1 and 2).

Figure 3 illustrates this interaction. The upward-sloping blue line shows that the positive effect of time-saving purchases on relationship satisfaction intensifies as stress levels increase. This effect becomes statistically significant at stress levels of 2.70 and above as indicated by the lower confidence interval crossing zero. While time-saving purchases have negligible effects for individuals who report relatively lower levels of stress, the positive association of time-saving purchases with relationship satisfaction increases for those experiencing higher levels of stress.

These results suggest that time-saving purchases may serve as a particularly effective strategy for maintaining or enhancing daily relationship satisfaction among working adults who regularly experience elevated levels of stress.

Table 9

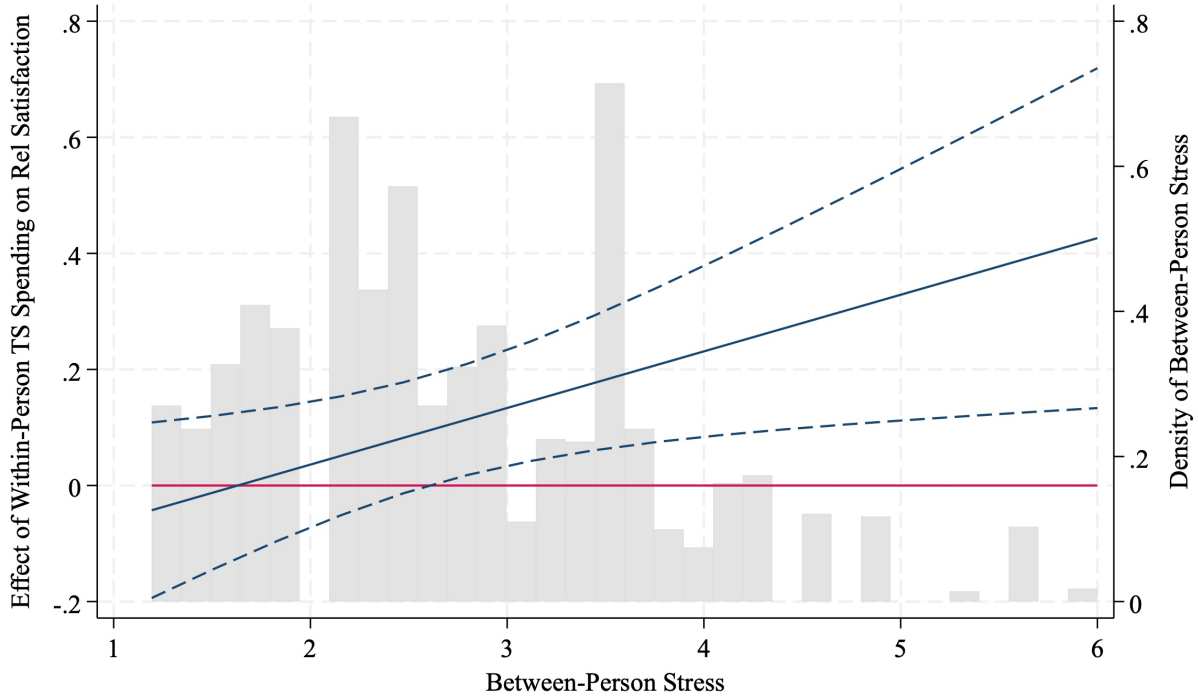
Interaction Between Time-Saving Purchases and Stress on Relationship Satisfaction

	Relationship Satisfaction Model 1				Relationship Satisfaction Model 2			
Fixed effects	***B***	***SE***	***z***	***p***	***B***	***SE***	***z***	***p***
b_W Time-saving (1 = *yes*)	-.16	.12	-1.32	.186	-.20	.12	-1.60	.111
b_B Time-saving (1 = *yes*)	-.43	.70	-.62	.533	.30	.92	.33	.741
b_W Stress	-.22	.03	-7.24	<.001	-.24	.03	-7.42	<.001
b_B Stress	-.35	.11	-3.11	.002	-.39	.10	-3.79	<.001
b_W Time-saving *x* b_B Stress	.10	.04	2.33	.020	.11	.04	2.55	.011
b_W Time-saving *x* b_W Stress	-.00	.06	-.07	.948	-.02	.07	-.23	.820
b_W *Material* (1 = *yes*)	-	-	-	-	.05	.05	1.13	.259
b_B *Material* (1 = *yes*)	-	-	-	-	-.21	.62	-.33	.739
b_W *Experiential* (1 = *yes*)	-	-	-	-	.03	.06	.55	.580
b_B *Experiential* (1 = *yes*)	-	-	-	-	1.38	1.37	1.01	.314
b_B Age	-	-	-	-	-.32	.11	-2.97	.003
b_B Work hours	-	-	-	-	.28	.20	1.44	.149
b_B Children	-	-	-	-	.02	.08	.22	.828
b_B Household Income	-	-	-	-	-.04	.04	-.96	.336
Intercept	5.79	.31	18.88	<.001	6.49	.43	15.19	<.001
Obs			1,873				1,737	
N			71				66	

w = within-person; *b* = between-person

Note. Models 1 and 2 includes random intercepts and random slopes for time-saving purchases and stress. Within-person predictors were group-mean centered and are for the same timepoint as the outcome, relationship satisfaction. Between-person predictors were grand-mean centered. All variables labelled 1 = *yes* in this table are dummy coded such that 1 = *yes* and 0 = *no*.

Figure 3
Effect of Within-Person Spending on Time Saving on Relationship Satisfaction Across Between Person Stress



Note. The blue line shows the effect of time-saving purchases on relationship satisfaction across stress levels with 95% confidence intervals that are represented by dashed lines in this figure. The positive slope indicates that time-saving purchases have a stronger positive effect on relationship satisfaction for respondents who experience relatively higher levels of stress. This association becomes significantly positive at moderate stress levels, suggesting that time-saving purchases are particularly beneficial for individuals who consistently experience higher stress.

Discussion

Study 2 sheds light on the daily dynamics of time-saving purchases and relationship satisfaction for members of dual-income couples. Our analysis revealed consistent within-person effects across several multilevel models, providing robust evidence for a positive association between daily time-saving purchases and relationship satisfaction. This association remained significant when controlling for the previous day's relationship satisfaction and other purchase decisions. These findings suggest that time-saving purchases have a unique and immediate influence on relationship satisfaction. The persistence of this result across various model specifications strengthens our confidence in the association between time-saving purchases and daily fluctuations in relationship satisfaction for members of dual-income couples.

Our reverse causality analysis supports the proposed directional association between time-saving purchases and relationship satisfaction. This approach—combined with lagged predictors and outcomes—helps to address temporal precedence which is a key criterion for establishing causal relationships in non-experimental designs (Hoffman & Stawski, 2009).

Study 2 illuminates the micro-dynamics of how time-saving purchases predict relationship satisfaction. Study 1 found that changes in time-saving purchases predict greater relationship satisfaction in subsequent years. Study 2 demonstrates increased relationship satisfaction on days when time-saving purchases were made. These results suggest a cumulative process where daily improvements may accumulate over time, resulting in the higher overall relationship satisfaction that we observed among time-saving purchasers in Study 1.

Both studies highlight stress as a moderator on different time scales. Study 1 found that time-saving purchases were particularly beneficial when stress levels increased across years. Study 2 demonstrated this effect daily, especially for individuals who reported consistently

higher levels of stress. The different time scales (years versus days) may account for this variation in stress-related findings. Over years, individuals are likely to experience a wider range of stressors, making within-person effects easier to detect. In contrast, stress levels may be more stable over a six-week period, making between-person differences more salient.

Despite these minor differences across studies, Study 2 corroborates the positive association between time-saving purchases and relationship satisfaction, particularly for those experiencing higher levels of stress. The daily diary methodology offers a granular examination of short-term effects while addressing potential confounds and reverse causality concerns.

However, these studies leave open important empirical questions. Notably, our dichotomous measures of time-saving purchases limit our understanding of which features predict relationship satisfaction. We were unable to test H2—whether members of dual-income couples report greater satisfaction when these purchases provide a greater influx of time.

Study 3 addresses these limitations by investigating how purchase characteristics predict relationship satisfaction. We hypothesize that the amount of time saved through these purchases will significantly predict relationship satisfaction (H2). We also tested several other purchase characteristics that could predict relationship satisfaction: the amount of money spent on time-saving purchases, whether these purchases could be classified as products or services, who in the relationship benefited most, whether couples made these purchases together, and usefulness.

To the extent that money spent on time-saving purchases is a proxy for positive impact (Aknin et al. 2013), it is possible that the amount of money spent on these purchases could predict relationship satisfaction. We therefore tested whether the amount of money that couples reported spending on time-saving purchases predicted relationship satisfaction.

Compared to time-saving services, time-saving products could result in higher levels of hedonic adaption if consumers acclimate to daily use, thereby reducing satisfaction. Thus, we tested whether people benefited more from time-saving services versus time-saving products.

It is possible for time-saving purchases to save time within the relationship, such as by directly addressing household chores, or by saving time outside of the relationship, such as by removing unpleasant work tasks. Because of this, we tested whether the benefits of time-saving purchases depended on whether the purchases saved time within or outside of the relationship.

Couples who make financial decisions together report greater relationship satisfaction (Gladstone et al. 2022). Relatedly, chore equity is a significant predictor of relationship satisfaction (Gordon et al. 2022). We therefore tested the effect of making time-saving purchases jointly, and the effect of who benefitted most from the time-saving purchases (i.e. the respondent, the respondents' partner, or both the respondent and partner equally).

To the extent that time-saving purchases are more likely to solve important time demands for members of dual-income couples, these purchases could have stronger benefits for relationship satisfaction when these purchases are more useful or practical. We tested whether the benefits of time-saving purchases depended on whether members of dual-income couples made time-saving purchases that were practical (i.e. utilitarian) or fun (i.e. hedonic).

In Study 3, we employed a cross-sectional survey. This decision allowed us to include more comprehensive measures of our key outcomes, moderators, mediators, and covariates.

Study 3

Overview

In Study 3, we attempted to replicate the results of Studies 1 and 2 by testing whether members of dual-income couples who made time-saving purchases reported greater relationship

satisfaction (H1). Once again, we explored whether the benefits of time-saving purchases were stronger for members of dual-income couples who reported higher levels of stress (H5). We controlled for similar covariates from Studies 1 and 2: age, gender (dummy-coded: 1 = *female*), the number of children living at home, and annual household income.

Moving beyond Studies 1 and 2, we controlled for how much money respondents reported spending on material and experiential purchases, instead of controlling only for a dichotomous measure of whether respondents made material or experiential purchases. We also included more comprehensive measures of relationship satisfaction and perceived stress. Most importantly, we included an extensive set of purchase characteristic items. These items allowed us to test the hypothesis that the amount of time saved would be a significant predictor of relationship satisfaction (H2). These items also provided an initial test of the hypothesis that quality time would be a significant predictor of the relationship benefits of buying time (H3).

In this and all subsequent studies that rely on cross-sectional designs (Studies 5 and 6), respondents reflected on their experiences in the past week. This decision is based on research showing that people can become inaccurate in recalling daily time-use experiences at longer time horizons (e.g., Kahneman et al. 2006).

Participants and Procedure

We recruited respondents from Qualtrics, a professional survey company. Respondents were eligible to complete the study if they were employed full-time ($\geq$ 30 hours per week), married or in a marriage-like relationship, and lived together with their partner who was also employed $\geq$ 30 hours per week. We targeted 600 respondents and slightly over-recruited, resulting in a final sample of $N = 691$. See Table 1 for demographic information.

Respondents completed two validated measures of relationship satisfaction.[7] Respondents reported how much stress they had experienced in the past week and whether they had spent any money on time-saving, material, and/or experiential purchases with their partner in the past week. If respondents had made time-saving purchases, they were prompted to report how much time these purchases had saved themselves and their partner, how much money they and their partner had spent on these purchases, whether these purchases were predominately products or services, whether these purchases saved time within or outside of the relationship (allowing us to provide an initial test of whether spending this time together predicted relationship satisfaction; H3), which partner had made these purchases, which partner had benefited most from these purchases, and the extent to which these purchases were made jointly. All respondents completed the following demographic items: gender (dummy-coded: 1 = *female*), annual household income, age, number of hours worked per week, and the number of children living at home.

Measures

Relationship satisfaction. Respondents completed a four-item measure of relationship satisfaction, where they reported their overall relationship satisfaction on a scale from *1 = Extremely Dissatisfied* to 7 = *Extremely Satisfied* (e.g., "How satisfied are you with your marriage or marriage-like relationship?"; $\alpha = .92$; Cleary et al., 1985). Respondents then completed the five-item relationship satisfaction subscale from the Investment Model Scale on a scale ranging from *1 = Strongly Disagree* to *7 = Strongly Agree* (e.g., "My relationship was much better than others' relationship"; $\alpha = .94$; Rusbult, Martz & Agnew, 1998).

[7] Respondents also completed a measure of relationship commitment. It is not discussed here because it was not central to our investigation and was not included in subsequent studies. Complete survey items and study data are available through the Open Science Framework (OSF).

For parsimony, we created a standardized composite from these two highly correlated measures (correlated at $r(679) = .85$, $p < .001$; $\alpha = .96$). This decision was supported by an exploratory factor analysis showing that the nine items from these two scales loaded together on one factor that explained 73% of the variance, with factor loadings that ranged from .74 to .91.

Perceived stress. Respondents completed the 11-item perceived stress scale (PSS), where they reported how much stress they had experienced from *1 = Never*, *2 = Almost Never, 3 = Sometimes, 4 = Fairly Often, 5 = Very Often* (E.g., "In the last week, how often have you felt that you were unable to control the important things in your life?"; $\alpha = .83$; Cohen et al. 1983).

Time-saving purchases. To measure time-saving purchases, respondents completed a question adapted from Whillans et al. 2017: "In the past week, did you and your partner spend any money on time-saving purchases? Specifically, did you and your partner spend any money with the primary intention of acquiring free time: a purchase that allowed you and your partner to have more time? For example, did you and your partner spend money to take a taxi instead of the bus, purchase household services (e.g., lawn-mowing, laundry, or housecleaning services), use online services (online accounting software and research services), or purchase more expensive groceries from a closer grocery store?" 42.7% of respondents had made time-saving purchases with their partner in the past week. On average, these purchases saved 18.01 hours ($SD = 14.92$).

Purchase Characteristics. If respondents spent any money on time-saving purchases with their partner in the past week, they were asked to complete several additional measures.

Amount of Time Saved. First, they reported how much time (in hours) that these purchases had saved themselves and their partner in the past week (*from 0 hours to 50 hours*).

Amount of Money Spent. Then, they reported how much money they and their partner had spent on these purchases in the past week (*from $0 to More than $2500*).

Products or Services. On two items that summed up to 100%, respondents reported the extent to which these purchases were products or services using a validated definition of products and services (Palmer, 2012).

Saved Time in the Relationship. On two items that summed up to 100%, respondents reported the extent to which these purchases saved time within or outside the relationship.

Who Saved Time. Respondents reported whether these purchases saved them time, their partner time, or themselves and their partner time equally; responses summed up to 100%.

Who Benefited from these Purchases. Respondents reported whether they had made these purchases for their partners' benefit, their own benefit, or whether their partner had made these purchases to benefit them; responses to these items summed up to 100%.

Joint Decisions. Respondents reported whether they had made these purchases together with their partner in the past week on a scale from 1 = *Strongly Disagree*; 7 = *Strongly Agree*.

Utilitarian or Hedonic. Finally, respondents reported whether these purchases were primarily utilitarian or hedonic in nature using a validated measure from published research (Dhar & Wertenbroch, 2000) with the response options: *1 = Primarily utilitarian* – defined as useful, practical, functional, something that helps you achieve a goal (e.g., a vacuum cleaner), *2 = Primarily hedonic* – defined as pleasant, fun, something that is enjoyable, and appeals to the senses (e.g., perfume), *3 = Both utilitarian and hedonic*, *4 = Neither*.

Discretionary income & demographics. We controlled for how much money people reported spending on material and experiential purchases made jointly with their partners in the past week (Van Boven & Gilovich, 2003). We also controlled for: age, gender (dummy-coded: 1 = *female*), the number of children living at home, and annual household income.

Table 10 presents descriptive statistics for key variables. Tables 11 and 12 provide correlation matrices. Table 11 presents the correlations between purchase characteristics. Table 12 presents the correlations between purchase characteristics and our expanded set of covariates.

Table 10
Descriptive Statistics of Study Variables

Variables	***M***	***SD***	**Observed Range**	**# items**	***N***	**α**
1. Relationship satisfaction (Standardized)	.00	(.87)	-2.89 to .91	9	691	.96
2. Perceived Stress	2.76	(.68)	1.00 to 4.64	11	671	.83
3. Time-saving Purchases (%)	42.7%	(.50)	0.00 to 100.00	1	667	-
4. Time-saving Purchase (Amount Spent)	\$21-\$40[1]	(3.34)	1.00 to 16.00	1	667	-
5. Time-saving Purchase (Time Saved)	18.01	(14.92)	1.00 to 50.00	1	285	-
6. Material Purchase (%)	75.9%	(.49)	0.00 to 100.00	1	661	-
7. Material Purchase (Amount Spent)	\$61-\$80	(3.17)	1.00 to 16.00	1	661	-
8. Experiential Purchases (%)	44.8%	(.50)	0.00 to 100.00	1	661	-
9. Experiential Purchase (Amount Spent)	\$41-\$60	(3.84)	1.00 to 16.00	1	661	-
10. Time Saving - % Services	57.00	(31.12)	0.00 to 100.00	1	282	-
11. Time Saving - % Products	43.00	(31.12)	0.00 to 100.00	1	282	-
12. Time Saving - % Time Saved Within the Relationship	60.94	(28.56)	0.00 to 100.00	1	282	-
13. Time Saving - % Time Saved Outside the Relationship	39.06	(28.56)	0.00 to 100.00	1	282	-
14. Time Saving - % of Time That You Saved (Not Partner)	40.19	(28.95)	0.00 to 100.00	1	279	-
15. Time Saving - % of Time Your Partner Saved (Not You)	24.13	(20.61)	0.00 to 100.00	1	279	-
16. Time Saving - % of Time That You Both Saved	35.68	(31.79)	0.00 to 100.00	1	279	-
17. Time Saving - % of Purchases Your Partner Bought For You	32.80	(26.98)	0.00 to 100.00	1	279	-
18. Time Saving - % of Purchases You Bought For Your Partner	31.23	(28.79)	0.00 to 100.00	1	279	-
19. Time Saving - % of Purchases That You Bought For You	35.97	(28.52)	0.00 to 100.00	1	279	-
20. Time Saving – Made the Purchases Together	5.24	(1.73)	1.00 to 7.00	1	279	-
21. Time Saving –1) Utilitarian, 2) Hedonic 3) Both 4) Neither	Utilitarian: 56.6% Hedonic: 11.1% Both: 26.5% Neither: 5.7%.				279	-

[1] For this variable, people who reported they had not spent money on time-saving purchases were coded as spending \$0 for the time-saving purchase question.

Note. All the questions about time-saving purchase characteristics were only asked to respondents who reported making time-saving purchases. Items that were reported in percentages had to add to 100%.

Table 11

Correlation Matrix of Study 3 Purchase Characteristics (Without Covariates)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Relationship Satisfaction	1														
2. Time-saving purchase (Time Saved)	.16**	1													
3. Time-saving purchase (Amount Spent)	.06	.22***	1												
4. Purchases -- % Products vs. Services	.02	.003	.06	1											
5. Purchases -- % Within vs. Outside	.17**	-.14*	.03	-.08	1										
6. Time That You Saved (Not Partner)	-.11†	.04	.03	-.03	.01	1									
7. Time That Your Partner Saved (Not You)	-.05	.13*	.02	.002	-.13*	-.21***	1								
8. Time That You Both Saved	.13*	-.12*	-.04	.03	.07	-.77***	-.46***	1							
9. Purchases Your Partner Bought For You	.03	.13*	.001	-.11†	-.07	.11†	.23***	-.25***	1						
10. Purchases You Bought For You	-.08	-.08	-.002	.18**	.05	.38***	-.09	-.29***	-.46***	1					
11. Purchases You Bought For Your Partner	.05	-.04	.001	-.08	.02	-.48***	-.13*	.53***	-.48***	-.56***	1				
12. Purchases – % Together vs. Apart	.24***	.008	.02	-.07	.17**	-.26***	-.02	.25***	.04	-.28***	.24***	1			
13. Utilitarian (Dummy coded: 1 = *yes*)	-.02	-.04	.03	.14*	.13*	.06	-.12†	.02	-.14*	.06	.07	-.07	1		
14. Hedonic (Dummy coded: 1 = *yes*)	-.03	.002	-.09	-.08	-.06	-.007	.001	.006	.23***	-.16**	-.05	.06	-.40***	1	
15. Both (Dummy coded: 1 = *yes*)	.006	.01	.06	-.07	-.11	-.08	.10	.01	-.03	.08	-.06	.07	-.69***	-.21***	1

†$p \leq .10$, *$p \leq .05$; **$p \leq .01$; ***$p \leq .001$

Note. Utilitarian = Utilitarian (1), all other (0); Hedonic = Hedonic (1), all other (0); Both = Both (1), all other (0). The variables saved you time, saved your partner time, and saved both you and your partner time had to add up to 100%, accounting for the high correlations between these variables. Similarly, the variables pertaining to whether the time-saving purchases were bought by your partner for you, by you for your partner, and by you for you also had to add up to 100%, accounting for the high correlations between these variables. For parsimony, the variables "% Products vs. Services," "Within vs. Outside" and "% Together vs. Apart" were calculated as the difference score between the two relevant survey items measured for each construct pair.

Table 12 *Correlation Matrix of Purchase Characteristics (with Covariates)*

7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1														
-.46***	1													
.23***	-.25***	1												
-.09	-.29***	-.46***	1											
-.13*	.53***	-.48***	-.56***	1										
-.02	.25***	.04	-.28***	.24***	1									
-.12†	.02	-.14*	.06	.07	-.07	1								
.001	.006	.23***	-.16**	-.05	.06	-.40***	1							
.10	.01	-.03	.08	-.06	.07	-.69***	-.21***	1						
-.02	.01	.04	.04	-.08	-.04	-.02	.11†	-.04	1					
-.15*	-.09	-.11†	.19**	-.09	-.001	-.06	-.01	.03	-.11**	1				
.02	-.15*	.05	.07	-.12*	-.05	.04	.005	-.02	-.08*	.09*	1			
-.04	-.06	-.07	.15*	-.09	-.07	.20***	-.07	-.11†	.16***	.08	0.07†	1		
.20***	-.18**	-.02	-.007	.02	.006	-.02	.02	.07	-.08*	.04	.08*	.19***	1	
.14*	-.09	.02	.07	-.08	-.07	.01	-.02	.09	-.04	0.07†	.07†	.23***	.40***	1

Note: Gender = female (1), male (0); Utilitarian = Utilitarian (1), all other (0); Hedonic = Hedonic (1), all other (0); Both = Both (1), all other (0) Material = material purchase (1), no material purchase (0); Experiential = experiential purchase (1), no experiential purchases (0); Children = number of children living in the home; HH income = household income.
† p≤0.10, *p<0.05; **p<0.01; ***p<0.001. The variables saved you time, saved your partner time, and saved both you and your partner time had to add up to 100% accounting for the high correlations between variables. Likewise, the variables whether the purchases were bought by your partner for you, by you for your partner, and by you for you also add up to 100% accounting for the high correlations between variables. For parsimony, the variables " % Products vs. Services," " Within vs. Outside" and " % Together vs. Apart" were calculated as the difference score between the two relevant survey items measured for each construct pair.

Variables	1	2	3	4	5	6
1. Relationship Satisfaction	1					
2. Time-saving purchase (Time Saved)	.16**	1				
3. Time-saving purchase (Amount Spent)	.06	.22***	1			
4. Purchases -- % Products vs. Services	.02	.003	.06	1		
5. Purchases -- % Within vs. Outside Relationship	.17**	-.14*	.03	-.08	1	
6. Time That You Saved (Not Partner)	-.11†	.04	.03	-.03	.01	1
7. Time That Your Partner Saved (Not You)	-.05	.13*	.02	.002	-.13*	-.21***
8. Time That You Both Saved	.13*	-.12*	-.04	.03	.07	-.77***
9. Purchases Your Partner Bought For You	.03	.13*	.001	-.11†	-.07	.11†
10. Purchases You Bought For You	-.08	-.08	-.002	.18**	.05	.38***
11. Purchases You Bought For Your Partner	.05	-.04	.001	-.08	.02	-.48***
12. Purchases – % Together vs. Apart	.24***	.008	.02	-.07	.17**	-.26***
13. Utilitarian (Dummy coded: 1 = *yes*)	-.02	-.04	.03	.14*	.13*	.06
14. Hedonic (Dummy coded: Hedonic: 1 = *yes*)	-.03	.002	-.09	-.08	-.06	-.007
15. Both (Dummy coded: 1 = *yes*)	.006	.01	.06	-.07	-.11†	-.08
16. Age	.01	.02	.08	.01	-.02	-.001
17. Gender (Dummy coded: 1 = *female*)	-.04	-.22***	-.18**	.02	.05	.21***
18. Number of Children Living at Home	-.0005	.14*	.11†	.06	-.07	.15*
19. Annual HH income	0.04	-.04	.28***	.13*	.15*	.09
20. Experiential purchase (Amount Spent)	0.06	.38***	.52***	.17**	-.13*	.05
21. Material purchase (Amount Spent)	0.04	.30***	.48***	.18**	-.10†	-.005

Results

Relationship satisfaction. Consistent with H1, respondents who spent money on time-saving purchases together with their partner in the past week reported greater relationship satisfaction (M = 0.08, SD = 0.82) compared to those who did not (M = -0.06, SD = 0.90), $t(638.58) = 2.11$, $p = .035$, 95%CI [.01, .27], $d = .16$. These results held controlling for our expanded set of covariates: age, gender (dummy-coded: 1 = *female*), number of children living at home, annual household income, and amount of money spent jointly on experiential and material purchases in the past week, $\beta = .08$, $B = .14$, $SE = .07$, $t(638) = 2.02$, $p = .044$, 95%CI [.004, .29].

Moderating role of stress. Next, we examined whether time-saving purchases were more beneficial for respondents experiencing relatively higher levels of stress (H5). To test H5, we entered time-saving purchases (dummy coded: 1 = *yes*), a mean-centered stress measure, and a time-saving purchase by stress interaction into a regression to predict relationship satisfaction.

There was a significant interaction between time-saving purchases and stress to predict relationship satisfaction, $B = .25$, $SE = .09$, $t(663) = 2.73$, $p = .007$, 95%CI [.07, .44]. This interaction held controlling for age, gender (dummy-coded: 1 = *female*), the number of children living at home, annual household income, and amount spent jointly on material and experiential purchases in the past week, $B = .27$, $SE = .10$, $t(636) = 2.75$, $p = .006$, 95%CI [.08, .46].

We probed this interaction to examine whether the benefits of time-saving purchases became stronger at higher levels of stress. Consistent with this hypothesis, at low levels of stress (-1 *SD* below the mean), time-saving purchases were not significantly associated with relationship satisfaction, $B = .06$, $SE = .09$, $t(663) = .681$, $p = .496$, 95%CI [-.12, .24]. At average levels of stress, time-saving purchases were significantly associated with relationship satisfaction, $B = .23$, $SE = .06$, $t(663) = 3.74$, $p = .0002$, 95% CI [.11, .36]. At high levels of

stress (+1 *SD* above the mean), time-saving purchases were significantly associated with relationship satisfaction, $B = .40$, $SE = .09$, $t(663) = 4.68$, $p < .001$, 95%CI [.24, .57].

This pattern of results was consistent after including an expanded set of controls. With controls, at low levels of stress (-1 *SD* below the mean), time-saving purchases were not significantly associated with relationship satisfaction, $B = .05$, $SE = .09$, $t(636) = .485$, $p = .627$, 95%CI [-.14, .23]. At average stress levels, time-saving purchases were significantly associated with relationship satisfaction, $B = .22$, $SE = .07$, $t(636) = 3.40$, $p = .0007$, 95% CI [.09, .35]. At high stress levels (+1 *SD* above the mean), time-saving purchases were significantly associated with relationship satisfaction, $B = .40$, $SE = .09$, $t(636) = 4.42$, $p < .001$, 95%CI [.22, .58].

Time-saving purchase characteristics. We then conducted a two-stage analysis to understand which purchase characteristics significantly predicted relationship satisfaction. First, we tested each predictor independently to identify significant associations with relationship satisfaction. Next, we added significant predictors simultaneously into a regression model to determine which purchase characteristics were unique predictors of relationship satisfaction.

Tables 13a and 13b present the results of our initial analysis, without and with covariates. Four variables consistently emerged as independent predictors of relationship satisfaction across both models: hours saved, extent of time saved within versus outside of the relationship, extent to which purchases saved time for both partners, and extent of making these purchases together.

Tables 14a and 14b display the results of our comprehensive regression models, without and with covariates. Three variables consistently emerged as unique predictors of relationship satisfaction across both models: hours saved, extent of time saved within versus outside of the relationship, and extent of making these purchases together.

These results are consistent with H2 and H3 and highlight the importance of both the quantity of time saved and how couples allocate this additional time. These results suggest that the amount of time saved as well as the opportunity to spend this time together within the relationship are crucial factors that predict relationship satisfaction. Furthermore, the process of making these purchases together appears to significantly contribute to relationship satisfaction.

Table 13a

Each Predictor Entered Separately without Covariates to Predict Relationship Satisfaction

Predictors	***β***	***B (SE)***	***t-value***	***p-value***	***R^2***
1. In the past week, how much time did these purchases save you and your partner? (*hours*)	**.16**	**.009(.003)**	**2.71**	**.007**	**.03**
2. In the past week, how much money did you and your partner spend on time-saving purchases?	.06	.02(.02)	1.04	.298	.004
3. What % of these purchases saved time within (vs. outside) the relationship?	**.17**	**.002(.001)**	**2.81**	**.005**	**.03**
4. What % of these purchases were a product (vs. a service)?	.02	.0003(.001)	.33	.741	.0004
5. What % of this time saved YOU time and NOT your partner?	-.11	-.003(.002)	-1.78	.075	.01
6. What % of this time saved YOUR PARTNER time and not you?	-.05	-.002(.002)	-.88	.380	.003
7. What % of this time saved BOTH YOU and YOUR PARTNER time?	**.13**	**.003(.002)**	**2.20**	**.028**	**.02**
8. What % of these purchases were purchased by you for your own benefit?	-.08	-.002(.002)	-1.26	.209	.006
9. What % of these purchases were purchased by your partner for your benefit?	.03	.001(.002)	.45	.653	.001
10. What % of these purchases were purchased by you for your partner's benefit?	.05	.001(.002)	.82	.411	.002
11. My partner and I made time-saving purchases together (versus apart) in the past week.	**.24**	**.08(.02)**	**4.04**	**<.001**	**.06**
12. Were these purchases utilitarian? (Dummy coded: 1 = *Hedonic*)	-.03	-.08(.16)	-.51	.612	.001
13. Were these purchases hedonic? (Dummy coded: 1 = *Utilitarian*)	-.02	-.03(.10)	-.27	.790	.0003
14. Were these purchases both utilitarian or hedonic? (Dummy coded: 1 = *Both*)	.006	.01(.11)	.10	.920	.00004

Bolded items are significant at $p \leq .05$.

Note. This table represents the standardized betas, unstandardized beta coefficients and standard errors. The items listed under the column 'predictors' are abbreviated illustrations of the full questions that were presented to respondents. For the full survey items used in this and subsequent studies, please refer to the OSF page. For parsimony, the variables "% Products vs. Services" "Within vs. Outside" and "% Together vs. Apart" were calculated as the difference score between the two relevant survey items measured for each construct pair.

Table 13b

Each Predictor Entered Separately with Covariates to Predict Relationship Satisfaction

Predictors	***β***	***B (SE)***	***t-value***	***p-value***	***R^2***
1. In the past week, how much time did these purchases save you and your partner? (*hours*)	**.18**	**.01(.004)**	**2.74**	**.007**	**.05**
2. In the past week, how much money did you and your partner spend on time-saving purchases?	-.01	-.003(.02)	-.17	.864	.03
3. What % of these purchases were a product (versus a service)?	.002	.000(.054)	.03	.979	.03
4. What % of these purchases saved time within (vs. outside) the relationship?	**.16**	**.002(.001)**	**2.65**	**.008**	**.05**
5. What % of this time saved YOU time and NOT your partner?	-.12	-.003(.002)	-1.84	.066	.04
6. What % of this time saved YOUR PARTNER time and not you?	-.08	-.003(.003)	-1.28	.201	.03
7. What % of this time saved BOTH YOU and YOUR PARTNER time?	**.16**	**.004(.002)**	**2.50**	**.013**	**.05**
8. What % of these purchases were purchased by you for your own benefit?	-.07	-.002(.002)	-1.15	.249	.03
9. What % of these purchases were purchased by your partner for your benefit?	.02	.001(.002)	.34	.734	.03
10. What % of these purchases were purchased by you for your partner's benefit?	.05	.001(.002)	.81	.421	.03
11. My partner and I made time-saving purchases together in the past week.	**.24**	**.08(.02)**	**4.12**	**<.001**	**.09**
12. Were these purchases utilitarian? (Dummy coded: 1 = *Utilitarian*)	-.05	-.08(.10)	-.82	.411	.03
13. Were these purchases hedonic? (Dummy coded: 1 = *Hedonic*)	-.03	-.08(.16)	-.53	.599	.03
14. Were these purchases both utilitarian or hedonic? (Dummy coded: 1 = *Both*)	.04	.06(.11)	.56	.573	.03

Bolded items are significant at $p \leq .05$.

Note. This table represents the standardized betas, unstandardized beta coefficients and standard errors. The items listed under the column 'predictors' are abbreviated illustrations of the full questions that were presented to respondents. For the full survey items used in this and subsequent studies, please refer to the OSF page. For parsimony, the variables "% Products vs. Services" "Within vs. Outside" and "% Together vs. Apart" were calculated as the difference score between the two relevant survey items measured for each construct pair. Covariates were as follows: age, gender (dummy coded: 1 = *female*), the number of children living at home, annual household income, and amount spent on experiential and material purchases in the past week.

Table 14a

Each Significant Predictor from Table 13a Entered Simultaneously Without Covariates to Predict Relationship Satisfaction

Predictors	***β***	***B (SE)***	***t-value***	***p-value***	***95%CI***
1. In the past week, how much time did these purchases save you and your partner? (*hours*)	.20	.01(.003)	$t(274) = 3.45$	<.001***	[.005, .02]
2. What % of these purchases saved time within (vs. outside) the relationship?	.16	.002(.001)	$t(274) = 2.67$	.008**	[.001, .004]
3. My partner and I made time-saving purchases together (vs. apart) in the past week.	.18	.06(.02)	$t(274) = 3.10$	.002**	[.02, .10]
4. What % of this time saved BOTH YOU and YOUR PARTNER time?	.10	.003(.002)	$t(274) = 1.65$	.101†	[-.0005, .006]
		f-value	***p-value***	***R^2***	
		8.95	<.001	.12	

†$p \leq .10$, *$p \leq .05$; **$p \leq .01$; ***$p \leq .001$

Table 14b

Each Significant Predictor from Table 13b Entered Simultaneously with Covariates to Predict Relationship Satisfaction

Predictors	***β***	***B (SE)***	***t-value***	***p-value***	***95%CI***
1. In the past week, how much time did these purchases save you and your partner? (*hours*)	.20	.01(.004)	$t(264) = 3.05$	.002**	[.004, .02]
2. What % of these purchases saved time within (vs. outside) the relationship?	.13	.002(.001)	$t(264) = 2.18$	.030*	[.0002, .004]
3. My partner and I made time-saving purchases together (vs. apart) in the past week.	.19	.07(.02)	$t(264) = 3.15$	.002**	[.02, .11]
4. What % of this time saved BOTH YOU and YOUR PARTNER time?	.11	.003(.002)	$t(264) = 1.80$	.073†	[-.0003, .006]
5. Age	.02	.01(.05)	$t(264) = .28$	.779	[-.09, .12]
6. Gender (dummy coded: 1 = *female*)	-.03	-.04(.10)	$t(264) = -.41$	.685	[-.25, .16]
7. Annual Household Income	.13	.04(.02)	$t(264) = 2.08$	.038*	[.002, .07]
8. Number of children living at home	.04	.03(.04)	$t(264) = .71$	.478	[-.06, .12]
9. Experiential Purchases (Amount)	.04	.009(.02)	$t(264) = .58$	.560	[-.02, .04]
10. Material Purchases (Amount)	-.06	-.01(.02)	$t(264) = -.76$	.448	[-.05, .02]
	f-value	***p-value***		***R^2***	
	4.197	<.001		.14	

†$p \leq .10$, *$p \leq .05$; **$p \leq .01$; ***$p \leq .001$

Study 3 Discussion

Study 3 replicates and extends the results of Studies 1 and 2 in several critical ways. Replicating our previous results, members of dual-income couples who made time-saving purchases together in the past week reported greater relationship satisfaction, with stronger benefits for those experiencing higher levels of stress.

Supporting the Conversation of Resources (COR) model, three purchase characteristics emerged as significant predictors of relationship satisfaction: the number of hours saved, the extent to which couples made these purchases together, and the degree to which these purchases saved time within the relationship. These three factors remained significant in regression models that examined the independent contribution of each characteristic and in models that examined the unique contribution of each characteristic, even when controlling for a more comprehensive set of covariates. Notably, other purchase characteristics such as monetary cost, product versus service orientation, and utilitarian purpose did not consistently predict relationship satisfaction.

These findings support H2 and H3. Consistent with H2, the amount of time saved was an important predictor of relationship satisfaction. Consistent with H3, spending this influx of time together within the relationship was critical. These findings suggest that both the quantity of time saved as well as the quality of its use are essential for enhancing relationship satisfaction.

Indeed, our data shows that time saved within the relationship and making purchases together are unique and reliable predictors of the benefits of time-saving purchases. These results deepen our understanding of when time-saving purchases predict relationship satisfaction: when they provide couples with a substantial influx of shared temporal resources. Building on these findings, Studies 4a and 4b explicitly test whether time-saving purchases predict relationship satisfaction by facilitating quality time together. Study 5 explores the components of quality time

that matter for these results, examining whether time-saving purchases improve relationship satisfaction by altering time-use activities or changing perceptions of time spent together (H3).

Studies 4a and 4b

Studies 4a and 4b directly test the role of quality time in predicting the relationship benefits of time-saving purchases (H3). These experimental studies address a limitation of our earlier correlational research. While Studies 1 and 2 support the proposed direction between time-saving purchases and relationship satisfaction, it is possible that people in more satisfying relationships are simply more likely to make time-saving purchases to spend more time together.

To overcome this limitation, Studies 4a and 4b use an experimental design to test whether reflecting on past time-saving purchases made jointly with a romantic partner causally increases relationship satisfaction. Study 4a compares the effects of reflecting on a time-saving purchase versus a material purchase, controlling for the act of reflecting on a joint purchase decision (consistent with Whillans et al. 2017). Study 4b investigates whether the benefits of time-saving purchases depend on couples spending the resultant time on quality time together.

Both studies use recollection paradigms, which are well-validated and commonly used in consumption research. These paradigms facilitate tightly controlled, ecologically relevant tests of key hypotheses with robust sample sizes (Aknin et al. 2020; Aknin, Dunn & Whillans, 2022).[8]

Overview

Studies 4a and 4b use a well-validated recollection paradigm to examine the causal effect of time-saving purchases on relationship satisfaction, proxied by a measure of post-purchase

[8] To test whether the findings observed in Study 4a differed based on whether the recollection paradigm was implemented using a between or within-subjects design, we conducted a pre-registered within-subject experiment mirroring the design of Study 4a (i.e. comparing time-saving vs. material purchases). The findings of this pre-registered study were statistically equivalent with those of Study 4a. For brevity, the statistically equivalent results of this study are reported as S2 of the Web Appendix.

closeness (Chan & Mogilner, 2017; Van Boven & Gilovich, 2003). MTurk participants completed these experiments in exchange for $0.80 USD. Eligibility required being in a marriage or marriage-like relationship and working for pay at least 21-30 hours per week. To prevent cross-contamination, individuals could only participate in Study 4a or 4b, not both. The experimental procedure was as follows: Participants reported their overall relationship satisfaction, they were randomly assigned to an experimental condition (below), they completed measures of post-purchase relationship closeness, and they provided demographic information. e pre-registered Study 4a through OSF (https://osf.io/gudx6). Study 4b was not pre-registered.

Study 4a

Overview and demographic characteristics. We targeted and successfully recruited 600 participants to complete Study 4a. See Table 1 for participant characteristics.

Measures and Manipulations

Relationship satisfaction (T1). Participants reported their baseline levels of relationship satisfaction using the same four-item measure from Study 3 ($\alpha = .93$). Because of the high correlation between the 4-item and the 5-item measure used in Study 3, $r = 0.85$, $p < .001$, we used the shorter relationship satisfaction scale in all subsequent studies (Studies 4b-6).[9]

Condition assignment. After completing the four-item relationship satisfaction measure, participants were randomly assigned to the material or time-saving purchase condition.

In the *time-saving purchase condition*, participants were instructed to recall and describe a recent time-saving purchase they had made together with their romantic partner. They were asked to reflect on a shared purchase of approximately $40 that was made "with the primary intention of acquiring free time: a purchase that allowed you and your partner to have more free

[9] The pre-registration states that we used a 5-item measure of relationship satisfaction. This was a typographical error in the pre-registration. We used a 4-item measure. See OSF for study data.

time." This prompt was designed to closely parallel previously published research (Whillans et al. 2017) while introducing an important modification: the focus on a shared purchase that they had made together with their romantic partner. This decision mirrors the wording of the time-saving purchase question used in Study 3 to ensure consistency across studies.

In the *material-purchase condition*, participants were instructed to recall and describe a recent material purchase they had made together with their romantic partner. They were asked to reflect on a shared purchase of approximately $40 that was made "with the primary intention of acquiring a material good: a tangible object that is kept in one's possession." The wording of this prompt was nearly identical to published research (Van Boven & Gilovich, 2003) except for the focus on a purchase made together with their partner to mirror the wording from Study 3.

Relationship satisfaction (T2). After writing about a material or time-saving purchase, participants completed several post-purchase relationship satisfaction measures. Participants reported how much the purchase had affected the relationship with their romantic partner on a scale from -5 = *Weakened the Relationship Significantly* to +5 = *Strengthened the Relationship Significantly* (Chan & Mogilner, 2017). Participants reported whether the purchase made them feel close, connected, appreciative, grateful, and supported by their partner on a scale from 1 = *Strongly Disagree* to *7 = Strongly Agree* (Chan & Mogilner, 2017). We standardized and averaged responses to these six items to create a composite of post purchase relationship satisfaction ($\alpha = .93$).[10]

[10] Participants also rated whether these purchases helped them manage work-life demands on a scale from 1 = *Strongly Disagree* to 7 = *Strongly Agree*. We pre-registered using a standardized composite measure that incorporated all seven items, including this work-life balance item. However, because this item addresses a distinct concept from the other items, which focus more directly on post-purchase relationship satisfaction, we present the results in text that use the 6-item measure (excluding the work-life balance question). For transparency and completeness, results using the 7-item measure are provided in the Web Appendix. Key findings remain consistent regardless of whether the work-life balance item is included.

Quality time. Participants reported the extent to which the purchase "enabled my partner and I to spend more quality time together" from *1 = Strongly Disagree* to *7 = Strongly Agree*.

Manipulation check. As a manipulation check, participants reported how much time the purchases cost or saved (*-3 = Cost a lot of time overall* to *+3 = Saved a lot of time overall*).

Purchase differences. Purchases can differ on many characteristics, and as noted in our pre-registration, we included several measures assessing these differences to use as control variables. Purchases can differ in how ordinary or extraordinary they are (Sussman & Alter, 2012) and many people, especially younger individuals, derive greater happiness from extraordinary purchases (Bhattacharjee & Mogilner, 2014). We therefore measured the extent to which participants felt that the purchases "should be considered a one-time expense that is unlikely to re-occur" on a scale from *1 = Strongly Disagree* to *7 = Strongly Agree*. If buying time signals that your time is more valuable than other people's, time-saving purchases could be seen as higher in social status. Thus, we asked participants to report whether their purchases "were high in social status" on a scale from *1 = Strongly Disagree* to *7 = Strongly Agree*. Typical time-saving purchases such as hiring a housecleaner might be perceived as more practical and less fun than typical material purchases such as buying kitchen accessories. We therefore asked participants to report the extent to which the recalled purchases were "fun", "helpful," and represented "money well spent" from *1 = Strongly Disagree* to *7 = Strongly Agree.* We adapted these measures from published research (Sussman, Sharma, & Alter, 2015).

Demographics. Participants reported their age, how many children were currently living at home, annual household income, how many hours they worked per week, and their gender.

Study 4a Results

Manipulation check. As expected, participants who were randomly assigned to the time-saving purchase condition reported that these purchases saved them significantly more time (M = 1.73, SD = 1.27) compared to participants who were randomly assigned to the material purchase condition (M = .21, SD = 1.26), $t(625) = 15.06$, $p < .001$, 95%CI [1.32, 1.72], $d = 1.20$. See Table 15 for other differences between the material and time-saving purchase conditions.

Table 15
Between Condition Differences Between Purchases

	Material Purchase	***Time-saving Purchase***	***t-value***	***Cohen's d***
These purchases were:				
One-time expense	5.57 (2.65)	4.52 (2.66)	$t(625) = 4.94$, $p < .001$	.40
Better spent on something else	3.22 (2.08)	3.56 (2.27)	$t(612.62) = 1.96$, $p = .051$	.16
Money well-spent	7.37 (1.73)	7.11 (1.87)	$t(625) = 1.77$, $p = .077$	.14
Helpful	5.73 (1.15)	5.93 (0.96)	$t(615.16) = -2.31$, $p = .021$	.18
Fun	5.02 (1.55)	4.47 (1.68)	$t(613.98) = 4.28$, $p < .001$	.34
High in social status	3.31 (1.58)	3.49 (1.54)	$t(625) = -1.46$, $p = .146$	.12

Note. This table represents the mean and standard deviation (in parentheses). For the variables "better spent on something else," "helpful," and "fun" we use the Welch's correction to account for unequal variances, accounting for the smaller degrees of freedom for these results.

At baseline (T1), condition assignment did not significantly predict relationship satisfaction, indicating successful randomization. Participants in the time-saving condition reported slightly but not significantly lower levels of relationship satisfaction (M = 5.55, SD = 1.37) as compared to those in the material purchase condition (M = 5.71, SD = 1.23), $t(770)$ = 1.75, p = .081, 95%CI [-.02, .35], d = .13. These results suggest that the impact of time-saving purchases on post-purchase satisfaction is conservative. Participants who were randomly assigned to the time-saving condition were somewhat although not significantly less satisfied in their relationships at T1 as compared to those assigned to the material purchase condition.

In contrast to our pre-registered hypothesis, participants in the time-saving purchase condition did not report higher post-purchase relationship satisfaction (M = -0.03, SD = 0.85) compared the material purchase condition (M = 0.03, SD = 0.88), $t(626)$ = .898, p = .370, 95%CI [-.07, .20], d = .07. These results held controlling for baseline relationship satisfaction (p = .901) and when controlling for both T1 relationship satisfaction and purchase characteristics in the same model (p = .906). See Tables 16a and 16b for the full results.

Table 16a

Relationship Closeness Predicted by Each Condition and Relationship Satisfaction

Variables	***B (SE)***	***t-value***
Condition (dummy coded: 1 = *Time Saving Purchase*)	-0.008(.06)	$t(625) = -.13$, $p = .901$
T1 Relationship Satisfaction	.25(.03)	$t(625) = 10.03$, $p < .001$
f-value	***p-value***	R^2
50.72	<.001	.14

Table 16b

Relationship Closeness Predicted by Each Condition with Purchase Characteristics and Relationship Satisfaction

Variables	***B (SE)***	***t-value***
Condition (dummy coded: 1 = *Time Saving Purchase*)	.007(.06)	$t(618) = 0.12$, $p = .906$
T1 Relationship Satisfaction	.14(.02)	$t(618) = 6.17$, $p < .001$
One-time expense	-.02(.01)	$t(618) = 1.94$, $p = .053$
Better spent on something else	.03(.02)	$t(618) = 1.82$, $p = .069$
Money well-spent	.09(.02)	$t(618) = 3.83$, $p < .001$
Helpful	.12(.04)	$t(618) = 3.27$, $p = .001$
Fun	.16(.02)	$t(618) = 7.99$, $p < .001$
High in social status	.08(.02)	$t(618) = 3.81$, $p < .001$
f-value	***p-value***	R^2
40.09	<.001	.34

Quality time together. Our conceptual model and the results of Study 3 suggest that the benefits of time-saving purchases should be the most pronounced when facilitating quality time between partners. To test this, we conducted an exploratory indirect effect analysis of time-saving purchases on relationship satisfaction through self-reported quality time (H3).

The results strongly support this hypothesis. Participants who were randomly assigned to the time-saving purchase condition were more likely to report that the purchase allowed them to spend more quality time with their partner (M = 5.59, SD = 1.23) compared to those who were assigned to the material purchase condition (M = 5.10, SD = 1.44), $t(626) = 4.60$, $p < .001$, 95%CI [0.28, 0.70], $d = .37$. These results held controlling for T1 relationship satisfaction and for the purchase characteristics outlined in Table 15. Table 17a shows significant main effects of condition assignment and T1 relationship satisfaction on quality time spent between partners. Table 17b includes purchase characteristics, demonstrating that condition assignment remains a strong predictor of quality time, even after accounting for these additional variables.

Next, we ran an exploratory path model using the Process Macro in SPSS (Model 4) with 20,000 bootstrapped samples. Time-saving (versus material) purchases significantly predicted the amount of quality time that working adults reported spending together, $B = .49$, $SE = .11$, $t(626) = 4.60$, $p < .001$, 95% CI [.28, .70]. In turn, spending quality time together predicted higher levels of post-purchase relationship satisfaction, $B = .40$, $SE = .02$, $t(626) = 20.29$, $p < .001$, 95% CI [.36, .44]. The indirect effect of the analysis differed from zero, *Indirect Effect (IDE)* = .21, $SE = .05$, 95% CI [.12, .30]. These results held controlling for T1 relationship satisfaction, $IDE = .22$, $SE = .04$, 95% CI [.14, .30] and when we included both T1 relationship satisfaction and purchase characteristics in the model, $IDE = .18$, $SE = .03$, 95% CI [.11, .24].

Table 17a

Quality Time with Partner Predicted by Each Condition and Relationship Satisfaction

Variables	***B (SE)***	***t-value***
Condition (dummy coded: 1 = *Time Saving Purchases*)	.57(.10)	$t(625) = 5.68$, $p < .001$
T1 Relationship Satisfaction	.37(.04)	$t(625) = 9.46$, $p < .001$
f-value	***p-value***	R^2
56.83	<.001	.15

Table 17b

Quality Time with Partner Predicted by each Condition with Purchase Characteristics and Relationship Satisfaction

Variables	***B (SE)***	***t-value***
Condition (dummy coded: 1 = *Time Saving Purchases*)	.56(.10)	$t(618) = 5.64$, $p < .001$
T1 Relationship Satisfaction	.24(.04)	$t(618) = 6.21$, $p < .001$
One-time expense	-.06(.02)	$t(618) = -3.45$, $p < .001$
Better spent on something else	.07(.03)	$t(618) = 2.44$, $p = .015$
Money well-spent	.13(.04)	$t(618) = 3.49$, $p < .001$
Helpful	.12(.06)	$t(618) = 2.12$, $p = .035$
Fun	.19(.03)	$t(618) = 5.91$, $p < .001$
High in social status	.05(.03)	$t(618) = 1.41$, $p = .161$
f-value	***p-value***	R^2
28.33	<.001	.27

Study 4a Discussion

Study 4a used a well-established recollection paradigm to provide causal evidence that time-saving purchases, compared to material purchases, significantly increased the amount of quality time couples spent together. Increased quality time, in turn, improved post-purchase relationship satisfaction. Notably, these benefits persisted controlling for baseline relationship satisfaction and purchase characteristics including perceived status, enjoyment, and utility.

While we did not observe a direct effect of time-saving purchases on relationship satisfaction, these findings align with our conceptual model. The relationship benefits of time-saving purchases appear to be mediated by the facilitation of quality time together. Study 4b builds on these findings and provides a causal test of whether time-saving purchases predict relationship satisfaction when these purchases allow couples to spend more quality time together.

Study 4b

Overview

Study 4b investigated the effect of shared and non-shared time-saving purchases on relationship satisfaction. Participants reported their overall relationship satisfaction and were randomly assigned to a *shared* or *non-shared* time-saving purchase condition. Participants then completed the identical measures of post-purchase relationship satisfaction, purchase characteristics, and demographic questions from Study 4a.

Overview and demographic characteristics. We targeted 400 participants, and successfully recruited 401 participants. See Table 1 for the characteristics of this sample.

Measures and Manipulations

Relationship satisfaction (T1). Participants reported their overall relationship satisfaction using the identical four-item measure from Studies 3 and 4a ($\alpha = .92$).

Condition assignment. Participants were assigned to a *shared* or *non-shared* time-saving purchase condition. In the *shared time-saving purchase condition*, participants reflected on and wrote about the most recent time that they had spent approximately $40 on a time-saving purchase with their partner that "enabled you to spend quality time together." In the *non-shared* condition, participants wrote about the most recent time they had spent approximately $40 on a time-saving purchase with their partner where "you did not spend your extra time together."

Post-purchase relationship satisfaction (T2). After reflecting on and writing about their most recent time-saving purchase, participants reported how satisfied the purchase had made them feel with their partner using the identical six-item measure from Study 4a ($\alpha = .94$).[11]

Manipulation check. To verify the effectiveness of the manipulation, we again asked participants to report the extent to which the purchase helped them "spend more quality time with their partner" on a 1-item scale ranging from 1 = *Strongly Disagree* to 7 = *Strongly Agree*.

Study 4b Results

Manipulation check. Participants assigned to the shared time-saving purchase condition reported that these purchases increased quality time spent with their partner ($M = 6.10$, $SD = 1.01$) significantly more than participants assigned to the non-shared time-saving purchase condition ($M = 4.29$, $SD = 1.70$), $t(313.84) = 12.90$, $p < .001$, 95%CI [1.54, 2.09], $d = 1.30$.[12]

As detailed in Table 18, shared time-saving purchases were rated as more likely to be money well-spent, helpful, fun and higher in status compared to non-shared purchases. Shared time-saving purchases were also less likely to be viewed as better spent on something else.

[11] Participants also reported the extent the purchase helped them deal with the demands of work and life on a scale from 1 = *Strongly Disagree* to 7 = *Strongly Agree*. The results hold when we include this item as part of the post-purchase relationship closeness composite. See Web Appendix for these analyses.
[12] We report this analysis using a Welsch's *t*-test to account for unequal variances across condition, explaining the reduced degrees of freedom in this analysis as compared to other analyses reported here.

T1 relationship satisfaction. Suggesting that random assignment to condition was successful, participants who were assigned to the shared purchase condition did not report higher levels of baseline relationship satisfaction (M = 5.77, SD = 1.13) than participants assigned to the non-shared condition (M = 5.79, SD = 1.11), $t(516) = .24$, $p = .814$, 95%CI [-.17, .22], $d = .02$.

T2 relationship satisfaction. Consistent with the results of Study 4a and our conceptual model, participants who were randomly assigned to the shared time-saving condition reported significantly higher post-purchase relationship satisfaction (M = 0.30, SD = 0.68) as compared to participants in the non-shared time-saving condition (M = -0.31, SD = 0.93), $t(356.85) = 7.44$, $p < .001$, 95%CI [.45, .77], $d = .75$. These results held controlling for T1 satisfaction, $t(398) = 7.86$, $p < .001$ as well as for T1 relationship satisfaction and purchase characteristics, $t(392) = 5.48$, $p < .001$. See Tables 19a and 19b for the full reporting of these results.

Table 18
Differences between Purchases Reflected on in Each Condition

	Shared Time-saving Purchase	***Non-shared Time-saving Purchase***	***t-value***	***Cohen's d***
These purchases were:				
One-time expense	4.66 (2.69)	5.06 (2.58)	$t(399) = 1.51$, $p = .132$	.15
Better spent on something else	3.47 (2.27)	4.59 (2.56)	$t(388.75) = 4.62$, $p < .001$	.46
Money well-spent	7.58 (1.56)	6.52 (2.00)	$t(368.18) = -5.90$, $p < .001$	.59
Helpful	5.91 (0.95)	5.44 (1.26)	$t(363.23) = -4.15$, $p < .001$	.42
Fun	5.07 (1.53)	4.37 (1.61)	$t(399) = -4.44$, $p < .001$	.44
High in social status	4.09 (1.53)	3.76 (1.72)	$t(388.56) = 2.04$, $p = .042$	.20

Note. This table represents the mean and standard deviation (in parentheses). For the variables "better spent on something else," "money well-spent," "helpful" and "status" we used the Welch's correction to account for unequal variances across condition, accounting for the smaller degrees of freedom in these analyses.

Table 19a

Post Purchase Relationship Satisfaction Predicted by Condition and T1 Relationship Satisfaction

Variables	***B (SE)***	***t-value***
Condition (dummy coded: *1 = Shared*)	.61(.08)	$t(398) = 7.86$, $p < .001$
T1 Relationship Satisfaction	.21(.03)	$t(398) = 6.14$, $p < .001$
f-value	***p-value***	***R^2***
49.51	<.001	.20

Table 19b

Post Purchase Relationship Satisfaction Predicted by Condition, Purchase Characteristics, and T1 Satisfaction

Variables	***B (SE)***	***t-value***
Condition (dummy coded: *1 = Shared*)	.41(.07)	$t(392) = 5.48$, $p < .001$
T1 Relationship Satisfaction	.13(.03)	$t(392) = 4.28$, $p < .001$
One-time expense	.02(.01)	$t(392) = 1.18$, $p = .239$
Better spent on something else	-.02(.02)	$t(392) = 1.23$, $p = .221$
Money well-spent	.01(.03)	$t(392) = .50$, $p = .619$
Helpful	.03(.04)	$t(392) = .73$, $p = .467$
Fun	.20(.03)	$t(392) = 7.96$, $p < .001$
High in social status	.07(.02)	$t(392) = 2.81$, $p = .005$
f-value	*p-value*	*R^2*
30.48	<.001	.38

Discussion

Study 4b shows that shared time-saving purchases lead to higher relationship satisfaction compared to non-shared purchases, reinforcing the crucial role of quality time. Together, Studies 4a and 4b offer insight into how working adults can leverage time-saving purchases to improve their relationships. By investing in purchases that free up shared time, couples can mitigate some of the strain associated with busy work schedules and multiple competing demands.

Despite the strength of the experimental approach used in Study 4a and 4b, these studies relied on a narrow measure of quality time. Study 5 addresses this concern by exploring various conceptualizations of quality time. Study 5 therefore provides a more comprehensive framework for understanding how time-saving purchases predict improvements in relationship satisfaction.

Study 5

Overview

Study 5 examines both time use and the subjective experience of shared time.

Quality Time

Time Use. We measured time-use by asking respondents to report on passive leisure, active leisure, and necessities completed with their partner in the past week. This approach helps us to understand whether time-saving purchases are associated with relationship satisfaction by reducing time spent on stressful activities like chores or increasing time spent on positive activities like socializing (Dunn et al. 2020). We distinguish between active and passive leisure activities based on research showing active leisure (e.g. exercising, volunteering) can predict personal wellbeing more than passive leisure (e.g. resting, relaxing; Smeets et al. 2020).

Subjective Experience of Time. We measured the subjective experience of time spent together, focusing on both positive and negative experiences. For positive experiences, we

examined positive mood and perceived partner support based on research showing strong associations between these factors and concurrently measured relationship satisfaction (e.g. DeLongis, Folkman & Lazarus, 1988; DeLongis et al. 1992; Joel et al. 2020).

For negative experiences, we assessed negative mood, relationship conflict, and distraction. This choice was informed by research demonstrating that interventions such as meditation and savoring can increase personal wellbeing by reducing goal conflict and helping people feel more present and less distracted (Etkin et al. 2015; West, Mogilner, & DeVoe, 2021).

This comprehensive approach of studying quality time tests whether time-saving purchases predict relationship satisfaction by changing how couples spend their time together or altering how they feel about this shared time. Study 5 provides a nuanced understanding of how dual-income couples can best use an influx of time to enhance their relationship satisfaction.

Participants and Procedure

As part of a larger study (see OSF for full study measures), we targeted 600 respondents (n = 300 males and n = 300 females) through the survey company Qualtrics. We successfully recruited a total of 555 eligible respondents (52.1% female); 477 respondents completed our measures of interest. Eligible respondents were employed for pay and worked more than 30 hours per week, were married or in a marriage-like relationship, and lived together with a romantic partner who was also employed for pay more than 30 hours per week.

The 10-minute survey began with a brief relationship satisfaction measure, followed by questions about time spent on various activities with their partner, subjective experiences during shared time, and time-saving purchases. Respondents also provided demographic information.

Measures

Relationship Satisfaction. Respondents completed the identical four-item relationship satisfaction measure from Studies 3-4b in reference to the past week (Cleary et al., 1983).

Time-saving purchases. Respondents completed the identical time-saving purchase questions from Studies 2 and 3. 51% of respondents spent money on time-saving purchases together with their partner in the past week, which saved 12.57 hours (*SD* = 16.17) on average.

Time-Use. Respondents reported how many hours they had spent on active, passive, and necessary activities together with their partner in the past week. We created time-use composites based on well-cited time-use research (e.g., Kahneman et al. 2006; see also: Smeets et al. 2020).

Respondents reported the number of hours that they had spent going outdoors, praying or meditating, exercising, socializing, volunteering, and having intimate relations with their partners in the past week. We averaged responses to these items to form an "active leisure" composite measure (Smeets et al. 2020). Respondents reported the number of hours that they had spent doing nothing, resting, relaxing, and watching TV with their partner in the past week. We averaged responses to these items to form a "passive leisure" composite. Respondents reported the amount of time they had spent cooking, eating, doing laundry, cleaning, and taking care of their children or other household members with their partner in the past week. We combined responses to these items to form a time spent on "necessities" composite (Smeets et al. 2020).

Subjective Experience of Quality Time. To assess the subjective experience of shared time, we implemented four validated measures. Respondents reported on their experience of positive and negative mood when spending time with their partner in the past week on a widely used 12-item scale (Simpson, 1987). Respondents reported how much they had experienced six positive emotions (e.g., satisfied, loved, supported) and six negative emotions (e.g., sad, anger, depressed) when spending time with their partner in the past week on a scale ranging from 1 =

Very little/none to 7 = *A great deal*. We created separate composite measures for the positive and negative mood items (*PA*: α = .93; *NA*: α = .92). This decision was supported by previous research (Simpson, 1987) and an exploratory factor analysis showing the emergence of two distinct factors that explained 72.61% of the variance and had eigenvalues of ≥ 4.15.

Respondents reported how much they had supported their partner and how much their partner had supported them in the past week on four-items from a widely used measure of support: the Dyadic Coping Inventory (DCI; Gmelch et al., 2008). Respondents reported their agreement with two items from the "supportive dyadic coping" subscale of the DCI as follows: "Did your partner show empathy and understanding towards you" and "Did you show empathy and understanding to your partner" and two items from the "delegated dyadic coping" subscale of the DCI: "Did your partner take on tasks that you normally do to help you out" and "Did you take on things that your partner normally does in order to help you out." Respondents reported their agreement on a scale from 1 = *Very Rarely* to 5 = *Very Often*. We created an overall composite of perceived support given and received in the past week from these four items (α = .84). This decision was supported by an exploratory factor analysis showing the emergence of one distinct factor which explained 67.83% of the variance and had an eigenvalue of 2.71.

Respondents reported how distracted they felt when spending time with their partner in the past week using an adapted 5-item version of the Mindful Attention Awareness Scale (Brown & Ryan, 2003). Respondents agreed with items such as, "I was rushing through activities without really being attentive to them" ranging from *1 = Very little/none* to 7 = *A great deal* (α = .91).

Finally, respondents reported how much conflict they had experienced when spending time with their partner in the past week using four items from a validated relationship conflict scale: the negative interaction scale of the Network of Relationship Inventory (Furman &

Buhrmester, 2009). Respondents completed items such as "How often have you and your partner 'gotten on each other's nerves'" on a scale ranging from *1 = Never* to 7 = *All the time* (α = .94).

Control Variables. We measured respondents' overall positive and negative mood in the past week on the six item Schedule for Positive and Negative Affect (SPANE; Diener et al. 2009; *PA*: α = .86, *NA*: α = .94). Respondents completed demographic items i.e., age, gender (dummy-coded: 1 = *female*), annual household income, and number of children. We used these items as covariates. See Table 20 for the descriptive statistics of all survey items.

Tests of Discriminant Validity

To verify that our measure of relationship satisfaction could be distinguished from other potentially related constructs such as positive mood when spending time together and perceived partner support, we conducted tests of discriminant validity. These analyses are crucial for establishing the fact that these conceptually related constructs are measuring distinct aspects of relationship-oriented experiences. We implemented two complementary approaches: The Fornell-Larcker criterion and the Heterotrait-Monotrait (HTMT) ratio.

The Fornell-Larcker criterion test compares the square root of the average variance extracted (AVE) for each construct against its correlations with other constructs (Fornell & Larcker, 1981). This analysis revealed that for each construct pair, the square root of AVE exceeded the maximum squared correlation. These findings satisfy the Fornell-Larcker criterion and indicate discriminant validity for all comparisons. See Table 21a.

Complimenting this approach, we calculated HTMT ratios for each construct pair. These ratios, which measure the similarity between constructs, were all below the commonly used threshold of .85 and the more conservative threshold of .90 (Henseler et al., 2015). These results further support the distinctiveness of our measures. See Table 21b.

The results from both the Fornell-Larcker criterion and the HTMT ratios provide evidence for discriminant validity between these three potentially overlapping constructs. By demonstrating that relationship satisfaction, positive mood during shared time together, and perceived partner support are statistically distinct constructs, we can confidently proceed with our analyses knowing that we are capturing unique aspects of relationship-oriented experiences.

Table 20
Descriptive Statistics of Study Variables in Study 5

Variables	***M***	***SD***	**Observed Range**	**# items**	***N***	***alpha***
1. Relationship satisfaction	5.43	1.38	1.00-7.00	4	470	.92
2. Active Leisure (Hours)	14.79	14.32	0.00-50.00	6	469	-
3. Passive Leisure (Hours)	19.44	13.76	0.00-50.00	4	467	-
3. Necessities (Hours)	19.39	14.15	0.00-50.00	5	467	-
4. Positive Mood w/ Partner	5.00	1.41	1.00-7.00	3	470	.93
5. Negative Mood w/ Partner	3.49	1.64	1.00-7.00	3	470	.92
6. Distracted w/ Partner	3.86	1.67	1.00-7.00	5	470	.91
7. Partner Support	3.55	.87	1.00-5.00	5	470	.84
8. Relationship Conflict	3.53	1.96	1.00-7.00	4	470	.94
9. Positive Mood Overall	3.65	.83	1.00-5.00	3	470	.86
10. Negative Mood Overall	2.68	.95	1.00-5.00	3	470	.87
11. Time-saving Purchases (dummy coded: 1 = *yes*)	.51[1]	-	-	1	471	-
12. Time Saved (Hours)	12.57	16.17	0.00-50.00	1	471[2]	-

Note. [1]Time-saving purchases represents the percentage of respondents who reported making time-saving purchases together with their partner in the past week. [2]This item was only asked to respondents who reported making time-saving purchases. For respondents who reported that they did not make these purchases, their values were assigned a value of "0." This variable is therefore dummy coded: 1 = *yes*; 0 = *no*.

Table 21a
Discriminant Validity Checks

Construct 1	Construct 2	Ave of Construct 1	Ave of Construct 2	Squared Correlation	Alpha for Construct 2
Relationship Satisfaction	Partner Positive Mood	.61	.95	.40	.93
Relationship Satisfaction	Support	.61	.50	.43	.84
Partner Positive Mood	Support	.95	.50	.33	.93

Table 21b
HTMT Ratios for Each Construct Pair

Construct Pair	HTMT Ratios
Partner Positive Mood & Partner Support	.7064
Relationship Satisfaction & Partner Positive Mood	.6960
Relationship Satisfaction & Partner Support	.6861

Results

Relationship satisfaction. Consistent with H1, respondents who made time-saving purchases together with their romantic partner in the past week reported significantly higher levels of relationship satisfaction (M = 5.81, SD = 1.14) as compared to those who did not (M = 5.04, SD = 1.50), $t(427.77) = 6.19$, $p < .001$, 95%CI [.52, 1.01], $d = .58$. This result held controlling for age, gender (dummy-coded: 1 = *female*), number of children, and annual household income, $\beta = .24$, $B = .66$, $SE = .13$, $t(462) = 4.95$, $p < .001$, 95%CI [.40, .92].

Consistent with H2 and the results of Study 3, respondents who saved more hours through these time-saving purchases reported higher relationship satisfaction, $\beta = .29$, $B = .03$, $SE = .004$, $t(468) = 6.65$, $p < .001$, 95%CI [.02, .03]. These results held controlling for the covariates listed above, $\beta = .26$, $B = .02$, $SE = .004$, $t(462) = 5.19$, $p < .001$, 95%CI [.01, .03]. When the dichotomous time-saving purchase variable and the hours saved variable were both entered in a regression model to predict relationship satisfaction, the dichotomous measure was no longer significant ($p = .066$). Given the superior predictive power of the hours saved variable, we adopted it as our primary predictor in all subsequent analyses. The models reported below maintained statistical significance when using the dichotomous measure, underscoring the robustness of our results to various operationalizations and model specifications.

Mediating role of quality time. While Studies 4a and 4b provide evidence that quality time is an important predictor of relationship satisfaction, Study 5 was designed to test which specific features of quality time matter for relationship satisfaction. Our analysis focused on whether the positive effects of time-saving purchases were explained by changes in how members of dual-income couples spent their time together, their subjective experiences during time spent together, or both. To address this question, we used a two-pronged analytic approach.

First, we tested each quality time variable individually as a potential mediator. Second, we conducted a simultaneous mediation analysis to identify the unique contributions of each significant variable. Both analyses were performed with and without covariates i.e., age, gender (dummy-coded: 1 = *female*), number of children, and annual household income. See Table 22 for the correlations between all variables.

In Table 23, we report our first set of regression models where each quality time variable was entered separately as a mediator between time-saving purchases and relationship satisfaction without and with covariates. We tested these models using SPSS Process Model 4 with 20,000 bootstrapped samples. In models without and with covariates, six variables significantly mediated the association between time-saving purchases and relationship satisfaction: positive mood, negative mood, positive mood when spending time together with one's romantic partner, negative mood when spending time together with one's romantic partner, perceived partner support when spending time with one's romantic partner, and relationship conflict.

In Tables 24a and 24b, we report our second set of regression models where each significant quality time variable from Table 23 was entered simultaneously as a mediator between time-saving purchases and relationship satisfaction. In the simultaneous mediation model, the inclusion of these six variables substantially reduced the direct of effect of time saved on relationship satisfaction from $B = .02$, $SE = .003$, $p < .001$ to $B = .001$, $SE = .004$, $p = .757$. Bootstrap mediation with 20,000 simulations confirmed that the indirect effect differed from zero, $IDE = .02$, $SE = .004$, 95%CI [.02, .03]. Notably, only positive mood and perceived support during shared time emerged as unique mediators in this comprehensive model, with the confidence intervals for the other variables including 0. These results held controlling for age, gender (dummy coded: 1 = *female*), number of children, and annual household income.

These findings suggest that the benefits of time-saving purchases are primarily mediated through improvements in subjective experiences during shared time, particularly increased positive mood and perceived partner support, rather than through changes in time use patterns.

Table 22

Correlations among Key Study Variables

Variables	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1. Relationship Satisfaction	1											
2. Active Leisure	.25***	1										
3. Passive Leisure	.24***	.82***	1									
4. Necessities	.21***	.86***	.85***	1								
5. Positive Mood w/ Partner	.71***	.39***	.33***	.32***	1							
6. Negative Mood w/ Partner	-.09*	.38***	.31***	.31***	-.03	1						
7. Partner Support	.69***	.41***	.36***	.37***	.70***	0.06	1					
8. Distracted w/ Partner	.08†	.46***	.35***	.36***	.22***	.67***	.22***	1				
9. Relationship Conflict	-.02	.52***	.40***	.44***	0.07	.59***	.11*	.66***	1			
10. Positive Mood Overall	.35***	.23***	.14**	.19***	.45***	-.13**	.38***	.01	.06	1		
11. Negative Mood Overall	-.14**	.08	.08†	0.04	-.08	.50***	-.04	.37***	.23***	-.26***	1	
12. Time-saving (Hours)	.29***	.75***	.62***	.65***	.40***	.38***	.47***	.43***	.52***	.22***	.13**	1

†$p \leq .10$, *$p \leq .05$; **$p \leq .01$; ***$p \leq .001$

Table 23

Indirect Effect of Hours Saved Predicting Relationship Satisfaction by Time Use Characteristics When Entered Separately

Time Variables	***B (SE)***	***t-value***	***p-value***	***95%CI***	***IDE (SE), 95%CI of Model***
Active Leisure	.007(.007)	1.05	.293	[-.006, .02]	.005(.004), 95%CI [-.004, .01]
Indirect Effects w/covariates	.006(.006)	.97	.332	[-.007, .02]	.004(.004), 95%CI [-.004, .01]
Indirect Effects w/covariates + Personal PA and NA	.002(.006)	.38	.704	[-.01, .01]	.002(.004), 95%CI [-.007, .01]
Passive Leisure	.009(.006)	1.56	.120	[-.002, .02]	.005(.003), 95%CI [-.002, .01]
Indirect Effects w/covariates	.009(.006)	1.48	.139	[-.003, .02]	.004(.003), 95%CI [-.002, .01]
Indirect Effects w/covariates + Personal PA and NA	.008(.005)	1.51	.133	[-.003, .02]	.004(.003), 95%CI [-.002, .01]
Necessities	.003(.006)	.56	.574	[-.008, .01]	.002(.004), 95%CI [-.005, .009]
Indirect Effects w/covariates	.004(.006)	.61	.540	[-.008, .01]	.002(.004), 95%CI [-.005, .01]
Indirect Effects w/covariates + Personal PA and NA	.0001(.005)	.02	.986	[-.01, .01]	.0001(.004), 95%CI [-.007, .007]
Positive Mood When Together	.69(.04)	19.63	<.001***	[.62, .76]	.02(.004), 95%CI [.02, .03]
Indirect Effects w/covariates	.69(.04)	19.55	<.001***	[.62, .76]	.02(.004), 95%CI [.02, .03]
Indirect Effects w/covariates + Personal PA and NA	.67(.04)	17.52	<.001***	[.59, .74]	.02(.004), 95%CI [.01, .03]
Negative Mood When Together	-.20(.04)	-5.16	<.001***	[-.28, -.13]	-.008(.002), 95%CI [-.01, -.004]
Indirect Effects w/covariates	-.22(.04)	-5.43	<.001***	[-.29, -.14]	-.007(.002), 95%CI [-.01, -.004]
Indirect Effects w/covariates + Personal PA and NA	-.15(.04)	-3.37	.008**	[-.24, -.06]	-.005(.002), 95%CI [-.008, -.002]
Support When Together	1.13(.06)	18.65	<.001***	[1.01, 1.25]	-.03(.003), 95%CI [.02, .03]
Indirect Effects w/covariates	1.13(.06)	18.52	<.001***	[1.01, 1.25]	.03 (.003), 95%CI [.02, .03]
Indirect Effects w/covariates + Personal PA and NA	1.07(.06)	16.82	<.001***	[.95, 1.20]	.02 (.003), 95%CI [.02, .03]
Distracted When Together	-.05(.04)	-1.16	.248	[-.13, .03]	-.002(.002), 95%CI [-.006,.002]
Indirect Effects w/covariates	-.05(.04)	-1.31	.189	[-.14, .03]	-.002(.002), 95%CI [.005, .001]
Indirect Effects w/covariates + Personal PA and NA	.002(.04)	.055	.956	[-.08, .08]	.0001(.002), 95%CI [-.003, .003]
Conflict When Together	-.16(.04)	-4.56	<.001***	[-.23, -.09]	-.01(.003), 95%CI [-.02, -.005]
Indirect Effects w/covariates	-.17(.04)	-4.67	<.001***	[-.24, -.10]	-.01(.003), 95%CI [-.02, -.005]
Indirect Effects w/covariates + Personal PA and NA	-.15(.04)	-4.12	<.001***	[-.22, -.08]	-.008(.003), 95%CI [-.01, -.004]
Positive Mood Overall	.49(.07)	6.86	<.001***	[.35, .63]	.006(.002), 95%CI [.003, .009]
Indirect Effects w/covariates	.49(.07)	6.81	<.001***	[.35, .63]	.005(.002), 95%CI [.002, .009]
Negative Mood Overall	-.26(.06)	-4.05	<.001***	[-.38, -.13]	-.002(.0009), 95%CI [-.004, -.003]
Indirect Effects w/covariates	-.26(.06)	-4.05	.0001***	[-.39, -.13]	-.002(.001), 95%CI [-.004, .0002]

†$p \leq .10$, *$p \leq .05$; **$p \leq .01$; ***$p \leq .001$

Note. In the first model with covariates, we control for age, gender (dummy coded: 1 = *female*), annual household income, and number of children. In the second model with covariates, we also control for personal positive and negative mood. Across all models, the independent variable is hours saved through time-saving purchases, the dependent variable is relationship satisfaction, and the indirect effect variables are the time use variable of interest (e.g., active leisure). The models were run in SPSS using the Process Macro (Model 4) with 20,000 bootstrapped samples.

Table 24a

Indirect Effect Models without Covariates. Bolded items are significant at $p \leq 0.05$

Time Variables	***B (SE)***	***t-value***	***p-value***	***95%CI***	***IDE(SE), 95%CI***
Personal Positive Mood	-.03(.06)	-.45	.656	[-.14, .09]	-.0003(.0008), [-.002, .001]
Personal Negative Mood	-.08(.06)	-1.51	.128	[-.18, .02]	-.0006(.0004), [-.002, .0002]
Positive Mood When Together with Partner	**.43(.04)**	**9.84**	**<.001**	**[.34, .51]**	**.01(.003), [.01, .02]**
Negative Mood When Together with Partner	-.04(.04)	-1.09	.28	[-.11, .03]	-.002(.002), [-.005, .002]
Perceived Partner Support Received and Provided	**.65(.07)**	**9.18**	**<.001**	**[.51, .79]**	**.02(.002), [.01, .02]**
Relationship Conflict	-.03(.03)	-1.04	.301	[-.09, .03]	-.002(.003), [-.007, .003]
		Total Indirect Effect of the Model:			*IDE* = .03, *SE* = .004, 95%CI [.02, .03]

Note. We report the indirect effects of each variable when each variable was entered simultaneously without covariates. The models were run in SPSS using the Process Macro (Model 4) with 20,000 bootstrapped samples.

Table 24b

Indirect Effect Models with Covariates. Bolded items are significant at $p \leq 0.05$

Time Variables	***B (SE)***	***t-value***	***p-value***	***95%CI***	***IDE(SE), 95%CI***
Personal Positive Mood	-.02(.06)	-.39	.695	[-.14, .09]	-.002(.0007), [-.002, .001]
Personal Negative Mood	-.08(.05)	-1.48	.139	[-.18, .03]	-.005(.0004), [-.002, .0002]
Positive Mood When Together with Partner	**.42(.04)**	**9.75**	**<.001**	**[.34, .51]**	**.01(.003), [.009, .02]**
Negative Mood When Together with Partner	-.04(.04)	-.04	-1.24	[-.12, .03]	-.002(.002), [-.005, .002]
Perceived Partner Support Received and Provided	**.65(.07)**	**9.07**	**<.001**	**[.51, .79]**	**.02(.002), [.01, .02]**
Relationship Conflict	-.03(.03)	-1.07	.283	[-.09, .03]	-.002(.002), [-.007, .003]
		Total Indirect Effect of the Model:			*IDE* = .02, *SE* = .004, 95%CI [.02, .03]

Note. We report the indirect effects of each variable entered simultaneously with the following covariates: age, gender (dummy coded: 1 = *female*), number of children, annual household income. The models were run in SPSS using the Process Macro (Model 4) with 20,000 bootstrapped samples.

Study 5 Discussion

Study 5 replicates and extends our findings from Studies 3, 4a and 4b. Consistent with Study 3, members of dual-income couples who jointly made time-saving purchases in the past week and who saved more time through these purchases reported higher levels of relationship satisfaction. Study 5 provides additional evidence for H3, demonstrating that time-saving purchases predict relationship satisfaction by facilitating increased quality time between partners.

Our comprehensive approach to studying quality time in Study 5 included measures of objective time use and subjective perceptions of shared time. When analyzed individually, six variables emerged as significant mediators: personal and shared positive and negative mood, partner support, and relationship conflict. In our simultaneous mediation model, only increased positive mood and perceived support during shared time remained unique significant mediators.

These analyses consistently show that time-saving purchases predict relationship satisfaction by changing perceptions of time spent together rather than by changing time use.

To validate and extend these findings, we designed a final pre-registered study (Study 6) to test our full conceptual model. Study 6 examines whether time-saving purchases and the resultant time savings contribute to relationship satisfaction by helping partners more effectively navigate a common day-to-day stressful experience—the household chores—and in turn enable them to experience greater quality time together and enhanced relationship satisfaction (H4).

Study 6

Study 6 had two main objectives. First, we aimed to replicate our earlier findings showing that time-saving purchases enhance relationship satisfaction (H1, H2) through increased perceptions of quality time, specifically by improving perceptions of positive mood and perceived support during shared time (H3). Second, we explored our “gain spiral” hypothesis

(H4). This hypothesis proposes that the time gained from time-saving purchases could help couples to more effectively manage their daily stressors (i.e. household chores). To test this comprehensive model, we investigated whether time-saving purchases increased the frequency of chore-related discussions, signaling a more proactive approach to household management. We also tested whether time-saving purchases reduced ruminative discussions about the household chores. Finally, we tested whether these changes positively influenced perceptions of quality time and relationship satisfaction. We focused on household chores because they are a common source of conflict in domestic life. By examining all these factors together, our goal was to better understand the process by which time-saving purchases predict relationship satisfaction.

We also investigated whether the benefits of time-saving purchases were more pronounced for individuals experiencing higher levels of stress (H5), consistent with our stress-buffering hypothesis. Consistent with Studies 3 and 5, and the Conservation of Resources model, we used hours saved through time-saving purchases as our key predictor (H2). Results were statistically equivalent using a dichotomous measure. See the Web Appendix for these results.

We pre-registered our stopping rule, inclusion criteria, and analysis plan through the Open Science Framework (https://osf.io/fhv5g). A pilot study with an identical approach was conducted before conducting Study 6; the statistically equivalent results of this study are reported in S3 of the Web Appendix.

The design of this study provides comprehensive evidence for the associations between time-saving purchases, quality time, stress management, and relationship satisfaction.

Participants and Procedure

We recruited respondents from Qualtrics, a professional survey provider. Eligible participants were employed full-time and worked at least 30 hours per week, were in a marriage

or marriage-like relationship, and lived with a romantic partner who was employed full-time and worked at least 30 hours per week. As per our pre-registered stopping rule, we targeted 1,000 respondents and Qualtrics slightly over-recruited.

Based on effect sizes observed in our pilot study (average standardized effect $f^2 = 0.20$ for the mediation of positive mood and perceived support on relationship satisfaction), we pre-registered a target sample of 1,000 respondents. This sample size exceeds the minimum 620 respondents required for 95% power in a regression model with two mediators and six covariates. We recruited a larger sample to ensure adequate statistical power to detect potential interaction effects between variables (Blake & Gangestad, 2020).

The 10-minute survey included measures of relationship satisfaction and stress, replicating the approach used in Studies 2 and 3. Respondents reported on their subjective experiences of shared time, focusing on positive mood and support (identical to the approach used in Study 5). We introduced a new element by asking about time spent discussing and ruminating about the household chores during shared time. Respondents reported on the amount they had jointly spent on time-saving, experiential, and material purchases in the past week and completed the same demographic items from Study 5 (e.g. age, gender). Consistent with our pre-registration, we report our results with and without covariates. 42.5% of respondents spent money on time-saving purchases in the past week, saving an average of 7.31 hours ($SD = 12.38$).

Measures

In this study, we constructed a carefully selected set of measures to comprehensively assess the key constructs in our conceptual model. This approach allowed us to build on and extend our findings from previous studies while maintaining methodological consistency. See Tables 25a and 25b for the descriptive statistics and correlations between these measures.

Relationship Satisfaction. We used the same four-item scale from Studies 3-5, ensuring continuity in our assessment of this crucial outcome variable.

Quality Time. Respondents reported on their positive emotion and perceived support during shared time with their partner over the past week, using identical measures from Study 3.

Perceived Stress. Respondents completed the 11-item Perceived Stress Scale (PSS; Cohen et al. 1983) to understand stress levels over the past week.

Relationship Conflict. As an additional covariate, respondents reported on general relationship conflict with their partner over the past week using a validated 4-item measure from the Revised Dyadic Adjustment Scale (RDAS: Busby et al. 1995), with response options ranging from 1 = *Never* to *7 = All the Time* (E.g. "How often do you and your partner quarrel?")

Discussions about Household Chores. As a measure of proactive coping responses to the household chores, respondents reported how frequently they had discussed the household chores when spending time together in the past week using three items adapted from a validated measure (Cropley et al. 2006). Respondents reported the extent they had spent time discussing the household chores using a scale from 1 = *Not at all* to 7 = *All the Time* (E.g. "While spending time with my partner, we discussed household chores and tasks").

Rumination about Household Chores. Respondents reported on their rumination about the household chores and tasks when spending time with their partner in the past week. Rumination is characterized by recurrent, preoccupying, and negatively valanced thoughts or discussions about a common theme (Fresco et al. 2002; Smith and Alloy, 2009). Notably, ruminating about chores is a strong predictor of marital conflict (Cropley, Dijk & Stanley, 2006).

To test the role of time-saving purchases in reducing chore rumination for romantic partners, we adapted two items from the job strain and work rumination scale (Cropley et al.

2006): "Would you describe your discussion about chores and/or household tasks during the time that you were spending with your partner reoccurring" and "Would you describe your discussion about chores and/or household tasks during the time that you were spending with your partner repetitive" on a scale from 1 = *Not at all* to 7 = *All the Time*.

This rumination measure aligns with the Conservation of Resources (COR) model and allows us to explore how time-saving purchases might create a "gain spiral" by helping couples manage a common stressor more effectively. We focused on perceptions of chore-related interactions rather than time spent on chores, as our findings from Study 3 suggested that time-saving purchases primarily shape perceptions of shared time rather than actual time use.

We predicted that the temporal resources gained through joint time-saving purchases would facilitate more positive coping responses to recurring stressors, specifically household chores. We operationalized positive coping as an increase in productive chore discussions coupled with a decrease in chore-related rumination. We theorized that this improved coping should enhance the quality of shared time, in turn predicting greater relationship satisfaction.

Tests of Discriminant Validity

To establish the distinctiveness of our key constructs, we repeated the same discriminant validity tests from Study 5—the Fornell-Larcker test and the Heterotrait-Monotrait (HTMT) ratio analysis. The Fornell-Larcker test revealed that the square root of the Average Variance Extracted (AVE) exceeded the maximum squared correlation between constructs for all construct pairs. Thus, the Fornell-Larcker criterion was met for all comparisons (Fornell and Larcker, 1981). The HTMT ratio analysis corroborated these findings. The HTMT ratios for all construct pairs were below the commonly used threshold of 0.85 and the more conservative threshold of .90 (Henseler et al., 2015). Detailed results are presented in Tables 26a and 26b.

Both the Fornell-Larcker test and HTMT ratios demonstrated discriminant validity among relationship satisfaction, positive mood during shared time, and perceived partner support. These findings replicate Study 5 and support treating these measures as distinct constructs in our analyses. The consistency of these results across studies strengthens our confidence in the validity of our measures and the robustness of our conceptual model.

Table 25a
Descriptive Statistics of Study Variables

Variables	***M***	***SD***	**Observed Range**	**# items**	***N***	***alpha***
1. Relationship Satisfaction	5.62	1.43	1.00-7.00	4	1217	.92
2. Quality time – Positive Mood	5.29	1.48	1.00-7.00	6	1189	.94
3. Quality time – Perceived Support	3.70	.84	1.00-5.00	4	1180	.79
4. Perceived Stress	2.77	.63	1.00-4.64	11	1197	.78
5. Frequency of Chore Discussions	3.92	.1.66	1.00-7.00	3	1178	.89
6. Ruminative Chore Discussions	3.84	1.84	1.00-7.00	2	1172	.92
7. Relationship Conflict	1.00	7.00	1.00-7.00	4	1125	.91
8. Time-saving (dummy coded: 1 = *yes*)	.42[1]	-	-	1	1170	-
9. Time-saving (Hours)	7.31[2]	12.38	0.00-50.00	1	1170[2]	-
10. Material (dummy coded: 1 = *yes*)	.78	-	-	1	1164	-
11. Material (Amount)	3.90[3]	3.06	0.00-15.00	1	1164	-
12. Experiential (%)	.51	-	-	1	1166	-
13. Experiential (Amount)	3.27[3]	3.65	0.00-15.00	1	1166	-

Note. [1]These values represent the proportion of entries in which respondents reported making each purchase type (dummy coded: 1 = *yes*, 0 = *no*). [2]This item was only asked to respondents who reported making time saving purchases. For respondents who did not make these purchases, their responses were imputed as "0." [3]These categories correspond to $41-60.

Table 25b

Correlation Matrix among Key Study Variables

Variables	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
1. Relationship Satisfaction	1										
2. Positive Mood When Together	.79***	1									
3. Perceived Support When Together	.66***	.70***	1								
4. Perceived Stress	-.32***	-.34***	-.19***	1							
5. Frequency of Chore Discussions	.24***	.26***	.33***	.15**	1						
6. Ruminative Chore Discussions	-.10***	-.06*	-.02	.36***	.56***	1					
7. Relationship Conflict	-.36***	-.31***	-.21***	.46***	.23***	.40***	1				
8. Time-saving (dummy coded: 1 = *yes*)	.12***	.15***	.21***	.12***	.35***	.22***	.24***	1			
9. Time Saved (Hours)	.14***	.18***	.26***	.15***	.39***	.29***	.38***	.69***	1		
10. Material Purchases (Amount)	.03	.06*	.10**	.10**	.20***	.17**	.19***	.21***	.28***	1	
11. Experiential Purchases (Amount)	.08*	.14***	.16***	.08*	.28***	.19***	.21***	.30***	.40***	.41***	1

†$p \leq .10$, *$p \leq .05$; **$p \leq .01$; ***$p \leq .001$

Table 26a

Discriminant Validity Checks

Construct 1	Construct 2	Ave of Construct 1	Ave of Construct 2	Squared Correlation	Alpha for Construct 2
Partner Positive Mood	Relationship Satisfaction	.91	.74	.50	.93
Relationship Satisfaction	Partner Support	.74	.64	.43	.80
Partner Support	Partner Positive Mood	.64	.91	.53	.94

†$p \leq .10$, *$p \leq .05$; **$p \leq .01$; ***$p \leq .001$

Table 26b

HTMT Ratios for Each Construct Pair

Construct Pair	HTMT Ratios
Partner Positive Mood & Partner Support	.7230
Relationship Satisfaction & Partner Positive Mood	.7730
Relationship Satisfaction & Perceived Partner Support	.6579

Results

Relationship satisfaction. Following our pre-registered analysis plan, we tested whether the number of hours saved through time-saving purchases predicted relationship satisfaction (H2). Supporting this hypothesis, respondents who saved more hours through time-saving purchases in the past week reported greater relationship satisfaction, $\beta = .14$, $B = .02$, $SE = .003$, $t(1215) = 4.92$, $p < .001$, 95%CI [.01, .02]. These results held controlling for our pre-registered covariates: age, gender (dummy-coded: 1 = *female*), the number of children living at home, household income, and the amount of money spent on experiential and material purchases in the past week, $\beta = .13$, $B = .02$, $SE = .004$, $t(1118) = 3.87$, $p < .001$, 95%CI [.007, .02].

Quality Time Mediation. Following our pre-registration, we conducted a mediation analysis. We assessed whether hours saved through time-saving purchases predicted relationship satisfaction, and whether each of the critical quality time variables from Study 5 (i.e. positive mood and perceived partner support during shared time) mediated this result.

Following our pre-registration, we first conducted a mediation analysis using the Bootstrapping Macro (Model 4: Preacher & Hayes, 2008) with 20,000 bootstrapped samples. We assessed whether hours spent on time saving purchases in the past week predicted higher levels of relationship satisfaction and whether quality time mediated this result. We pre-registered positive mood as our mediator of interest. For transparency, we report the results of three models. In Model 1, we entered positive mood into a mediation model to predict the association between time-saving purchases and relationship satisfaction. In Model 2, we entered perceived partner support into a mediation model to predict the association between time saving purchases and relationship satisfaction. In Model 3, we entered both positive mood and perceived support simultaneously into a mediation model to predict the association between time-saving purchases

and relationship satisfaction. Lastly, we conducted all three models with our pre-registered covariates: age, gender (dummy coded: 1 = *female*), the number of children living at home, the amount spent jointly on experiential and material purchases, and annual household income.

Model 1: *Positive Mood*. We tested whether hours saved through time-saving purchases predicted relationship satisfaction through positive mood during shared time. Supporting this hypothesis, entering positive mood into the model significantly reduced the association between time-saving purchases and relationship satisfaction from $B = .02$, $SE = .003$, $p < .001$ to $B = -.0001$, $SE = .002$, $p = .947$. Bootstrap mediation with 20,000 simulations confirmed that the indirect effect differed from zero, $IDE = .02$, $SE = .002$, 95%CI [.01, .02]. This result held after including our pre-registered covariates: age, gender (dummy coded: 1 = *female*), the number of children living at home, the amount spent jointly on experiential and material purchases in the past week, and annual household income, $IDE = .02$, $SE = .003$, 95%CI [.008, .02].

Model 2: *Perceived Support*. We tested whether hours saved through time-saving purchases predicted relationship satisfaction through enhanced perceptions of partner support during shared time. Supporting this hypothesis, entering perceived support into the model reduced the association between time-saving purchases and relationship satisfaction from $B = 0.02$, $SE = .002$, $p < .001$ to $B = -.003$, $SE = .003$, $p = 0.208$. Bootstrap mediation with 20,000 simulations confirmed that the indirect effect differed from zero, $IDE = .02$, $SE = .002$, 95%CI [.015, .024]. This result held with covariates: $IDE = .02$, $SE = .003$, 95%CI [.01, .02].

Model 3: *Positive Mood & Perceived Support*. As pre-registered, we then entered both positive mood and perceived support simultaneously into a mediation model to explain the association between hours saved through time-saving purchases and relationship satisfaction.

Entering positive mood and perceived support into the model weakened the effect of hours saved on relationship satisfaction from B = .02, SE = .002, p < .001 to B = -.004, SE = .002, p = .092. Bootstrap mediation using 20,000 samples confirmed that this indirect effect differed from zero, IDE = .02, SE = .003, 95%CI [.015, .025]. This result held when we included our pre-registered covariates in the model, IDE = .02, SE = .003, 95%CI [.01, .02].

In this mediation model, positive mood was a stronger predictor of relationship satisfaction IDE = .014, SE = .002, 95%CI [.01, .02] than perceived support IDE = .006, SE = .001, 95%CI [.004, .009]. Following our pre-registration, we conducted a pair-wise comparison to test whether these indirect effects were different from one another. In this analysis, positive mood during shared time was a stronger mediator than perceived support both without IDE = .007, SE = .002, 95%CI [.003, .01] and with covariates IDE = .006, SE = .002, 95%CI [.002, .01]. These findings suggest that perceived support and positive mood during shared time help to explain the association between time-saving purchases and relationship satisfaction, and that positive mood during shared time may be a stronger predictor of this association.

Using Serial Mediation to Understand Quality Time. Next, we conducted a pre-registered serial mediation analyses to examine the association between time-saving purchases and relationship satisfaction with three mediators: frequent chore discussions, chore rumination, and positive mood during shared time. We ran these analyses with and without covariates using the PROCESS macro (Model 6; Preacher & Hayes, 2009) with 20,000 bootstrapped samples.

Our analysis focused on positive mood as the indicator of quality time, given its predictive strength. This approach aligned with our pre-registered analysis plan. For transparency, in the Web Appendix, we report the following results using perceived partner

support and a composite measure of positive mood and perceived partner support as mediators, noting that the pattern of results remained consistent across these different model specifications.

As specified in our pre-registration, we also conducted an exploratory analysis to test the robustness of our findings when we controlled for overall levels of relationship conflict. This control variable was included in our models because relationship conflict could potentially explain the increased frequency of chore-related discussions and chore-related rumination among those who made time-saving purchases. Controlling for relationship conflict does not significantly alter our results (See Web Appendix), supporting the robustness of our findings.

Our initial analysis revealed a significant total effect of hours saved through time-saving purchases on relationship satisfaction, $B = .02$, $SE = .003$, $p < .001$, 95%CI [.01, .02]. However, when we incorporated all three mediators into the model (frequent chore discussions, chore rumination, and positive mood during shared time), the direct effect became non-significant, $B = -.0003$, $SE = .002$, $p = .879$, 95%CI [-.005, .004]. This shift suggests that these mediators account for the association between time-saving purchases and relationship satisfaction.

Crucially, the total indirect effect in this model had confidence intervals that did not include zero. This result held both in the model without covariates ($IDE = .017$, $SE = .003$, 95%CI [.01, .02]) and in the model with our pre-registered covariates ($IDE = .02$, $SE = .003$, 95%CI [.008, .02]. These results provide strong evidence for the mediating role of our proposed variables in explaining the link between time-saving purchases and relationship satisfaction.

Our analysis revealed a series of significant relationships supporting our hypotheses. Individuals who saved more time through time-saving purchases engaged in more frequent discussions about household chores with their partners, $B = .05$, $SE = .004$, $p < .001$. This increased frequency of chore discussions was positively associated with relationship satisfaction,

B = .09, *SE* = .02, *p* < .001. These findings remained robust in models both with and without covariates (without covariates: *IDE* = .005, *SE* = .001, 95%CI [.003, .008]; with covariates: *B* = .004, *p* < .001, 95%CI [.002, .006]).

Moreover, frequent chore discussions predicted more positive mood during shared time, *B* = .34, *SE* = .03, *p* < .001, which in turn was associated with greater relationship satisfaction, *B* = .74, *SE* = .02, *p* < .001; *IDE* = .01, *SE* = .002, 95%CI [.01, 0.02]. These results remained consistent when including pre-registered covariates, *IDE* = .01, *SE* = .002, 95%CI [.007, .01].

To validate our proposed causal sequence, we compared our model to an alternative where the order of positive mood and the frequency of chore discussions was reversed. Our original model was more explanatory, as indicated by an indirect effect comparison with a confidence interval that did not cross zero, *IDE* = 0.01, *SE* = 0.018, 95%CI [.065, .01].

These findings support the "gain spiral" proposition of the Conservation of Resources model. These results suggest that time-saving purchases enable couples to more proactively manage chores, which enhances the quality of shared time and, ultimately, their relationship satisfaction. This sequential process illustrates how external resources (time-saving purchases) may catalyze a positive cycle of improved communication, mood, and relationship outcomes.

Contrary to our pre-registered hypothesis, while hours saved through time-saving purchases predicted more frequent chore discussions, *B* = .05, *SE* = .004, *p* < .001, these purchases also predicted increased rumination about chores during shared time, *B* = .01, *SE* = .004, *p* = .001. This increased rumination appeared to have negative consequences, predicting less positive mood during shared time, *B* = -.24, *SE* = .03, *p* < .001, and, subsequently, lower relationship satisfaction, *B* = -.09, *SE* = .02, *p* < .001; *IDE* = -.006, *SE* = .0008, 95% CI [-.007, -.004]. These effects persisted even when we controlled for our pre-registered variables, *IDE* = -

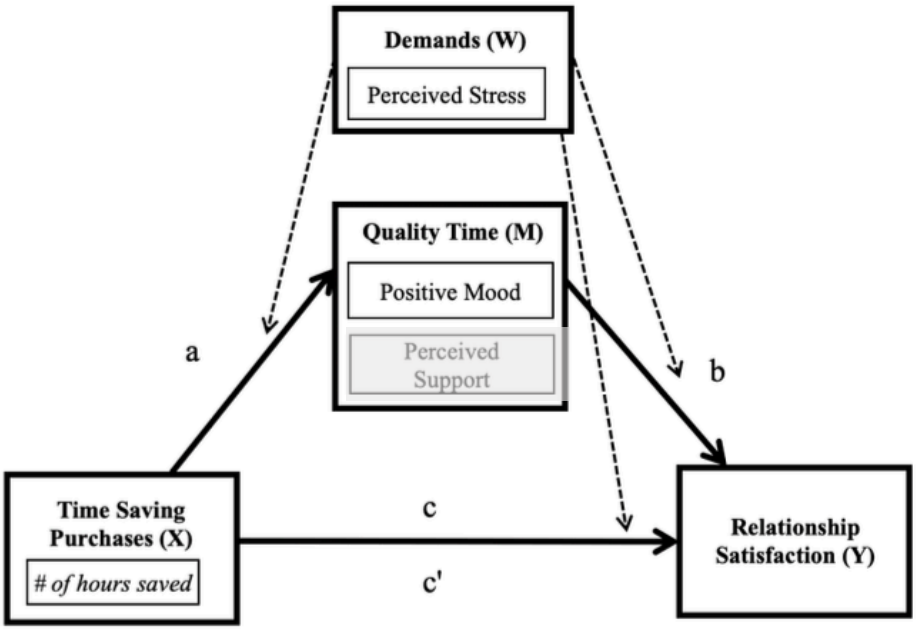
.004, *SE* = .007, 95%CI [-.006, -.003]. However, a critical finding emerged from our contrast analysis: The positive indirect effect of time-saving purchases on relationship satisfaction through enhanced positive mood outweighed the negative indirect effect through increased chore discussions and rumination, *Contrast: IDE* = .01, *SE* = .003, 95% CI [.008, .02]. This result held with controls: *IDE* = .01, *SE* = .003, 95%CI [.006, .02].

These findings provide partial support for our "gain-spiral" hypothesis while also revealing important complexities. Time-saving purchases do facilitate more frequent conversations about household chores, but these discussions can sometimes predict increased rumination, potentially negatively impacting relationship satisfaction. Crucially, however, the overall benefit of time-saving purchases for quality time and positive mood during shared time more than compensated for these potential negative effects, resulting in a net positive impact on relationship satisfaction.

This outcome contrasts with our pre-registered hypothesis, which anticipated uniformly positive effects of time-saving purchases through increased chore discussions and decreased rumination. Instead, our results paint a more realistic picture of relationship dynamics, where increased communication about household responsibilities can have both positive and negative consequences. Nonetheless, the overall impact of time-saving purchases on relationship satisfaction remained positive, highlighting the complex but ultimately beneficial role of these purchases in relationship management.

Moderated Mediation to Understand the Influence of Stress. As pre-registered, we then tested whether the indirect effect of the number of hours saved through time-saving purchases (*X*) on relationship satisfaction (*Y*) through greater quality time (*M*)—i.e. the c' path depicted in Figure 4—was conditional on respondents' self-reported levels of stress.

Figure 4
Conceptual model illustrating the moderated mediation results



Note. In Study 6, the path analyses and moderation analyses used positive mood as the key mediator of interest. Because of this, perceived support is greyed out in Figure 4 to promote clarity. All results hold whether we use perceived support or a composite measure of quality time. See Web Appendix for these results.

As predicted, this model yielded a moderated indirect effect (*c*') of time-saving purchases on relationship satisfaction through quality time and a moderated direct effect (*c*) between time-saving purchases and relationship satisfaction. In Model 7, the Index of Moderated Mediation did not cross zero, *IMM* = .02, *SE* = .003, 95%CI [.01, .03]. This index indicates that the strength of the indirect effect between time-saving purchases on relationship satisfaction through greater quality time (i.e. positive mood) was dependent on respondents' self-reported levels of stress.

We conducted pairwise contrasts to test whether these indirect effects were significantly different from one another. The pairwise comparison between the indirect effect of +1 *SD* above the mean of stress and the mean of stress differed from zero, *IDE* = .01, *SE* = .002, 95%CI [.006, .01] as did the pairwise comparison between +1 *SD* above the mean of stress and -1 *SD* below the mean of stress, *IDE* = .01, *SE* = .002, 95%CI [.006, .01]. These analyses support the interpretation that the mediation result of hours saved through time-saving purchases on relationship satisfaction through quality time was stronger at higher levels of stress.

We conducted follow-up analyses using Model 59 to better understand the nature of this conditional indirect effect. First, we tested whether stress moderated the "a" path between time-saving purchases and quality time. Second, we tested whether stress moderated the "b" path between quality time and relationship satisfaction. Finally, we tested whether stress moderated the "c" path (the direct effect) between time-saving purchases and relationship satisfaction.

In analyzing the "a" path, there was a significant interaction between time-saving purchases and perceived stress to predict quality time spent together in the past week, *B* = .02, *SE* = .005, $p < .001$, 95%CI [.01, .03]. At -1 *SD* below the mean of stress, the indirect effect of hours saved on relationship satisfaction through increased quality time (i.e. positive mood) did not cross zero, *IDE* = .01, *SE* = .005, 95%CI [.0008, .02], at the mean of stress the indirect effect did

not cross zero, *IDE* = .02, *SE* = .003, 95%CI [.02, .03], and at +1 *SD* above the mean of stress the indirect effect did not cross zero, *IDE* = .04, *SE* = .004, 95%CI [.03, .05].

In analyzing the "b" path, there was an interaction between quality time (i.e. positive mood) and perceived stress to predict relationship satisfaction, *B* = .07, *SE* = .03, *p* = .008, 95%CI [.02, .12]. At -1 *SD* below the mean of stress, the effect of quality time on relationship satisfaction was significant, *B* = .68, *SE* = .03, 95%CI [.63, .74], at the mean of stress the effect of quality time was significant, *B* = .73, *SE* = .02, 95%CI [.69, .77], and at +1 *SD* above the mean of stress, the effect was significant, *B* = .77, *SE* = .02, 95%CI [.73, .81]. These data suggest that positive mood during shared time had a stronger effect on relationship satisfaction under higher levels of stress. Perceived stress did not moderate the "c" path, *B* = .002, *SE* = .004, *p* = .949.

This pattern of results held when we added our pre-registered covariates to the model. Adding covariates to Model 7, the *IMM* index had a CI that did not cross zero, *IMM* = 0.02, *SE* = .003, 95%CI [.01, .02]. When we added covariates to Model 59, the "a" path indicated a significant interaction between hours saved and stress to predict quality time (positive mood), *B* = .02, *SE* = .006, *p* = .001, 95%CI [.01, .03], the "b" path indicated a significant interaction between quality time and stress to predict relationship satisfaction, *B* = .07, *SE* = .03, *p* = .009, 95%CI [.02, .13] and stress did not moderate the "c" path, *B* = .0.002, *SE* = .004, *p* = .654.

Thus, the mediation model that linked hours saved to relationship satisfaction through quality time (i.e. positive mood) was moderated by perceived stress. These results were driven by stress moderating the association between hours saved and perceptions of quality time (Path A) and the association between perceptions of quality time and relationship satisfaction (Path B).

Examining the "a" path, for people experiencing higher levels of self-reported stress, there was a stronger positive association between hours saved and quality time spent together.

Examining the "b" path, for people experiencing higher levels of stress, there was a stronger positive association between quality time spent together and relationship satisfaction. Time-saving purchases were more likely to predict quality time for more stressed respondents, and quality time was more important for relationship satisfaction as stress levels increased. The direct effect of hours saved on relationship satisfaction was not significant across any levels of stress, underscoring the importance of the mediated pathway through perceptions of quality time.

Although we did not pre-register these analyses, interested readers might wonder whether perceived stress moderated the association between time-saving purchases, the frequency of chore discussions, chore rumination, and relationship satisfaction. In an exploratory moderated mediation analysis, perceived stress moderated the association between hours saved and chore rumination both without, $B = .02$, $SE = .007$, $p = .003$ and with covariates, $B = .015$, $SE = .007$, $p = .027$. In follow-up analyses, the positive link between hours saved and chore rumination was stronger as perceived stress levels increased. For individuals who were experiencing lower levels of stress, the effect of time-saving purchases on chore rumination was smaller. As stress levels increased, time-saving purchases had a more pronounced effect on increased chore rumination.

Study 6 Discussion

Study 6 provided additional evidence for our conceptual model. Consistent with H1-H3, members of dual-income couples reported greater relationship satisfaction after making time-saving purchases together, particularly when these purchases saved more time. This increase in relationship satisfaction was mediated by enhanced perceptions of quality time together.

We found partial evidence in support of the "gain spiral" proposition of the COR model. First, we observed a significant indirect effect: People who received a larger influx of time through time-saving purchases spent more time discussing the chores when spending time

together with their partner, which predicted more positive mood when together and higher levels of relationship satisfaction. These findings help to explain why time-saving purchases predict perceptions of quality time: When members of dual-income couples receive an influx of time, they more effectively respond to daily stressors like chores. This proactive response, characterized by more frequent conversations about household chores, in turn predicted more positive perceptions of quality time together and greater relationship satisfaction. These results align with the COR model: time-saving purchases provide couples with a direct way to manage shared demands. This influx of time enables more effective coping strategies (e.g. proactive chore discussions) and fosters positively valanced time together and relationship satisfaction.

However, contrary to our full pre-registered model, we did not observe a negative association between time-saving purchases and chore rumination. Instead, we found an indirect effect: individuals who made time-saving purchases discussed chores more frequently when spending time together, which predicted increased rumination about the chores and lower relationship satisfaction. For members of dual-income households, more frequent chore-related discussions predicted more rumination, potentially reducing the positive effects of time-saving purchases on satisfaction. These results were somewhat attenuated—though not significantly—when controlling for relationship conflict, suggesting that the negative influence of chore discussions on rumination was partly driven by respondents in higher-conflict relationships.

These results reveal a complex relationship between time-saving purchases, chore discussions, chore rumination, and relationship satisfaction. Time-saving purchases can facilitate positive mood during shared time and encourage relationship satisfaction—when these purchases enable constructive conversations about the household chores. However, when these purchases prompt chore conversations that produce rumination, these purchases have the potential to

undermine—as opposed to improve—relationship satisfaction. Despite the negative indirect effect we observed, it is important to note that the quality time benefits of time-saving purchases outweighed the negative indirect effect of chore rumination on relationship satisfaction.

Crucially, these findings highlight the importance of perceived quality time in realizing the benefits of time-saving purchases. Even when time-saving purchases resulted in chore-related rumination during shared time, the positive effects of quality time outweighed these negative experiences. Our results suggest that for couples who make time-saving purchases—even if these purchases prompt more chore-related discussions and rumination—engaging in quality time together that generates positive mood can counteract these negative experiences and ultimately enhance relationship satisfaction.

Consistent with our stress buffering hypothesis (H5), we also observed a significant moderated-mediation: the benefits of time saved were more pronounced for members of dual-income couples experiencing higher levels of stress. For these respondents, the link between hours saved through time-saving purchases and perceptions of quality time spent together was stronger, as was the link between quality time spent together and overall relationship satisfaction. These findings help to explain why the mediation effect between time-saving purchases was more robust for respondents reporting average or above average levels of stress.

We also observed a moderating effect of stress on chore rumination: When individuals reported higher levels of stress and made time-saving purchases, they reported ruminating more about the household chores when spending time with their partner. These results present open areas for future research, which we will return to in more detail in the General Discussion.

We focused on household chores due to their ubiquitous nature and the direct impact that time-saving purchases can have on these tasks. This decision builds on the results of Study 3,

which demonstrated that time-saving purchases are more effective when they save time within the relationship rather than outside of it. Future research should explore how time-saving purchases help couples cope with other demands like childcare or work-related stress.

Additional research should expand the breadth of the measures used to study chore rumination. In Study 6, we used a validated measure of chore rumination that did not explicitly ask respondents whether they experienced ruminating about the household chores as a positive or negative experience. This approach leaves open the possibility that some study respondents might have interpreted recurring chore discussions positively. This ambiguity creates a conservative test of our hypotheses, as positive interpretations would run counter to the overall patterns we observed, potentially weakening our reported findings. Future studies should build on these results by incorporating measures that more directly assess people's negative feelings about repetitive discussions and their perceptions of coping strategies related to household tasks.

Similarly, additional research should expand the breadth of the measures used to study proactive chore discussions. In Study 6, we used a validated measure of chore discussions that did not explicitly ask respondents whether they experienced the chore discussions as a positive coping response. This approach leaves open the possibility that some study respondents might have interpreted recurring chore discussions negatively. Once again, this ambiguity creates a conservative test of our hypotheses, as negative interpretations would run counter to the overall patterns we observed where chore discussions predicted greater positive mood during shared time. Future studies should therefore build on these findings by incorporating measures that more directly assess people's feelings about frequent chore discussions during shared time together.

It is important to note that Study 6 was correlational in nature. While our path model supports the proposed causal direction, the possibility of reverse causality remains a concern. For

example, individuals who talk more about the chores might be more inclined to purchase time-saving services. To address this limitation, future research should use experimental designs and longitudinal panel data. These approaches would allow for a more robust exploration of the associations between time-saving purchases, positive coping strategies for daily stressors, the experience of enjoyable time together, and relationship satisfaction. Such methodologies would provide stronger evidence for the causal relationships proposed in our conceptual model.

General Discussion

Seven studies involving nearly 40,000 respondents in romantic relationships provide reliable evidence that time-saving purchases predict relationship satisfaction. Consistent with our conceptual model, time-saving purchases consistently predict relationship satisfaction when these purchases provide a greater influx of time. Time-saving purchases predict greater relationship satisfaction through an increased association with quality time spent together. These quality time benefits are supported by more frequent conversations about the household chores. However, members of romantic couples should be mindful to spend this influx of time in ways that enhance quality time. When time-saving purchases do not result in perceived quality time together, they do not predict greater relationship satisfaction. Furthermore, discussions about time-saving purchases can predict chore rumination, which may detract as opposed to enhance relationship satisfaction—unless couples spend quality time together. Collectively, these results underscore the importance of quality time for the benefits of time-saving purchases.

Our research also reveals that perceptions of time spent together are more reliable predictors of relationship satisfaction than the specific activities that couples report engaging in together. This finding highlights the subjective nature of quality time, suggesting that the emotional experience of shared time could matter more for relationship satisfaction than the

specific activities that couples engage in together. In doing so, this research underscores the importance of understanding how partners subjectively experience their time together, rather than focusing solely on objective measures of shared activities.

Advancing the Conservation of Resources Model

Our findings extend the Conservation of Resources (COR) model of stress. We demonstrate that time-saving purchases allow members of dual-income couples to adopt more proactive coping strategies to common stressors, particularly the household chores. This proactive approach facilitates quality time together and predicts greater relationship satisfaction.

Importantly, our research applies the COR model in novel ways. While previous studies have focused on the benefits of externally provided temporal resources such as employer-sponsored vacation days, we highlight the role of self-generated temporal resources. We show that working adults in committed romantic relationships can actively generate their own temporal resources through household purchases. This insight opens new avenues for understanding how people can leverage consumption behavior to enhance their romantic relationships.

By showing how time-saving purchases can predict more effective coping strategies and improved relationship outcomes, we provide a new perspective on how individuals can invest in and protect their temporal resources. Our approach expands the traditional understanding of resource acquisition in the COR model and suggests a more active role for individuals in managing their resources, particularly in the context of romantic relationships. Our work bridges past research on consumption patterns and relationship science, demonstrating how consumer behavior can serve as a tool for stress management and relationship enhancement.

Consumption Patterns and Relationship Satisfaction

Research on purchase decisions has primarily focused on individual happiness (Aknin et al. 2022; Matz, Gladstone & Stillwell, 2016). We extend this focus by showing that spending money to buy quality time can enhance relationship satisfaction. This finding contributes to a growing literature that examines how spending decisions shape wellbeing (Dunn, Whillans, Aknin & Norton, 2020).

Our research clarifies the mechanisms linking time-saving purchases to relationship satisfaction, addressing inconsistencies in previous studies. Some studies have suggested that time-saving purchases increase personal wellbeing by eliminating stressful experiences (Whillans & West, 2022). Other research proposes that time-saving purchases increase personal wellbeing by allowing people to spend more time on mood enhancing activities like socializing with friends and family members (Whillans et al. 2017). Our findings bridge these two possibilities. Our data proposes a two-step process: time-saving purchases can reduce the impact of negative daily stressors, which can then facilitate more positive experiences (greater quality time together). This process suggests that the benefits of these purchases stem not just from creating more free time, but from how that time is perceived within the relationship.

Time-saving purchases are particularly beneficial for couples experiencing high levels of stress. This finding extends research showing that spending decisions best predict happiness when they fit personality characteristics (Matz, Gladstone & Stillwell, 2016; Park, Ward, Naragon-Gainey, 2017). Moving beyond this research, our findings suggest that couples might also benefit from matching consumption to their current life circumstances and stressors.

Our findings underscore the need for a more nuanced approach to understanding time-saving purchases. Rather than assuming a universal benefit, researchers and practitioners should consider how factors such as stress levels and relationship dynamics might moderate the impact

of these purchases. This could lead to more targeted interventions and recommendations for couples seeking to enhance their relationship satisfaction through strategic resource allocation.

Protective Effects of Time Investments

Our findings on the stress-buffering effects of time-saving purchases contribute to the literature on relationship satisfaction. Prior research has largely focused on internal relationship dynamics, such as constructive communication patterns and forgiveness, as critical factors that predict relationship satisfaction (Christensen & Heavey, 1990; Cutrona & Suhr, 1992; Gordon & Chen, 2016; Heavey, Layne, & Christensen, 1993; Hilpert et al., 2016; O'Brien 2009; Overall, et al., 2009). Adding to this research, our studies demonstrate that people can seek out external resources to improve relationship resilience to stress.

The results from Study 6 are particularly noteworthy. We found that stress consistently moderated the association between time-saving purchases and quality time together, as well as the association between quality time and relationship satisfaction. These findings suggest that the benefits of time-saving purchases may be especially pronounced for individuals experiencing higher levels of stress, offering a novel perspective on stress management within relationships.

Importantly, our results revealed a complex pattern of stress moderation. While stress moderated the link between time-saving purchases and ruminative chore discussions, it did not moderate the frequency of chore-related discussions. This distinction suggests that stress may influence the quality and emotional impact of chore-related interactions more than their quantity.

Our research highlights the need for a more detailed exploration of how various types of stress—including work-related, financial, and health-related stressors—may differently influence the effects of time-saving purchases on relationship outcomes. This investigation could reveal important distinctions in the way couples benefit from such purchases under different stressful

circumstances. For example, financial stress due to job loss of one partner and resultant long work hours for the other could increase the negative impact of time-saving purchases on chore rumination. Couples may have no choice but to make time-saving purchases to allow one partner to interview for jobs, and the other partner to pick up more hours to cover bills; yet such couples may ruminate more about chores due to guilt over spending money to buy time. In contrast, work-related stress that does not coincide with financial concerns could lessen the negative impact of making time-saving purchases on chore rumination, potentially predicting a stronger association between time-saving purchases and relationship satisfaction as a result.

We also observed evidence that stress positively predicted time-saving purchases in Studies 1 and 3 ($r = 0.02$, $p < 0.001$ and $r = 0.16$, $p < 0.001$, respectively). These results suggest that some couples might strategically make time-saving purchases to protect themselves from daily stressors. Future research should explore the mechanisms predicting whether couples proactively seek out time-saving purchases to deal with various day-to-day responsibilities.

Redefining Quality Time: The Primacy of Perceptions

Our research, particularly Studies 3-6, reveals that the subjective experience of time spent together, rather than specific activities or amount of time saved, critically predicts relationship satisfaction. This insight contributes to research on quality time and relationship satisfaction, providing initial evidence that perceptions of time spent together, not just changes in time-use, contribute to greater relationship satisfaction for dual-income couples. These findings address calls to study activities that foster positive feelings between partners (e.g. Righetti et al. 2023). Our findings suggest that couples might benefit more from cultivating positive moods and supportive interactions than from planning elaborate activities (Johnson, Zabriskie & Hill, 2006).

Study 3 revealed that joint decision-making is important for realizing the benefits of time-saving purchases, highlighting a crucial aspect of couple dynamics: how partners coordinate resource allocation and the creation of discretionary time. This collaborative decision-making process may itself contribute to relationship satisfaction by fostering a sense of teamwork and shared goals. Our findings suggest that the benefits of time-saving purchases may extend beyond simply creating free time; they might also include the positive relational aspects of how couples navigate these decisions together. Future research should explore how the process of deciding on time-saving purchases contributes to relationship satisfaction, such as by facilitating open discussions about chore allocation and household resources (see Overall & McNulty, 2017).

Another promising area of future research is studying the intersection between experiential purchases, time-saving purchases, and relationship satisfaction. Time-saving purchases were unique predictors of relationship satisfaction across studies that measured both experiential and time-saving purchases. However, there may be additive benefits when couples make both types of purchases simultaneously.

Although not directly studied, dual-income couples engaging in novel activities such as visiting new landmarks or restaurants (Aron et al. 2000) might benefit more from these experiences after making time-saving purchases. Time-saving purchases could reduce rumination about household chores or other demands, allowing couples to more fully immerse themselves in the present moment or enjoy greater satisfaction from reminiscing about these experiences later (Kumar et al. 2024; Dunn & Weidman, 2015). These ideas align with research showing that people enjoy free time more when they experience less goal conflict between obligations and desired activities, and when they can be present in the moment (Etkin et al. 2015; West et al.

2021). Future research should explore how time-saving purchases enhance the anticipated, in-the-moment, and retrospective experience of various time-use activities for dual-income couples.

Practical Contributions: Leveraging Time-Saving for Relationship Satisfaction

Our findings offer practical advice for individuals, couples, and organizations seeking to maintain and enhance relationship satisfaction in the context of busy modern lifestyles. Across studies, only 48% of respondents who arguably could afford to make time-saving purchases made them regularly. These findings highlight a critical opportunity for intervention and education. This gap between the potential benefits of time-saving purchases and actual use suggests a need for targeted interventions to shift mindsets about the value of buying time. Relationship counselors could incorporate discussions about time-saving purchases into their practice, helping couples view these purchases as investments rather than mere conveniences.

Our research also suggests avenues for employee benefits and work-life balance initiatives. Employers could offer time-saving services as part of their total rewards packages. For example, providing vouchers for meal delivery or housecleaning services during demanding work periods could alleviate stress for employees and their romantic partners. This approach could address work-life balance issues and indirectly support employees' relationship satisfaction, potentially increasing job satisfaction and reducing turnover (Fassiotto et al. 2018).

Companies could extend this idea by offering time-saving vouchers that employees could gift to their partners during business trips or peak work seasons. This approach could demonstrate a company's commitment to employees' personal lives and provide a tangible means for employees to support relationships during stressful periods (Flynn & Leslie, 2023).

Our findings on quality time also provide practical advice. To experience quality time and relationship satisfaction, dual-income couples could focus deliberately on spending time

together in ways that promote positive mood and enhance perceptions of support (see also: Johnson, Zabriskie & Hill, 2006 for related arguments). These strategies could help couples leverage time-saving purchases to enhance their relationship satisfaction, potentially predicting greater relationship benefits from their shared experiences and improving overall wellbeing.

Exploring Demographic Variations in Time-Saving Benefits

While our primary analyses focused on the overall effects of time-saving purchases on relationship satisfaction, we also explored potential demographic variability in these benefits. Initial analyses across Studies 1-6 revealed no consistent interactions between gender, income, and the effects of time-saving purchases on relationship satisfaction. See Section 6 of the Web Appendix for the full presentation of these analyses. The absence of consistent demographic moderators aligns with cross-sectional research by Lok and Dunn (2022), which found no interactions between income or gender to predict the mood benefits of time-saving purchases.

However, given the well-documented disparity in household labor, where working women often bear a greater share of chore demands compared to their male counterparts (Giurge et al., 2021), we hypothesized that a more detailed examination of gender differences might reveal important insights. To investigate this possibility further, we conducted an additional exploratory study with 193 dual-income couples (see Web Appendix, Study S4 for the full presentation of these results). In this study, we were able to collect survey data from both partners simultaneously, allowing us to more deeply understand household dynamics.

This exploratory dyadic study revealed intriguing gender differences in the effects of time-saving purchases on relationship satisfaction. Women's time-saving purchases, whether made for themselves or their partners, predicted higher relationship satisfaction for both partners. This finding suggests a positive spillover effect: when women invest in time-saving purchases,

these purchases benefit their own and their partners' relationship satisfaction. In contrast, men's time-saving purchases showed a more limited influence. When men made time-saving purchases primarily to benefit their female partners, they reported higher levels of relationship satisfaction, but their partners did not report similar gains. The benefits of time-saving purchases were strongest when couples, particularly women, experienced higher levels of stress.

These findings indicate that women may benefit most from making time-saving purchases in their relationships, while men may derive satisfaction from providing time-saving support to their female partners, even if these purchases do not directly impact their partner's relationship satisfaction. This asymmetry points to potential differences in how men and women perceive and value these purchases within their relationships. These findings also underscore the potential of time-saving purchases to serve as an effective coping mechanism for couples facing time stress, potentially alleviating burdens and creating opportunities for quality time together.

Taken together, these findings highlight the fact that the interactions between gender, income, and time-saving purchases are nuanced and require further research to fully understand the conditions that moderate the benefits of buying time within romantic relationships.

Limitations and Future Directions

Our studies, including recall experiments and longitudinal evidence, provide compelling support for the relationship benefits of time-saving purchases. Despite the complementary strengths of our diverse methodological approaches, this investigation is not without limitations. Below, we discuss the importance of conducting additional research—including experimental studies, surveys with more nuanced chore measures, and studies using more diverse samples—to more fully understand the boundary conditions and mechanisms underlying these results.

Additional Causal Evidence. To strengthen our causal claims, future research should use behavioral experiments. Randomly assigning dual-income couples to receive funds for time-saving purchases would allow for the examination of real-world relationship benefits (building on Whillans & West, 2022; Whillans et al., 2017). This approach would reinforce our established causal relationships and show how couples implement time-saving solutions when given a new opportunity to do so. Such studies could reveal potential moderators and boundary conditions, including the frequency of use and pre-existing division of household labor.

Based on the results of Study 1, it is possible that only couples who already make time-saving purchases would benefit in these settings. These couples might avoid the additional burden of deciding what or how to outsource. This proposition dovetails with the results of Study 6, showing that chore rumination can undo some of the benefits of time-saving purchases. For couples who are experienced with making time-saving purchases, they may ruminate less about time-saving purchase decisions and derive greater satisfaction as a result. Additional behavioral research could explore this possibility. Combining time-saving interventions with longitudinal follow-ups and collecting detailed information about past experiences with time-saving purchases would provide a comprehensive understanding of the immediate and sustained effects on relationship dynamics and the factors – like experience – that moderate these benefits.

Expanded Measurement. Study 3 provided valuable insights by capturing a range of time-use activities (e.g., cooking and cleaning) and subjective quality time measures using gold-standard approaches (Smeets et al. 2020; Kahneman et al. 2006). Future research could combine these approaches to study how time-saving purchases shape couples' perceptions of specific daily stressful activities like chores and childcare. This type of longitudinal exploration would help to elucidate how time-saving purchases influence relationship satisfaction and quality time over

various time scales—from days to weeks, months, and years. Specifically, it could reveal how these purchases affect couples' subjective experiences of daily demands in the context of their ongoing relationship. For instance, do time-saving purchases predict sustained improvements in how couples perceive and manage their daily responsibilities? If so, how? Do these effects accumulate over time, or do couples adapt to the benefits, necessitating new strategies? By examining these questions over time, researchers could gain a more nuanced understanding of the long-term impact of time-saving purchases on relationship dynamics and satisfaction.

Longitudinal investigations would also uncover the cumulative impact of reducing daily stressors on overall relationship quality. This approach could illuminate whether benefits accumulate over time or if couples adapt, potentially requiring evolving strategies to maintain their satisfaction. To capture the full complexity of household dynamics, studies should also assess satisfaction with chore division, perceived fairness, and the emotional valence of chore-related discussions. These nuanced measures would provide a detailed overview of how time-saving purchases shape couple interactions around domestic labor and relationship satisfaction.

Diverse Samples. Our focus on US and UK respondents limits the generalizability of these results. Cross-cultural research is needed, particularly in countries with different work-life priorities (Macchia & Whillans, 2021). For instance, future studies should explore whether our results extend to countries like Italy, where people already prioritize leisure (Bellezza, Paharia & Keinan, 2017). Such cross-cultural investigations would reveal how cultural norms and values interact with the effects of time-saving purchases on relationship satisfaction, potentially uncovering universal principles or culturally specific nuances.

While our emphasis on dual-income households provides ecological validity, future research should explore boundary conditions. The Conversation of Resources (COR) model

suggests that people who feel less pressed for time may benefit less from time-saving purchases. A systematic exploration of resource-based differences in the benefits of time-saving purchases across couples could further illuminate these boundary conditions.

Additional Mechanisms. Finally, future research should explore additional mechanisms underlying the association between time-saving purchases and relationship satisfaction. One promising avenue is the role of appreciation and gratitude. Members of dual-income couples who feel appreciated by their partners are less negatively affected by the unequal division of household chores (Gordon et al., 2022; Gordon & Diamond, 2023). Time-saving purchases, when perceived as gestures of appreciation for a partner shouldering more household responsibilities, could mitigate the negative impact of chores on relationship satisfaction.

Furthermore, time-saving purchases may serve as signals of commitment to the relationship. When couples allocate hard-earned discretionary income to save time, this decision could demonstrate each partner's commitment to the relationship and desire to invest in shared time. This investment could therefore foster gratitude and enhance relationship satisfaction through the purchase sending a signal of commitment (Gordon et al. 2022; Joel et al. 2013).

To deepen our understanding of these dynamics, future studies should examine whether felt appreciation and gratitude mediate the association between time-saving purchases and relationship satisfaction. Studies could investigate whether time-saving purchases are received more positively when explicitly framed as gestures of appreciation, particularly for partners who consistently handle a larger share of household duties. Additionally, research should explore whether time-saving purchases are perceived more favorably when partners report feeling grateful for the additional time that these purchases provide.

The impact of perceived commitment, as signaled by time-saving purchases, on relationship dynamics and satisfaction also warrants investigation. Researchers could employ longitudinal designs to track how perceptions of commitment evolve over time in relation to time-saving purchase patterns, and how these perceptions correlate with relationship satisfaction.

While our exploratory study of 193 dyads did not yield strong evidence for the role of perceived partner commitment, these areas merit further examination. Future research should build on our initial results to more deeply examine the complex relationships between time-saving purchases, perceived partner appreciation and commitment, and relationship satisfaction.

Conclusion

Our research, encompassing seven studies and nearly 40,000 participants, demonstrates the positive influence of time-saving purchases on relationship satisfaction for working adults in committed romantic relationships. By applying the Conversation of Resources (COR) model to consumption behavior, we reveal how external purchases can be used to manage internal relationship demands. This work extends the COR model in a new domain, illustrating how market resources can be strategically leveraged to support interpersonal relationships. We show that time-saving purchases can protect against stress, when they enable constructive discussions about chores and facilitate quality time together, contributing to enhanced relationship satisfaction. Our findings highlight the importance of subjective experiences of time spent together, rather than just the quantity of time or specific activities undertaken. This insight extends conventional wisdom about quality time and offers new perspectives on how couples can enhance their relationships.

Overall, this research uncovers an underused path to relationship satisfaction through time-saving purchases. This research suggests new avenues for research and interventions in

relationship science, with potential applications in couple therapy, workplace benefits, and personal financial planning. By bridging the gap between consumer behavior and relationship science, our work provides a foundation for future studies to explore how external resources can be used to strengthen intimate relationships. It also offers practical implications for couples seeking to navigate the challenges of modern life while maintaining satisfying relationships.

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Web Appendix

This Web Appendix provides supplementary materials and analyses that support and extend the main findings reported in the primary manuscript. The studies and analyses presented here offer a deeper exploration of the relationship between time-saving purchases and relationship satisfaction. The Web Appendix contains the following key components:

1. **Web Appendix Study 1 (S1):** *N* = 289 Design: Between-subjects experiment (material purchase vs. time-saving purchase). Purpose: Pilot study for Study 4a reported in text, testing the causal impact of time-saving (vs. material) purchases on relationship satisfaction.
2. **Web Appendix Study 2 (S2):** *N* = 1,403 Design: Within-subject experiment (time-saving purchase and material purchase). Purpose: To isolate the unique impact of time-saving (vs. material) purchases on relationship satisfaction within the same individual.
3. **Web Appendix Study 3 (S3):** *N* = 1,166 Design: Cross-sectional survey. Purpose: To provide an initial pre-registered test of our full conceptual model, serving as a pilot study for Study 6 reported in the main text of the paper.
4. **Web Appendix Study 4 (S4):** *N* = 193 dyads (couples) Design: Dyadic survey. Purpose: To replicate our results with both members of couples and explore potential gender differences.
5. **Study 4a and 4b Additional Analyses:** Additional analyses of Studies 4a and b, using a T2 relationship satisfaction measure that includes a conceptually distinct work-life balance item.
6. **Study 6 Additional Analyses:** Additional analyses of Study 6 data Purpose: To provide further support for our conceptual model using different analytical approaches.
7. **Gender & Income Interactions:** Secondary analyses across studies Purpose: To examine potential the moderating effects of gender and income on the association between time-saving purchases and relationship satisfaction across studies.

Web Appendix Study 1 (S1)

Overview

We conducted an initial pilot study to test the causal impact of time-saving purchases on relationship satisfaction. This study served as the pilot for Study 4a. The measures and methods of this experiment were identical to Study 4a. Mturk participants completed this experiment in exchange for $0.80 USD. Eligible participants were married or in a marriage-like relationship, lived together with their partner, and were employed at least 20 hours per week. Eligible participants first reported on their overall relationship satisfaction. Participants were then assigned to a *material purchase* or a *time-saving purchase* condition, completed post-purchase relationship satisfaction measures, and completed various other demographic measures.

Measures and Manipulations

Overview and demographic characteristics. We targeted 300 respondents and successfully recruited $N = 289$ participants. See Table S1 for demographic characteristics.

Table S1

Demographic Characteristics of Additional Supplemental Studies Not Reported in Text

	S1	**S2**	**S3**	**S4**
% Female	53.3%	51.6%	69.0%	--
Md, Age	35-44	35-44	35-44	35-44
Md, family annual income	$60K-$69K	$100K-$149K	$90-$99K	$75-$99K
Md (range) # of children at home	2 (1-6+)	2 (0-6+)	1 (-0-6+)	1 (0-6+)
Md # of work hours/wk	31-40 hours	40+ hours	40+ hours	40+ hours

Relationship Satisfaction (T1). Participants reported their overall relationship satisfaction using the identical four-item measure from Studies 3-6 ($\alpha = .92$).

Condition Assignment. After completing the T1 relationship satisfaction measure, participants were randomly assigned to the material or time-saving purchase condition.

In the *time-saving purchase condition*, participants thought about and described a recent time-saving purchase they had made together with their romantic partner. They were asked to reflect on a shared purchase of approximately $40 that was made "with the primary intention of acquiring free time: a purchase that allowed you and your partner to have more free time."

In the *material-purchase condition*, participants thought about and described a recent material purchase they had made together with their romantic partner. They were asked to reflect on a shared purchase of approximately $40 that was made "with the primary intention of acquiring a material good: a tangible object that is kept in one's possession."

Relationship Closeness (T2). After writing about a time-saving or material purchase, participants completed measures of post-purchase relationship satisfaction. Participants reported how much the purchase affected their relationship with their romantic partner on a scale from -5 = *Weakened the Relationship Significantly* to +5 = *Strengthened the Relationship Significantly*. Participants reported the extent to which the purchase made them feel close to their partner, connected to their partner, appreciative of their partner, grateful for their partner, and supported by their partner on a scale from 1 = *Strongly Disagree* to *7 = Strongly Agree.* Participants rated whether these purchases helped them to manage work-life demands on a scale from 1 = *Strongly Disagree* to 7 = *Strongly Agree*. We report our results using two different composite measures of post-purchase relationship satisfaction. The first is a 6-item composite that excludes the work-life

balance question (α = .93). The second is a 7-item item composite that includes the work-life balance question. The results are consistent across both composite measures (α = .91).

Quality Time (T2). Participants reported whether the purchase "enable[d] my partner and I to spend more quality time together" on a scale item from 1 = *Strongly Disagree* to 7 = *Strongly Agree.*

Manipulation Check. Participants reported how much time the purchases cost or saved on a scale item from -3 = *Cost a lot of time overall* to +3 = *Saved a lot of time overall*.

Purchase Characteristic Differences. Participants completed items about how ordinary, high in status, practical, fun and useful the purchases were and whether they believed that the was money well-spent or a one-time expense from *1 = Strongly Disagree* to *7 = Strongly Agree*.

Demographics. Participants reported their age, whether they had children living at home, their annual household income, how many hours they worked per week, and gender.

Results

Manipulation Check. Participants who were randomly assigned to the time-saving purchase condition reported that these purchases saved significantly more time (M = 1.71, SD = 1.29) as compared to participants who were randomly assigned to the material purchase condition (M = 0.24, SD = 1.26), $t(287) = 9.74$, $p < .001$, $d = 1.15$. See Table S2 for other purchase characteristic differences between the material and time-saving purchase conditions.

T1 Relationship Satisfaction. T1 relationship satisfaction did not differ by condition, suggesting that random assignment was successful, $t(287) = .33$, $p = .739$, $d = .04$.

T2 Relationship Satisfaction. First, we conducted analyses using the six-item composite that excluded the work-life balance item. Using this 6-item measure as the outcome, time-saving purchases did not result in higher post-purchase relationship satisfaction (M = -.008, SD = .86) as

compared to material purchases (M = 0.008, SD = .86), $t(287) = .15$, $p = .877$, $d = .02$. Second, we conducted analyses using the seven-item composite that included the work-life balance item. Using this 7-item measure as the outcome measure of interest, time-saving purchases did not result in higher post-purchase relationship satisfaction (M = 0.04, SD = 0.78) as compared to material purchases (M = -0.04, SD = 0.82), $t(287) = .85$, $p = .394$, $d = .10$.

Quality Time. Consistent with our conceptual model, time-saving purchases resulted in more quality time together (M = 5.64, SD = 1.25) compared to material purchases (M = 4.93, SD = 1.37, $t(287) = 4.59$, $p < .001$, $d = .54$. These results held controlling for T1 relationship satisfaction and the purchase characteristics reported in Table S2, $\beta = 0.27$, $B = .74$, $SE = .14$, $t(278) = 5.15$, $p < .001$, 95%CI [0.46, 1.03].

We examined the indirect effect of time-saving purchases on post-purchase relationship closeness through quality time using the Process Macro for SPSS with 20,000 bootstrapped samples. The confidence intervals for the indirect effects did not cross zero across all models using both the 6-item composite measure (excluding work-life balance) and the 7-item composite measure (including work-life balance).

For the 6-item measure, without covariates, the *Indirect Effect* (*IDE*) was 0.29, $SE = .07$, 95%CI [.16, .45]. Controlling for T1 relationship satisfaction, the *IDE* was 0.25, $SE = .06$, 95%CI [.14, .37]. Controlling for both T1 relationship satisfaction and the purchase characteristics reported in Table S2 the *IDE* was 0.19, $SE = .04$, 95%CI [.11, .26].

Results replicated using the 7-item measure. Without covariates, the *IDE* was 0.28, $SE = .07$, 95%CI [.15, .42]. Controlling for T1 relationship satisfaction, the *IDE* was .24, $SE = .06$, 95%CI [.13, .35]. Controlling for T1 relationship satisfaction and all purchase characteristics in

Table S2 the *IDE* was 0.17, *SE* = .04, 95%CI [.11, .25]. These results consistently demonstrate an indirect effect across different model specifications and outcome measures.

These results align with Study 4a: The relative benefit of time-saving over material purchases depends on the ability of these purchases to facilitate quality time between partners.

Table S2

Differences between purchases reflected on in each condition

	Material Purchase	***Time-saving Purchase***	***t-value***	***Cohen's d***
These purchases were:				
One-time expense	5.69 (2.67)	4.32 (2.74)	$t(287) = 4.30$, $p < .001$	.51
Better spent on something else	3.06 (2.14)	3.56 (2.33)	$t(285.84) = 1.92$, $p = .056$	.23
Money well-spent	7.67 (1.53)	7.25 (1.82)	$t(280.94) = 2.11$, $p = .035$	.25
Helpful	5.78 (1.19)	5.99 (1.02)	$t(287) = 1.56$, $p = .120$	.18
Fun	5.09 (1.64)	4.53 (1.64)	$t(287) = 2.88$, $p = .004$	.34
High in social status	3.31 (1.60)	3.22 (1.54)	$t(285) = 0.46$, $p = .645$	.05

Note. Analyses of condition differences for the purchase characteristics items "money well spent" and "better spent on something else" were corrected for unequal variances using the Welch's correction. This correction explains the lower degrees of freedom reported in the analyses.

Web Appendix Study 2 (S2)

Overview

Building on S1 and Study 4a, we conducted a within-subject experiment. In this experiment, we used a well-validated recollection paradigm that was similar to the recollection paradigm used in Study 4a and S1. This experiment builds on previous research (Whillans et al. 2017) by asking participants to reflect on both a time-saving purchase and a material purchase made together with their partner. This within-subject design controls for general effects of purchase reflection and isolates the unique impact of time-saving purchases on relationship satisfaction within individuals. By comparing responses to both purchase types from the same participant, we can more precisely attribute differences in relationship satisfaction to the nature of the purchase itself.

Measures and Manipulations

Full-time employees (≥ 31 hours/week) in cohabitating marriage-like relationships were eligible to participate. Participants were recruited through Prolific and compensated $1.50 USD.

After confirming eligibility and assessing baseline relationship satisfaction, participants reflected on two recent $50 purchases made together with their partner: a time-saving purchase that was made with the intention to acquire free time and a material purchase that was made with the intention to acquire a tangible object. The description of these two purchases was identical to the description of the purchases used in S1 and Study 4a. Following each recollection exercise, participants reported on their relationship satisfaction and quality time spent with their partner in relation to the purchases that they had reflected about. These measures are described below.

We determined the sample size through a power analysis based on a pilot study using the identical within-subject design (effect size $d = .15$). This analysis indicated that 1,422

participants were required for 95% power (α = .05) to detect a main effect of time-saving purchases on post-purchase relationship satisfaction. We pre-registered the study through the Open Science Framework (https://osf.io/n3xth). Initially we recruited 1,524 participants. After excluding 121 individuals who did not meet eligibility criteria, our final sample consisted of 1,403 participants. Demographic characteristics of this final sample are available in Table S1.

Measures and Manipulations

Relationship satisfaction (T1). Participants reported their baseline relationship satisfaction using the identical four-item measure from Studies 3-6 (α = .94).

Experimental conditions. After completing the T1 relationship satisfaction measure, participants were randomly assigned to reflect on either the material or time-saving purchase first; all participants completed both reflection assignments in counterbalanced order. Results were statistically equivalent across version order and version did not interact with condition to predict our key outcomes of interest (i.e., quality time and T2 relationship satisfaction).

In the *time-saving purchase condition*, participants reflected and wrote about a time in which they had spent approximately $50 on a time-saving purchase together with their romantic partner. Participants recalled the last time they had spent approx. $50 "with the primary intention of acquiring free time: a purchase that allowed you and your partner to have more free time."

In the *material-purchase condition*, participants reflected and wrote about a time that themselves and their partner had spent approx. $50 together "with the primary intention of acquiring a material good: a tangible object that is kept in one's possession."

Post-purchase relationship satisfaction (T2). After each purchase reflection, participants completed a 3-item scale adapted from Chan & Mogilner (2017) to assess the impact of the purchase on self-reported relationship closeness, which we used in this (and all other

experimental studies) as a proxy for relationship satisfaction. The first item directly measured the effect of the purchase on the relationship: "Compared to other purchases, how did this [material / time-saving] purchase affect your relationship with your current romantic partner?" (1 = *Weakened the relationship much more than other purchases*, 5 = *Strengthened the relationship much more than other purchases*). The second item assessed the contribution of the purchase to feelings of closeness, while the third item measured the contribution of the purchase to feelings of connection. These two items were rated on a scale from 1 (*Much Less Than Other Purchases*) to 5 (*Much More Than Other Purchases*). As pre-registered, these three items were averaged to create a composite measure of post-purchase relationship satisfaction ($\alpha = .86$).

Quality time. Participants then reported how much the purchase affected the amount of quality time they were able to spend with their romantic partner, the amount of enjoyable time they were able to spend with their partner, and how much undistracted attentive time they were able to spend with their partner on a scale from *1 = Much Less Than Other Purchases* to *5 = Much More Than Other Purchases.* As per our pre-registration, these items were averaged and taken as an assessment of post-purchase quality time spent with one's partner ($\alpha = .79$).

Demographics. Participants reported their age, how many children they had living at home, their household income, how many hours they worked per week, and their gender. See Table S1 for demographics.

Results

Relationship satisfaction. A paired-samples *t*-test revealed no significant difference in overall post-purchase relationship closeness between material ($M = 3.51$, $SD = 0.66$) and time-saving purchases ($M = 3.51$, $SD = 0.65$), $t(1384) = .01$, $p = .990$, 95% CI [-.04, .04]. This result is

consistent with Study 4a and S1 and suggests that simply reflecting on different purchase types does not directly affect purchase-relevant relationship satisfaction.

Quality time and relationship satisfaction. Our conceptual model posits that time-saving purchases benefit relationships by facilitating quality time together. To test this hypothesis, we examined whether there was an indirect effect of time-saving purchases on relationship satisfaction via their causal effect on increasing quality time spent with the partner.

A paired-samples *t*-test revealed that participants were significantly more likely to report that the time-saving purchase allowed them to spend more quality time together ($M = 3.84$, $SD = 0.65$) as compared to the material purchase condition ($M = 3.50$, $SD = 0.65$), $t(1381) = 16.08$, $p < .001$, 95% CI [-0.38, -0.30]. The mean difference of 0.34 ($SE = .02$), with a paired samples Cohen's *d* of 0.59, indicates a medium to large effect, suggesting time-saving purchases significantly increased perceived quality time as compared to material purchases. These results are consistent with the results of Study 4a, 4b, and S1 and highlight the critical role of quality time in predicting the relationship benefits of time-saving purchases for romantic couples.

To further investigate this relationship, we conducted a within-subject mediation analysis using a path model in Stata version 18. The data were transformed into long format with standard errors clustered at the participant level. The experimental condition (*time-saving* vs. *material purchases*) was modeled to predict relationship satisfaction through quality time spent with the partner. In this analysis, the condition variable was dummy-coded such that responses made to the time-saving purchase condition was coded as "1" and responses to material purchases were coded as "0."

In the model without covariates, the *Indirect Effect* (*IDE*) was .17, $SE = .011$, 95% CI [.15, .19]. Time-saving purchases had a significant positive effect on quality time spent together,

β = .34, *SE* = .02, $p < .001$, which in turn positively affected relationship satisfaction, β = 0.64, *SE* = 0.02, $p < .001$. The Sobel test was significant ($z = 14.83$, $p < .001$) and the indirect effect of the Monte Carlo simulation with 20,000 replications differed from zero (95% CI [0.14, 0.19]). The standardized indirect effect was 0.17 (*SE* = .011, $p < .001$). When controlling for T1 relationship satisfaction[1], the indirect effect once again differed from zero, *IDE* = 0.16, *SE* = .011, 95% CI [.14, .18].

These results highlight the critical mediating role of quality time in the link between time-saving purchases and relationship satisfaction. While time-saving purchases do not directly increase relationship satisfaction, they do so indirectly by facilitating quality time spent together.

[1] Unlike Studies 4a, 4b and S1, this study did not measure purchase characteristics, and so we did not control for them in these analyses.

Web Appendix Study 3 (S3)

Web Appendix S3 provided an initial pre-registered test of the conceptual model reported in Study 6. In S3, we tested whether time-saving purchases predict relationship satisfaction (H1, H2) through increasing quality time (i.e., positive mood and perceived support; H3). We also tested whether the benefits of time-saving purchases were strongest for members of dual-income couples who were experiencing relatively higher levels of stress (H5). We pre-registered our stopping rule, inclusion criteria, and our analysis plan for this study through the Open Science Framework (https://osf.io/nrdwh). This study was a pilot of Study 6 reported in text.

Participants and Procedure. We recruited respondents from Qualtrics. Respondents were eligible to complete the study if they were employed full-time outside the home (at least 30 hours per week), were married or in a marriage-like relationship, and if they lived together with their partner who was also employed outside the home at least 30 hours per week.

As pre-registered, we targeted 1,000 respondents and Qualtrics slightly over-recruited, resulting in a final sample of $N = 1{,}194$. As pre-registered, this study was intended to replicate the mediation results observed in Study 3 reported in the main manuscript. We therefore targeted 1,000 respondents based on the effect sizes observed in this study from the main manuscript. In Study 3, we observed a standardized effect size of $d = .43$ for the mediation of positive mood on relationship satisfaction and a standardized effect size of $d = .41$ for the mediation of perceived support on relationship satisfaction, which averaged to a standardized effect of $f^2 = .20$. To detect this effect in a regression model with two mediators and six covariates at 95% power, we required at least 620 respondents. We recruited a larger sample to ensure that we would be adequately powered to detect interactions between variables (Blake & Gangestad, 2020).

Respondents completed a survey that took about 10 minutes. First, participants completed the identical 4-item measure of relationship satisfaction from Studies 3-6. Then, they reported on their subjective experience of time spent with their partner in the past week using the two most uniquely predictive measures of quality time observed in Study 3 (i.e., positive mood and perceived support when spending time together). Respondents reported whether they had spent money on time-saving purchases in the past week and how many hours these purchases saved using the identical measures from Study 3. 46.5% of respondents spent money on time-saving purchases together with their partner in the past week, which saved an average of 8.39 hours (*SD* = 13.23). Respondents reported how much money they had spent on material and experiential purchases together with their partner in the past week and provided demographic information (i.e., annual household income, age, gender, and number of children living at home). Consistent with our pre-registered analysis plan, we report our results with and without these covariates.

Measures

Respondents completed the identical four-item scale assessing relationship satisfaction from Studies 3-6. Respondents reported how much positive emotion they felt and how much support they gave and received when spending time with their partner in the past week using the identical measures from Study 3. Respondents reported the amount of stress they had experienced in the past week using the validated and widely used 11-item Perceived Stress Scale (Cohen et al. 1983). See Table S3 for the descriptive statistics and reliabilities of these measures.

Table S3

Descriptive Statistics of Study Variables

Variables	***M***	***SD***	**Observed Range**	**# items**	***N***	***alpha***
1. Relationship satisfaction	5.60	1.40	1.00-7.00	4	1234	.92
2. Quality time – Positive Mood	5.27	1.44	1.00-7.00	6	1212	.94
3. Quality time – Perceived Support	3.66	0.87	1.00-5.00	4	1208	.81
4. Perceived stress	2.79	0.60	1.00-4.55	11	1222	.77
5. Frequency of Chore Discussions	3.96	1.72	1.00-7.00	3	1204	.89
5. Ruminative Chore Discussions	3.94	1.83	1.00-7.00	2	1195	.92
6. Time-saving (dummy coded: 1 = *yes*)	0.46[1]	-	-	1	1194	-
7. Time-saving (Hours)	8.39	13.23	0.00-50.00	1	1194[2]	-
8. Material (dummy coded: 1 = *yes*)	0.75[2]	-	-	1	1187	-
9. Material (Amount)	3.90[3]	3.12	0.00-15.00	1	1187	-
10. Experiential (dummy coded: 1 = *yes*)	0.50	-	-	1	1187	-
11. Experiential (Amount)	3.38[3]	-	0.00-15.00	1	1187	-

Note. [1]These values represent the proportion of entries in which respondents reported making each purchase type. [2]This item was only asked to respondents who reported making time saving purchases. For respondents who didn't make these purchases, their responses were imputed as "0." [3]These categories correspond to $41-60 and $21-$40, respectively.

Discussions about Household Chores. To provide an initial exploratory test of H4, respondents completed two measures regarding the household chores using the identical measures from Study 6 reported in the main manuscript. Respondents reported how frequently they discussed the chores when spending time together in the past week using three items adapted from a validated measure (Cropley et al. 2006). Respondents reported the extent to they spent time discussing the household chores using a scale from 1 = *Not at all* to 7 = *All the Time* (E.g. "While spending time with my partner, we discussed household chores and tasks").

Next, respondents reported how much they had ruminated about the household chores when spending time together with their partner in the past week. Because time-saving purchases increase temporal resources, these purchases should help couples more effectively navigate a common stressor: chores. To test this proposition, respondents completed two items that were adapted from the job strain and work rumination scale (Cropley et al. 2006): "Would you describe your discussion about chores and/or household tasks during the time that you were spending with your partner as reoccurring"; "Would you describe your discussion about chores and/or household tasks during the time that you were spending with your partner as repetitive" from *1 = Not at all* to *7 = Strongly Agree* ($\alpha = .92$). We more fully discuss our decision to use these measures (including the strengths and limitations of these items) in the main manuscript.

We predicted that time-saving purchases would facilitate more positive coping responses to reoccurring stressors (i.e. chores)—which we operationalized as discussing the chores more frequently and ruminating about them less often when spending time together—in turn increasing the subjective quality of shared time and enhancing relationship satisfaction.

Discriminant Validity. The Heterotrait-Monotrait (HTMT) ratio and the Fornell-Larcker criterion were used to assess discriminant validity among three potentially overlapping constructs: Relationship Satisfaction, Positive Mood, and Perceived Support.

The Fornell-Larcker criterion compares the square root of the Average Variance Extracted (AVE) for each construct with the correlations between the constructs. Discriminant validity is established if the square root of AVE for a construct is greater than its correlation with other constructs. Consistent with these criteria, we observed significant discriminant validity for these constructs using the Fornell-Larcker Criterion.

The HTMT ratios for all construct pairs were below the commonly used threshold of 0.85 and the more conservative threshold of .90: Relationship Satisfaction and Positive Mood During Shared Time: .77, Relationship Satisfaction and Perceived Support During Shared Time: .66, and Positive Mood and Perceived Support During Shared Time: .73.

The results of both the Fornell-Larcker criterion and the HTMT ratios provide evidence for the discriminant validity of these three constructs: Relationship Satisfaction, Positive Mood, and Support. The findings suggest that these constructs are measuring distinct aspects of relationship experiences and can be treated as separate constructs in our subsequent analyses.

Table S3
Discriminant Validity Checks in Study S3

Construct 1	**Construct 2**	**Ave of Construct 1**	**Ave of Construct 2**	**Squared Correlation**	**Alpha for Construct 2**
Relationship Satisfaction	Positive Mood	.79	.88	.51	.94
Support	Relationship Satisfaction	.63	.79	.42	.79
Positive Mood	Support	.88	.63	.52	.81

†$p \leq 0.10$, *$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$

Results

Relationship satisfaction. Following our pre-registered plan, we first tested whether making time saving purchases (dummy coded: 1 = *yes*) predicted relationship satisfaction (H2). Supporting this hypothesis, respondents who made time-saving purchases with their partner in the past week (dummy coded: 1 = *yes*) reported greater relationship satisfaction, $\beta = .14$, $B = .38$, $SE = .08$, $t(1192) = 4.74$, $p < .001$, 95%CI [.22, .54]. These results held controlling for our pre-registered covariates: age, gender (dummy-coded: 1 = *female*), the number of children living at home, annual household income, and the amount of money spent on experiential and material purchases in the past week, $\beta = .11$, $B = .31$, $SE = .09$, $t(1153) = 3.66$, $p < .001$, 95%CI [.14, .48]. The hours saved variable showed a statistically equivalent pattern: Respondents who saved more time through time-saving purchases reported greater relationship satisfaction, $\beta = .17$, $B = .02$, $SE = .003$, $t(1232) = 5.87$, $p < .001$, 95%CI [.01, .02]. These results held controlling for our pre-registered covariates: $\beta = .14$, $B = .01$, $SE = .003$, $t(1153) = 4.46$, $p < .001$, 95%CI [.008, .02]

Mediating role of quality time

Following our pre-registration, we conducted a mediation analysis using the Bootstrapping Macro (Model 4: Preacher & Hayes, 2009). We tested whether time-saving purchases predicted relationship satisfaction and whether each of the uniquely predictive quality time variables from Study 3 (i.e. positive mood and partner support) mediated this result.

We conducted the following pre-registered models. In Model 1, we entered positive mood into a mediation model to predict the association between time-saving purchases and relationship satisfaction. In Model 2, we entered perceived partner support into a mediation model to predict the association between time saving purchases and relationship satisfaction. In Model 3, we entered both positive mood and perceived support simultaneously into a mediation model to

predict the association between time-saving purchases and relationship satisfaction. We conducted all three models with our pre-registered covariates: age, gender (dummy coded: 1 = *female*), number of children living at home, amount spent jointly on experiential and material purchases, and annual household income. Following our pre-registration, we first report these models using the dichotomous measure of time-saving purchases (1 = *yes*). We then report these models using the hours saved variable as the predictor. Results are robust across model specifications, attesting to the reliability of these findings across model specifications.

Model 1: Positive Mood.

Time Saving Purchases. First, we tested whether time-saving purchases (dummy coded: 1 = *yes*) predicted relationship satisfaction through positive mood during shared time. Supporting this hypothesis, entering positive mood into the model reduced the association between time-saving purchases and relationship satisfaction from $B = .36$, $SE = .08$, $p < .001$ to $B = .11$, $SE = .05$, $p = .030$. Using bootstrap mediation analysis with 20,000 simulations, the indirect effect differed from zero, $IDE = .27$, $SE = .06$, 95%CI [.15, .39]. This result held with our pre-registered covariates: age, gender, number of children at home, amount spent on experiential and material purchases, and household income, $IDE = .20$, $SE = .07$, 95%CI [.06, .33].

Hours Saved. Next, we conducted this analysis using the hours saved variable. Supporting our hypothesis, entering positive mood into the model reduced the association between time-saving purchases and relationship satisfaction from $B = .02$, $SE = .003$, $p < .001$ to $B = .006$, $SE = .002$, $p = .003$. Using bootstrap mediation analysis with 20,000 simulations, the indirect effect differed from zero, $IDE = .01$, $SE = .002$, 95%CI [.008, .02]. This result held with pre-registered covariates: age, gender, number of children at home, amount spent on experiential and material purchases, and household income, $IDE = .008$, $SE = .002$, 95%CI [.004, 0.01].

Model 2: Perceived Support.

Time Saving Purchases. We tested whether time-saving purchases (dummy coded: 1 = *yes*) predicted relationship satisfaction through perceived support during shared time. Consistent with this hypothesis, entering positive mood into the model reduced the association between time-saving purchases and relationship satisfaction from $B = .32$, $SE = .05$, $p < .001$ to $B = .06$, $SE = .06$, $p = .360$. Using bootstrap mediation analysis with 20,000 simulations, the indirect effect differed from zero, $IDE = .32$, $SE = .05$, 95%CI [.22, .43]. This result held with our pre-registered covariates: age, gender, number of children at home, amount spent on experiential and material purchases, and annual household income, $IDE = .27$, $SE = .05$, 95%CI [.17, .38].

Hours Saved. Next, we assessed whether hours saved predicted relationship satisfaction through perceived partner support. Consistent with this hypothesis, entering support into the model reduced the association between time-saving purchases and relationship satisfaction from $B = .01$, $SE = .002$, $p < .001$ to $B = .006$, $p = .014$. In a bootstrap mediation with 20,000 simulations, the indirect effect differed from zero, $IDE = .01$, $SE = .002$, 95%CI [.008, .02]. This result held controlling for pre-registered covariates: $IDE = .01$, $SE = .002$, 95%CI [.006, .01].

Model 3: Positive Mood & Perceived Support.

As pre-registered, we entered both positive mood and perceived support simultaneously into a model to explain the link between time-saving purchases and relationship satisfaction.

Time Saving Purchases. As pre-registered, we first entered positive mood and perceived support simultaneously into a mediation model to explain the association between time-saving purchases (dummy coded: 1 = *yes*) and relationship satisfaction. Entering both variables into the mediation model weakened the effect of hours saved on relationship satisfaction from $B = .36$, $SE = .08$, $p < .001$ to $B = .06$, $SE = .05$, $p = .21$. In a bootstrap mediation using 20,000

simulations, this indirect effect differed from zero, *IDE* = .32, *SE* = .06, 95%CI [.19, .44]. These results held controlling for our pre-registered covariates, *IDE* = .24, *SE* = .07, 95%CI [.11, .37].

Positive mood was a stronger predictor of relationship satisfaction, *IDE* = .23, *SE* = .06, 95%CI [.13, .34] than perceived support, *IDE* = .09, *SE* = .02, 95%CI [.05, .12]. Following our pre-registration, we conducted a pair-wise comparison. This analysis confirmed that positive mood during shared time was a stronger mediator than perceived support, both without covariates, *Contrast*: *IDE* = .15, *SE* = .05, 95%CI [.05, .26] and with pre-registered covariates, *Contrast*: *IDE* = .10, *SE* = .05, 95%CI [.003, .21]. These findings suggest that perceived support and positive mood help to explain the association between time-saving purchases and relationship satisfaction and that positive mood may be a stronger predictor of this association.

Hours Saved. Next, we first entered positive mood and perceived support simultaneously into a mediation model to explain the association between hours saved and relationship satisfaction. Entering both variables into the model weakened the effect of hours saved on relationship satisfaction from *B* = .02, *SE* = .003, $p < .001$ to *B* = .004, *SE* = .002 $p = .20$. In a bootstrap mediation using 20,000 simulations, this indirect effect differed from zero without *IDE* = .01, *SE* = .002, 95%CI [.09, .02] and with covariates, *IDE* = .01, *SE* = .002, 95%CI [.005, .01].

Positive mood was a stronger predictor of relationship satisfaction, *IDE* = .01, *SE* = .002, 95%CI [.006, .02] than perceived support, *IDE* = .003, *SE* = .007, 95%CI [.002, .005]. Following our pre-registration, we conducted a pair-wise comparison. This analysis confirmed that positive mood during shared time was a stronger mediator than perceived support. In the model without covariates, the 95% confidence interval for this comparison did not cross zero, *Contrast*: *IDE* = .007, *SE* = .002, 95%CI [.004, .01]. This result held when we included our pre-registered covariates, *Contrast*: *IDE* = .005, *SE* = .002, 95%CI [.002, .009]. These findings suggest that

perceived support and positive mood help to explain the association between hours saved and relationship satisfaction and that positive mood may be a stronger predictor of this association.

Moderated Mediation Models to Understand the Role of Stress

As pre-registered, we conducted a moderated-mediation analysis to better understand the role of stress in shaping the associations between time-saving purchases, quality time spent together, and relationship satisfaction. We did not have a priori hypotheses about which of these paths stress would moderate. Thus, all paths had the possibility of being moderated by stress. As pre-registered, we ran two models. First, we specified quality time as positive mood. Second, we specified quality time as perceived support. We ran these analyses with and without our pre-registered covariates: age, gender (dummy-coded: 1 = *female*), the number of children living at home, amount spent jointly on material and experiential purchases, and annual household income. Following the results reported above, we first report these results using the dichotomous measure of time-saving purchases. We then report these results using the hours saved variable.

Positive Mood

***Time Saving*.** In the first pre-registered model, the dichotomous time-saving purchase variable was modeled as the predictor, positive mood was modelled as the mediator, and relationship satisfaction was modeled as the outcome. We tested whether the indirect effect of time-saving purchases (*X*) on relationship satisfaction (*Y*) through greater quality time (*M*)—i.e. the c' path—was conditional on stress. We first conducted this analysis using SPSS Model 7. We then used Model 59 to explore which paths—if any—were moderated by perceived stress.

The dichotomous time-saving purchases (dummy coded: 1 = *yes*) was modeled as the predictor, positive mood was modelled as the quality time mediator, and relationship satisfaction was modeled as the outcome. We explored which of these paths were moderated by perceived

stress. In this model, the Index of Moderated Mediation (*IMM*) had a confidence interval that did not cross zero, *IMM* = .41, *SE* = .10, 95%CI [.22, .62]. We can interpret this index as indicating that the strength of the indirect effect between time-saving purchases on relationship satisfaction through self-reported quality time depended on respondents' self-reported levels of stress. We conducted follow-up analyses using Model 59 to better understand the nature of this conditional indirect effect. First, we tested whether perceived stress moderated the "a" path between time-saving purchases and quality time. Second, we tested whether stress moderated the "b" path between quality time and relationship satisfaction. Finally, we tested whether stress moderated the "c" path (i.e. the direct effect) between time-saving purchases and relationship satisfaction.

In analyzing the "a" path, there was a significant interaction between time-saving purchases and stress to predict quality time (i.e. positive mood) in the past week, *B* = .55, *SE* = .13, $p < .001$, 95%CI [.30, .80]. At -1 *SD* below the mean of stress, the indirect effect crossed zero, *IDE* = -.12, *SE* = .11, 95%CI [-.10, .34]. At the mean of stress, the indirect effect did not cross zero, *IDE* = .47, *SE* = .08, 95%CI [.32, .62]. At +1 *SD* above the mean of stress, the indirect effect did not cross zero, *IDE* = .77, *SE* = .11, 95%CI [.56, .97]. A visual interpretation of these results suggests that the interaction was stronger at higher levels of stress. Perceived stress did not moderate the "b" or "c" paths, *ps* $\geq$ .075. This pattern of results held with covariates: *IMM* = .36, *SE* = .10, 95%CI [.17, .56], the "a" path indicated a significant interaction, *B* = .48, *SE* = .13, *p* = .002, 95%CI [.23, .73] and stress did not moderate the "b" or "c" paths, *ps* $\geq$ .061.

Hours Saved. This model yielded a moderated indirect effect (c') of time-saving purchases on relationship satisfaction through quality time and a moderated direct effect (c) between time-saving purchases and relationship satisfaction. The Index of Moderated Mediation (*IMM*) did not cross zero, *IMM* = .02, *SE* = .003, 95%CI [0.01, 0.03].

We conducted follow-up analyses to better understand the nature of this conditional indirect effect. In analyzing the "a" path, there was a significant interaction between time-saving purchases and perceived stress to predict quality time spent together in the past week, B = .03, SE = .005), p < .0001, 95%CI [.02, .04]. At -1 *SD* below the mean of stress, the indirect effect of hours saved through time-saving purchases on relationship satisfaction through quality time spent together did not cross zero, *IDE* = -0.07, *SE* = 0.01, 95%CI [-.10, -.04]. At mean levels of stress, the indirect effect did not cross zero, *IDE* = -.05, *SE* = .01, 95%CI [-.07, -.03]. At +1 *SD* above the mean of stress, the indirect effect did not cross zero, B = -.03, *SE* = .008, 95%CI [-.04, -.01]. A visual interpretation of these results suggests that the interaction became stronger at higher levels of stress. Perceived stress did not moderate the "b" or "c" paths, *ps* ≥ .21.

This pattern held with pre-registered covariates: The *IMM* was significant = .009, *SE* = .001, 95%CI [.006, .01], the "a" path indicated a significant interaction, B = .01, *SE* = .002, p < .0001, 95%CI [.006, .01], and stress did not moderate the "b" or "c" paths, *ps* ≥ .052.

Perceived Support

Time Saving Purchases. The dichotomous time-saving purchases variable (dummy coded: 1 = *yes*) was modeled as the predictor, quality time (i.e. perceived support) was modeled as the mediator, and relationship satisfaction was modeled as the outcome. In this model, the *IMM* had a confidence interval that did not cross zero, *IMM* = .31, *SE* = .09, 95%CI [.14, .49].

In analyzing the "a" path, there was a significant interaction between time-saving purchases and stress to predict quality time together in the past week, B = .31, *SE* = .08, p < .001, 95%CI [.15, .46]. At -1 *SD* below the mean of stress, the indirect effect did not cross zero, *IDE* = .17, *SE* = .07, 95%CI [.03, .30]. At the mean of stress, the indirect effect did not cross zero, *IDE* = .36, *SE* = .05, 95%CI [.27, .46]. At +1 *SD* above the mean of stress, the indirect effect did not

cross zero, *B* = .53, *SE* = .07, 95%CI [.39, .66]. In analyzing the "b" path, there was a significant interaction between stress and quality time to predict relationship satisfaction, *B* = .22, *SE* = .05, *p* < .001. At -1 *SD* below the mean of stress, the indirect effect did not cross zero, *IDE* = .78, *SE* = .05, 95%CI [.68, .88]. At the mean of stress, the indirect effect did not cross zero, *IDE* = .92, *SE* = .04, 95%CI [.85, .99]. At +1 *SD* above the mean of stress, the indirect effect did not cross zero, *B* = 1.04, *SE* = .05, 95%CI [.95, 1.13]. Stress did not moderate the "c" path, *p* = .0908.

This basic pattern of results held with covariates: the *IMM* did not cross zero = .28, *SE* = .09, 95%CI [.12, .45], the "a" path indicated a significant interaction, *B* = .28, *SE* = .08, *p* < .001, 95%CI [.12, .44], the "b" path indicated a significant interaction, *B* = .23, *SE* = .06, *p* < .001, 95%CI [.12, .33], and stress did not moderate the "c" path, *ps* = .105.

Hours Saved. This model yielded a moderated indirect effect (c') of hours saved on relationship satisfaction via quality time (i.e. perceived support) and a moderated direct effect (c) between hours saved and relationship satisfaction. The confidence interval for the Index of Moderated Mediation (IMM) did not cross zero, *IMM* = .009, *SE* = .004, 95%CI [.003, .02].

In analyzing the "a" path, there was a significant interaction between hours saved and perceived stress to predict quality time together, *B* = .009, *SE* = .003, *p* < .005, 95%CI [.003, 0.02]. At -1 *SD* below the mean of stress, the indirect effect of hours saved on relationship satisfaction via quality time did not cross zero, *IDE* = .007, *SE* = .003, 95%CI [.0004, .01]. At the mean of stress, the indirect effect did not cross zero, *IDE* = .01, *SE* = .002, 95%CI [.009, 0.02]. At +1 *SD* above the mean of stress, the indirect effect did not cross zero, *B* = .02, *SE* = .002, 95%CI [.01, .02]. In analyzing the "b" path, there was a significant interaction between perceived stress and support to predict relationship satisfaction, *B* = .21, *SE* = .05, *p* < .001, 95%CI [.10, .31]. At -1 *SD* below the mean of stress, the indirect effect of hours saved on

relationship satisfaction via quality time did not cross zero, *IDE* = .78, *SE* = .06, 95%CI [.68, .88]. At the mean of stress, the indirect effect did not cross zero, *IDE* = .91, *SE* = .03, 95%CI [.84, .98]. At +1 *SD* above the mean of stress, the indirect effect did not cross zero, *B* = 1.03, *SE* = .04, 95%CI [.95, 1.13]. Perceived stress did not moderate the "c" path, *ps* = .0533.

This basic pattern of results held controlling for our pre-registered covariates. With covariates, the Index of Moderated Mediation (*IMM*) did not cross zero = .009, *SE* = .003, 95%CI [.003, .02], the "a" path indicated a significant interaction, *B* = .009, *SE* = .003, *p* = .008, 95%CI [.002, .02], the "b" path indicated a significant interaction, *B* = .21, *SE* = .05, *p* = .0001, 95%CI [.10, .32]. Stress did not reliably moderate the "c" path, *p* = .048.

In summarizing the results of these analyses, the mediation model linking hours saved to relationship satisfaction through quality time spent together was reliably moderated by respondents' perceived stress levels. These results were driven by stress moderating the association between hours saved and perceptions of quality time (Path A) and the association between perceptions of quality time and relationship satisfaction (Path B).

Examining the "a" path, for people experiencing higher levels of self-reported stress, there was a stronger positive association between hours saved and quality time spent together. Examining the "b" path, for people experiencing higher levels of stress, there was a stronger positive association between quality time spent together and relationship satisfaction—although these results were less reliable across model specifications. Time-saving purchases are more likely to predict quality time for more stressed respondents, and quality time is more important for relationship satisfaction as stress levels rise. Notably, the direct effect of hours saved on relationship satisfaction was non-significant across all levels of stress, underscoring the importance of the mediated pathway through perceptions of quality time.

Serial Mediation to Understand Quality Time

Next, we conducted an exploratory serial mediation analysis to examine the association between time-saving purchases and relationship satisfaction with three mediators: frequent chore discussions, chore rumination, and positive mood during shared time. We ran these analyses with and without covariates using the PROCESS macro (Model 6; Preacher & Hayes, 2009) with 20,000 bootstrapped samples. These analyses were not pre-registered.

Given the significant predictive power of the positive mood during shared time variable compared to the perceived support variable, in these analyses, we focused on operationalizing quality time as positive mood. The pattern of results across these models was consistent regardless of the analytic strategy used, highlighting the robustness of these results across different model specifications. We tested whether time-saving purchases predicted more frequent chore discussions, fewer ruminative chore discussions when spending time together, more quality time, and greater relationship satisfaction as a result. To test this prediction, we entered the dichotomous measure of time-saving purchases as the predictor, chore frequency, ruminative chore discussions and quality time spent together as sequential mediators, and relationship satisfaction as the outcome of interest in a serial mediation model.

***Time Saving Purchases*.** First, we used the dichotomous measure of time-saving purchases as the predictor (dummy coded: 1 = *yes*) in a serial mediation model with 20,000 bootstrapped samples. The total effect of time-saving purchases (dummy coded: 1 = *yes*) on relationship satisfaction was significant, $B = .38$, $SE = .08$, $p < .001$, 95% CI [.23, .53]. When all mediators (i.e. chore frequency, chore rumination, and positive mood during shared time) were included in this model, the direct effect became non-significant, $B = .08$, $SE = .05$, $p = .108$, 95%

CI [-.02, .19]. The confidence interval for the total indirect effect did not cross zero, without *IDE* = .30, *SE* = .06, 95% CI [.17, .42] and with covariates *IDE* = .22, *SE* = .07, 95%CI [.09, .35].

People who made time-saving purchases experienced more positive mood when spending time with their partners, *B* = .36, *SE* = .08, $p < .001$. In turn, positive mood predicted relationship satisfaction, *B* = .73, *SE* = .02, $p < .001$. This indirect effect did not cross zero without *IDE* = .27, *SE* = .06, 95% CI [.15, .39] or with covariates, *IDE* = .19, *SE* = .07, 95% CI [.06, .32].

Consistent with the COR model, time-saving purchases predicted more frequent chore discussions *B* = .82, *SE* = .09, $p < .001$ which in turn positively predicted relationship satisfaction, *B* = .06, *SE* = .02, $p < .001$. The indirect effect did not cross zero without *IDE* = .05, *SE* = .02 95% CI [.02, .09] or with covariates, *IDE* = .05, *SE* = .02, 95%CI [.02, .08].

A serial mediation found evidence that time-saving purchases predicted more frequent chore discussions *B* = .82, *SE* = .09, $p < .001$ which predicted greater positive mood *B* = .32, *SE* = .03, $p < .001$ and relationship satisfaction *B* = .73, *SE* = .02, $p < .001$ without: *IDE* = .19, *SE* = .03, 95% CI [.14, .26] and with covariates: *IDE* = .006, *SE* = .003, 95%CI [.001, .021].

This path model was more explanatory than a mediation model where the order of positive mood and the frequency of chore discussions measure was reversed, as indicated by an indirect effect analysis with a confidence interval that did not cross 0, without *Contrast* = .21, *SE* = .07, 95% CI [.09, .34] and with covariates, *Contrast* = .14, *SE* = .07, 95% CI [.007, .28].

A more complex model found that time-saving purchases predicted more frequent chore discussions but also greater rumination about the chores, *B* = .28, *SE* = .09, *p* = .001. In turn, increased rumination about the chores predicted lower positive mood during shared time together, *B* = -.31, *SE* = .03, $p < .001$ and lower levels of relationship satisfaction, *B* = -.04, *SE* = .02, *p* = .02, *IDE* = -.02, *SE* = .009, 95% CI [-.04, -.001]. This pattern of results held controlling

for our pre-registered covariates: *IDE* = -.02, *SE* = .008, 95% CI [-.03, -.0006]. Critically, a contrast analysis revealed that the positive indirect effect of time-saving purchases on relationship satisfaction through positive mood was stronger than the negative indirect effect observed through chore rumination, *Contrast* = .276, *SE* = .06, 95% CI [.16, .40]. These results held controlling for our pre-registered covariates, *Contrast* = .19, *SE* = .07, 95% CI [.07, .32].

These findings reveal partial support for the "gain-spiral" hypothesis. Time-saving purchases facilitated more positive mood and more frequent conversations about the household chores during shared time. While these purchases increased chore rumination to some extent, the benefits of time-saving purchases for quality time more than compensated for the negative indirect effect of chore rumination, resulting in a net positive impact on relationship satisfaction.

Hours Saved. Second, we used hours saved as the predictor in a serial mediation with 20,000 bootstrapped samples. The total effect of hours saved on relationship satisfaction was significant, *B* = .017, *SE* = .002, $p < .001$, 95% CI [.01, .02]. When all mediators (i.e., chore frequency, chore rumination, and positive mood during shared time) were included in this model, the direct effect remained significant but reduced *B* = .005, *SE* = .002, *p* = .017, 95% CI [.0009, .009]. The confidence interval for the total indirect effect did not cross zero, without *IDE* = .01, *SE* = .002, 95% CI [.008, .02] and with covariates *IDE* = .009, *SE* = .002, 95% CI [.004, .014].

People who saved more hours through time-saving purchases experienced more positive mood when spending time with their partners, *B* = .02, *SE* = .003, $p < .001$. In turn, positive mood predicted relationship satisfaction, *B* = .73, *SE* = .02, $p < .001$. This indirect effect did not cross zero without, *IDE* = .01, *SE* = .002, 95% CI [.007, .02] or with covariates, *IDE* = .008, *SE* = .002, 95% CI [.004, .01].

Consistent with the COR model, hours saved predicted more frequent chore discussions, $B = .04$, $SE = .003$, $p < .001$ which in turn positively predicted relationship satisfaction, $B = .06$, $SE = .02$, $p = .002$. The indirect effect did not cross zero without, $IDE = .003$, $SE = .001$, 95% CI [.0007, .005] or with covariates, $IDE = .003$, $SE = .0009$, 95% CI [.0008, .005].

Furthermore, a serial mediation found evidence that hours saved predicted more frequent chore discussions, $B = .04$, $SE = .0034$, $p < .001$, which predicted greater positive mood, $B = .30$, $SE = .03$, $p < .001$, and relationship satisfaction both without $B = .73$, $SE = .02$, $p < .001$; $IDE = .0003$, $SE = .0001$, 95% CI [.0001, .0005] and with covariates: $IDE = .0002$, $SE = .0001$, 95% CI [.0001, .0004]. This path model was more explanatory than a mediation model where the order of positive mood and frequency of chore discussions was reversed, as indicated by an indirect effect analysis with a confidence interval that did not cross 0, *Contrast* = .009, $SE = .002$, 95% CI [.004, .01]. These results held with covariates, *Contrast* = .006, $SE = .002$, 95% CI [.0007, .01].

A more complex model found that hours saved predicted more frequent chore discussions, but also greater rumination about the chores, $B = .02$, $SE = .004$, $p < .001$. In turn, increased rumination about the chores predicted lower positive mood during shared time, $B = -.31$, $SE = .03$, $p < .001$, and lower levels of relationship satisfaction, $B = -.04$, $SE = .02$, $p = .0122$, $IDE = -.00$, $SE = .0005$, 95% CI [-.002, -.0002]. This pattern of results held controlling for our pre-registered covariates: $IDE = -.001$, $SE = .0005$, 95% CI [-.0019, -.0001]. Critically, a contrast analysis revealed that the positive indirect effect of hours saved on relationship satisfaction through positive mood was stronger than the negative indirect effect observed through chore rumination, *Contrast* = .01, $SE = .002$, 95% CI [.008, .02]. These results held controlling for our pre-registered covariates, *Contrast* = .009, $SE = .002$, 95% CI [.004, .013].

These findings revealed partial support for the "gain-spiral" hypothesis. Hours saved through time-saving purchases facilitated more positive mood and more frequent conversations about the household chores. While these saved hours also increased chore rumination to some extent, the benefits for positive quality time more than compensated for the negative effect of chore rumination, resulting in a net positive impact on relationship satisfaction.

Web Appendix Study 4 (S4)

An important limitation of the studies reported in text is that these studies were conducted with only one member of the couple. To address this, we recruited a sample of dyads to examine whether time-saving purchases predict relationship satisfaction for both partners. This dyadic approach also allows us to explore potential gender differences in the associations between time-saving purchases, stress, and relationship satisfaction among dual-income couples. Given that working women often bear a disproportionate share of household responsibilities (Giurge et al., 2021), we hypothesized that the effects of time-saving purchases on relationship outcomes might vary by gender. This study thus provides a more comprehensive understanding of how time-saving purchases influence relationship dynamics within couples.

Participants and Procedure

We targeted 200 heterosexual couples and Qualtrics was able to collect $N = 193$ couples. Respondents were eligible to complete the study if both partners were employed at least part time outside of the home ($\geq$ 30 hours per week), married or in a marriage-like relationship, and lived together. Respondents were asked to independently complete the relationship satisfaction, and demographic measures from Studies 3, 5, and 6. As part of a larger study, participants also completed additional measures (see the data file on OSF for additional measures).

Results

To analyze this dyadic data, we used Actor-Partner Interdependence Models (APIM; Kenny, Kashy, & Cook, 2006). APIM allows researchers to examine both actor effects (the impact of an individual's responses on their own outcomes) and partner effects (the impact of an individual's responses on their partner's outcomes). All APIM analyses were conducted using structural equation modeling with the lavaan package (version 0.6.17; Rosseel, 2012) in R. To

ensure robust results and to account for potential non-normality in the data, we estimated the models using maximum likelihood estimation with bootstrapped standard errors and confidence intervals (20,000 bootstrap samples). Across all analyses, the Actor-Partner Interdependence Models (APIM) demonstrated excellent model fit, surpassing the criteria for adequate fit (Hu & Bentler, 1999). The goodness-of-fit indices consistently indicated that the models closely represented the observed data, providing a solid foundation for interpreting the results.

Time Saving Purchases (Y/N)

Relationship Satisfaction. The APIM analyses using a dichotomous variable of time-saving purchases (dummy coded: 1 = *yes*) revealed significant actor and partner effects. Women's TSP predicted their own relationship satisfaction, $B = .45$, $SE = .24$, $p = .064$, 95% CI [.003, 0.94] and men's satisfaction, $B = .58$, $SE = .21$, $p = .006$, 95% CI [.18, 1.002]. Men's TSP did not predict their own satisfaction, $B = -.085$, $SE = .231$, $p = .712$, 95% CI [-0.60, 0.33] or women's satisfaction, $B = .08$, $SE = .25$, $p = .762$, 95% CI [-.46, .53]. These results suggest that for women, making a time-saving purchase may benefit the relationship for both partners. For men, the same action had no detectable association with satisfaction.

Perceived Partner Commitment. The APIM model examining the effects of time-saving purchases on perceived partner commitment did not reveal any significant actor or partner effects ($ps \geq .301$), suggesting that time-saving purchases were not significantly associated with either partner's perception of their spouse's commitment in this study.

Moderating Role of Stress. To investigate the potential moderating effect of stress on the association between time-saving purchases and relationship satisfaction, an APIM was conducted with both partners' stress levels as moderators. The analyses replicated the main effects with women's TSPs predicting their own relationship satisfaction, $B = .40$, $SE = .23$, $p =$

.07, 95% CI [-.04, .86] and men's relationship satisfaction, *B* = .62, *SE* = .20, *p* = .001, 95% CI [.25, 1.03]. Additionally, the interaction between women's TSPs and their own stress significantly predicted their relationship satisfaction, *B* = .16, *SE* = .08, *p* = .033, 95% CI [.02, .31] and men's relationship satisfaction, *B* = .15, *SE* = .07, *p* = .031, 95% CI [.003, .28]. However, no significant moderating effects were found for men's TSPs and stress levels. These findings suggest that the benefits of women's TSPs for the couple's relationship well-being appear to be more pronounced in the context of elevated stress experienced by the female partner in dual income couples.

Hours Saved Through Time-Saving Purchases

Relationship Satisfaction. The APIM analyses using the continuous variable of time-saved revealed significant actor and partner effects on relationship satisfaction. Women's TSP weakly predicted their own relationship satisfaction, *B* = .042, *SE* = .023, *p* = .068, 95%CI [-.003, .09] and men's relationship satisfaction, *B* = .047, *SE* = .021, *p* = .024, 95%CI [.009, .009]. Men's TSP did not predict their own satisfaction, *B* = .006, *SE* = .022, *p* = .768, 95%CI [-.04, 0.05] or women's satisfaction, *B* = .024, *SE* = .023, *p* = .301, 95%CI [-.024, .068]. These findings indicate that women's time-saving purchases had a stronger association with both their own and their partners' relationship satisfaction as compared to men's time-saving purchases.

Perceived Partner Commitment. There was an actor effect of men's time-saving purchases on perceived partner commitment, *B* = .036, *SE* = .016, *p* = .020, 95%CI [.006, .067]. In other words, when men saved more time through time-saving purchases, they perceived their wives as being more committed and invested within the relationship.

The Moderating Role of Stress. APIM was used to examine the moderating role of both partners' stress levels on the relationship between hours saved via TSPs and relationship

satisfaction[2]. Women's TSPs weakly predicted their own relationship satisfaction, *B* = .012, *SE* = .008, *p* = .10, 95% CI [.01, .17] and significantly predicted their partners' relationship satisfaction, *B* = 0.06, *SE* = .02, *p* = .016, 95% CI [.02, 0.11]. The interaction between women's TSPs and their own stress predicted men's relationship satisfaction, *B* = .015, *SE* = .008, *p* = .056, 95% CI [.0001, .03]. Simple slopes analysis showed that at higher levels of women's stress (+1 *SD*), women's time-saving purchases had a stronger positive association with men's relationship satisfaction, *B* = .11, *SE* = .04, *p* = .002 as compared to at the mean *B* = .06, *SE* = .02, *p* = .016 or at low (-1 *SD*) levels of stress, *B* = .003, *SE* = .004, *p* = .928. These results suggest that women's time-saving purchases have a more pronounced positive effect on their partners' relationship satisfaction when women experience higher levels of stress.

Purchases Made for Oneself, One's Partner, and By the Partner

We examined the effects of three different types of time-saving purchases (TSPs) on relationship satisfaction for both partners: purchases made by oneself for oneself, purchases made by oneself for one's partner, and purchases made by one's partner for oneself.[3] Separate APIMs were estimated for each type of purchase.

Purchases Made by Oneself for Oneself. Women's TSPs made for themselves predicted both their own relationship satisfaction, *B* = .009, *SE* = .004, *p* = .024, 95% CI [.002, .02] and their partner's (men's) relationship satisfaction, *B* = .011, *SE* = .004, *p* = .004, 95% CI [.004, .02]. Men's TSPs for themselves were not significantly associated with their own, *B* = -.000, *SE* =

[2] The model included actor and partner effects of TSPs and stress, their interactions, and equality constraints on the actor effects of stress and three-way interactions between one partner's TSPs and both partners' stress.

[3] We also explored whether any of these variables predicted perceived partner responsiveness. There were no reliable results across any models (*ps*$\geq$0.105) and these results are not discussed further.

.004, p = .912, 95% CI [-.009, .007] or their partner's (women's) relationship satisfaction, B = .004, SE = .004, p = .268, 95% CI [-.004, .01].

Purchases Made for One's Partner. Men's TSPs made for their partners (women) predicted their own relationship satisfaction, B = .008, SE = .004, p = .039, 95% CI [.000, .02]), and women's TSPs for men predicted men's relationship satisfaction, B = .01, SE = .004, p = .016, 95% CI [.003, .02]. However, men's purchases for women were not associated with women's satisfaction, B = .003, SE = .006, p = .636, 95% CI [-.007, .02] and women's purchases for men were not associated with their own relationship satisfaction, B = .008, SE = .006, p = .183, 95% CI [-.002, .02].

Purchases Made by You for Your Partner. TSPs women made for their partners positively predicted their partner's (men's) relationship satisfaction, B = .01, SE = .004, p = .015, 95% CI [.003, .02], but not their own satisfaction, B = .006, SE = .005, p = .179, 95% CI [-.002, .02]). Men's TSPs for women did not significantly predict their own, B = -.001, SE = .006, p = .800, 95% CI [-.01, .008] or their partner's (women's) relationship satisfaction, B = .005, SE = .006, p = .352, 95% CI [-.007, .02].

These findings highlight the impact of time-saving purchases on relationship satisfaction based on the gender of the purchaser and the recipient. Women's time-saving purchases, whether made for themselves or their partners, seem to have a more significant positive effect on both their own and their partners' relationship satisfaction compared to men's purchases.

Overall Conceptual Model

To test our main conceptual model, which posits that time-saving purchases (TSPs) enhance satisfaction for both partners by increasing quality time spent together, particularly for couples experiencing high stress levels, we also conducted a moderated-mediation analysis at the

couple level.[4] The analyses described below supported our model, revealing that TSPs predicted relationship satisfaction for both partners, mediated by the quality time spent together. Moreover, the positive impact of TSPs on relationship satisfaction was stronger for couples experiencing higher stress levels. This finding suggests that TSPs may be beneficial for stressed couples, as these purchases can alleviate time pressure and create opportunities for meaningful interactions.

Time-Saved (Dichotomous). We fit a structural equation model to examine the links between whether each partner reported making time-saving purchases in the past month, the average amount of quality time that couples reported spending together in the past month, the average amount of stress couples reported experiencing in the past month (using a standardized composite), and individually reported relationship satisfaction. We included interaction terms between hours saved through time-saving purchases and couple level stress and between couple level stress and perceived quality time in the model. Due to the dyadic nature of the data, with partners' responses nested within couples, the results are constrained to be equal across partners. This is a standard approach in dyadic data analysis that accounts for the non-independence of responses from partners in the same couple by simultaneously estimating partners' outcomes while allowing their residuals to be correlated (Kenny, Kashy, & Cook, 2006).

The model showed good fit to the data, $\chi^2(6) = 9.451$, $p = .150$, CFI = .989, TLI = .961, RMSEA = .055 [90% CI: .000, .117], SRMR = 0.034. The results revealed significant direct effects of time-saving purchases (TSPs) on relationship satisfaction for Partners A and B (B = 0.45, SE = .18, p = .013, 95% CI [.09, .81].

Quality time spent together mediated the association between TSPs and relationship satisfaction for Partners A and B (indirect effect: B = .39, SE = .18, p = .037, 95% CI [.02, .75]).

[4] We used couple-level data in this analysis due to insufficient statistical power resulting in inadequate model fit using the APIM approach.

Stress moderated the effect of TSPs on quality time spent together for Partners A & B (B = .21, SE = .06, p = .001, 95% CI [.08, .33]. Lastly, the interaction between stress and TSPs had a significant indirect effect on relationship satisfaction through greater quality time spent together for Partners A & B, B = .05, SE = .02, p = .012, 95% CI [.01, .08].

Hours Saved Through Time-Saving Purchases. We also fit a structural equation model to examine the associations between the average number of hours that each couple reported saving through TSPs each month, the average amount of quality time that couples reported spending together in the past month, the average amount of stress that couples reported experiencing in the past month (using a standardized composite), and individually reported relationship satisfaction. Once again, we included interaction terms between hours saved through time-saving purchases and couple level stress and between couple level stress and perceived quality time in the model. Due to the dyadic nature of the data, with partners' responses nested within couples, the results are constrained to be equal across partners. This is a standard approach in dyadic data analysis that accounts for the non-independence of responses from partners in the same couple by simultaneously estimating partners' outcomes while allowing their residuals to be correlated (Kenny, Kashy, & Cook, 2006).

The model showed good fit to the data, $\chi^2(6) = 7.717$, p = .260, CFI = .996, TLI = .983, RMSEA = .039 [90% CI: .000, .106], SRMR = .030. There were significant direct effects of hours saved through TSPs on relationship satisfaction for Partners A and B, B = .05, SE = .02, 95% CI [.01, .09], p = .009. Quality time spent together mediated this association for Partners A and B, indirect effect: B = .004, SE = .002, p = 0.036, 95% CI [.0002, .009]. Stress moderated the effect of time-saving purchases on quality time together for Partners A and B, B = .02, SE = .006, p = .001, 95% CI [.008, .03], and relationship satisfaction for Partners A and B, B = .01, SE =

.005, p = 0.04, 95% CI [.000, .021]. The interaction between stress and TSPs had an indirect effect on relationship satisfaction through greater quality time spent together for Partners A and B with a confidence interval that did not cross zero, B = .004, SE = .002, p = .015, 95% CI [.001, .007]. Together these results suggest that the buffering effect of TSPs on the negative impact of stress on relationship satisfaction was partially explained by self-reported increases in the extent to which couples reported that they were spending quality time together.

Discussion

This additional study offers a comprehensive examination of the role of time-saving purchases in shaping relationship satisfaction among dual-income couples. By employing a dyadic approach that considers the perspectives of both partners, we can deeply explore the complex interplay between time-saving purchases, gender, stress, and relationship satisfaction.

One of the most illuminating findings is the consistent positive impact of women's time-saving purchases on both their own and their partner's relationship satisfaction. Whether made for themselves or their partners, women's time-saving purchases emerged as a significant predictor of relationship satisfaction for both partners. These findings suggest that when women invest in time-saving purchases, it not only benefits their own experiences within the relationship but also has a positive spillover effect on their partner's satisfaction. In contrast, men's time-saving purchases exhibited a more limited influence on relationship satisfaction, with their purchases for their partners predicting only their own satisfaction and not their partner's.

Moreover, our study highlights the crucial role of stress as a moderator in the association between time-saving purchases and relationship satisfaction. The benefits of time-saving purchases for relationship well-being were amplified when couples, particularly women, experienced higher levels of stress. This finding underscores the potential of time-saving

purchases to serve as an effective coping mechanism for couples facing time pressure and stress, enabling them to alleviate some of the burden and foster opportunities for quality time together.

Importantly, our couple-level moderated-mediation analysis lends support to our conceptual model, demonstrating that time-saving purchases predict relationship satisfaction for both partners through quality time spent together, with this result being more pronounced for couples experiencing higher stress levels. This finding suggests that time-saving purchases may be particularly beneficial for stressed couples, as these purchases can help mitigate time pressure and create opportunities for meaningful interactions, thereby strengthening the relational bond.

Study 4a and 4b Additional Analyses

In the main manuscript, we report the results of Studies 4a and 4b using a 6-item measure of post-purchase relationship satisfaction that excludes the work-life balance question. Here, we present the results of a robustness check, showing that the findings reported in Studies 4a and 4b hold using a 7-item relationship satisfaction composite measure that includes the following item: "When this purchase was made, it enabled me deal with the demands of work and life."

Study 4a

T2 Relationship satisfaction. In Study 4a, we standardized and averaged responses to these seven items to create a composite of post purchase relationship satisfaction ($\alpha = .91$). Consistent with the results reported in the main text, participants in the time-saving purchase condition did not report higher levels of post-purchase relationship satisfaction ($M = 0.03$, $SD = 0.78$) as compared to the material purchase condition ($M = -0.03$, $SD = 0.83$), $t(626) = 0.89$, $p = .374$, 95%CI [-.18, .07], $d = .07$. This result held controlling for baseline relationship satisfaction ($p = .076$) and controlling for T1 and for the purchase characteristics described in text ($p = .067$).

Quality time spent together. Our conceptual model suggests that the benefits of time-saving purchases should be most pronounced when facilitating quality time between partners. To test this, we conducted an exploratory indirect effect analysis using the Process Macro (Model 4) in SPSS with 20,000 simulations. This analysis tested the indirect of time-saving purchases on relationship satisfaction through self-reported quality time spent together (H3). In this model, time-saving (versus material) purchases significantly predicted the amount of quality time that working adults reported spending together, $\beta = .18$, $B = .49$, $SE = .11$, $t(626) = 4.60$, $p < .001$, 95% CI [.28, .70]. In turn, quality time predicted higher levels of post-purchase relationship satisfaction, $\beta = .66$, $B = .39$, $SE = .02$, $t(626) = 21.80$, $p < .001$, 95% CI [.36, .43].

The CI for indirect effect analysis did not cross zero, *IDE* = .20, *SE* = .04, 95% CI [.11, .28]. These results held controlling for T1 relationship satisfaction, *IDE* = .21, *SE* = .04, 95% CI [.13, .29] and when we controlled for both T1 relationship satisfaction and for the purchase characteristic items together, *IDE* = .17, *SE* = .03, 95% CI [.11, .24].

Study 4b

T2 relationship satisfaction. Consistent with the results reported in the main text, participants who were randomly assigned to the shared time-saving condition reported significantly higher post-purchase relationship satisfaction (M = 0.27, SD = 0.65) as compared to participants in the non-shared time-saving condition (M = -0.29, SD = 0.85), $t(365.49) = 7.36$, $p < .001$, 95%CI [.41, .71], $d = .74$. These results are reported using a Welsch's correction to account for unequal variances across condition. These results held controlling for T1 satisfaction ($p < .001$) and when controlling T1 satisfaction and the purchase characteristics ($p < .001$).

Study 6 Additional Analyses

Overview

In the analyses that follow, we report the primary serial mediation results using additional operationalizations of quality time—i.e. as perceived support during shared time and using a standardized composite of positive mood during shared time and perceived support. We then report the primary serial mediation results controlling for relationship conflict as a covariate. We then report the moderated-mediation results using these two alternative ways of specifying quality time. Finally, we report all the main results in text using the dichotomous measure of time-saving purchases as opposed to the measure of hours saved through time-saving purchases.

Consistent with the results reported in the main text and with our pre-registration, we report these models without and with pre-registered covariates: age, gender (dummy coded: 1 = *female*), the number of children living at home, amount spent on experiential and material purchases, and annual household income. Consistent with the exploratory section of our pre-registration, we also report the results of the serial mediation analysis when including relationship conflict as a control variable alongside the pre-registered demographic controls.

Serial Mediation Analysis

Perceived Support. We conducted a serial mediation to examine the association between time-saving purchases and relationship satisfaction with three mediators: frequent chore discussions, chore rumination during time spent together, and perceived support during time spent together in the past week. We ran these analyses with and without covariates using the PROCESS macro (Model 6; Preacher & Hayes, 2009) with 20,000 bootstrapped samples.

The total effect of hours saved on relationship satisfaction was significant, $B = .016$, $SE = .003$, $p < .001$, 95% CI [.01, .02]. When all mediators were included in this model, the direct

effect became non-significant, B = -.003, SE = .003, p = .348, 95% CI [-.008, .003]. The confidence interval for the total indirect effect did not cross zero, IDE = .019, SE = .002, 95% CI [.014, .024]. As predicted, respondents who reported saving more time through time-saving purchases discussed the household chores more frequently with their romantic partners when together, B = .05, SE = .004 p < .001. In turn, more frequent chore discussions positively predicted relationship satisfaction, B = .11, SE = .03, p < .001, IDE = .006, SE = .002, 95%CI [.003, .009]. These results held with pre-registered covariates, IDE = .004, SE = .001, 95%CI [.002, .007] and when we added relationship conflict as a control variable alongside the pre-registered set of demographic control variables, IDE = .004, SE = .001, 95%CI [.002, .006].

As predicted, a serial mediation showed that hours saved predicted more frequent discussions, B = .05, SE = .004, p < .001, which predicted greater support during shared time, B = .22, SE = .02, p < .001, and greater relationship satisfaction as a result, B = 1.05, SE = .04, p < .001; IDE = .01, SE = .002, 95% CI [.009, .02]. These results held with pre-registered covariates IDE = .009, SE = .001, 95%CI [.007, .01] and when we added relationship conflict as a covariate alongside the demographic controls, IDE = .006, SE = .001, 95%CI [.005, .009]. These results are consistent with the "gain spiral" proposition of the COR model, showing that members of romantic couples who make time-saving purchases more proactively manage the household chores which predicts greater perceived support when together and relationship satisfaction.

In contrast to our pre-registered hypothesis, consistent with the results of Study S3, a more complex model found that hours saved predicted greater chore discussions, B = .05, SE = .004, p < .001, but also greater rumination about the chores when spending time together, B = .58, SE = .03, p < .001. In turn, increased rumination about the chores during shared time undermined perceived support when spending time together, B = -.14, SE = .02, p < .001 and in

turn reduced relationship satisfaction, $B = 1.05$, $SE = .04$, $p < .001$; *IDE* = -.005, *SE* = .0006, 95% CI [-.006, -.003]. This pattern of results was consistent with covariates, *IDE* = -.004, *SE* = .0006, 95%CI [-.005, -.003] and when we added relationship conflict to the model alongside our pre-registered demographic controls. *IDE* = -.002, *SE* = .0004, 95%CI [-.002, -.001].

Importantly, a contrast analysis revealed that the positive indirect effect of time-saving purchases on relationship satisfaction through perceived support, *IDE* = .01, *SE* = .002, 95% CI [.008, .02] was stronger than the negative indirect effect observed through chore discussions and rumination, *IDE* = -.003, *SE* = .0008, 95% CI [-.005, -.002], *Contrast: IDE* = .02, *SE* = .002, 95% CI [.01, .02]. These results held with demographic covariates, *Contrast: IDE* = .02, *SE* = .002, 95%CI [.01, .02] and when we added relationship conflict as a covariate in the model alongside our demographic controls, *Contrast: IDE* = .008, *SE* = .001, 95%CI [.006, .01].

Composite Measure. We conducted a serial mediation to examine the association between time-saving purchases and relationship satisfaction with three mediators: frequent chore discussions, chore rumination during time spent together, and a standardized composite measure of perceived positive mood and perceived support during time in the past week ($\alpha = .82$). We ran these analyses with and without demographic items and relationship conflict as controls using the PROCESS macro (Model 6; Preacher & Hayes, 2009) with 20,000 bootstrapped samples.

The total effect of hours saved on relationship satisfaction was significant, $B = .02$, $SE = .003$, $p < .001$, 95% CI [.01, .02]. When all mediators were included in this model, the direct effect became non-significant, $B = -.003$, $SE = .003$, $p = .244$, 95% CI [-.008, .002]. The confidence interval for the total indirect effect did not cross zero, *IDE* = .018, *SE* = .003, 95% CI [.011, .024]. As predicted, respondents who reported saving more time through time-saving purchases discussed the household chores more frequently with their romantic partners, $B = .05$,

SE = .004, $p < .001$. In turn, more frequent chore discussions positively predicted relationship satisfaction, *B* = .04, *SE* = .02, *p* = .064, *IDE* = .002, *SE* = .0009, 95% CI [-.0002, .0035]. These results held with our pre-registered covariates, *IDE* = .002, *SE* = .0009, 95% CI [.0002, .004] and when we added relationship conflict as a control variable along with the pre-registered set of demographic control variables, *IDE* = .002, *SE* = .0009, 95% CI [.0002, .004].

As predicted, a serial mediation showed that hours saved predicted more frequent chore discussions, *B* = .05, *SE* = .004, $p < .001$ which in turn predicted quality time, *B* = .24, *SE* = .02, $p < .001$ and greater relationship satisfaction as a result, *B* = 1.20, *SE* = .03, $p < .001$; *IDE* = .014, *SE* = .003, 95% CI [.008, .02]. These results held with our pre-registered covariates, *IDE* = .013, *SE* = .003, 95% CI [.008, .02] and when we added relationship conflict as a covariate alongside the demographic controls, *IDE* = .02, *SE* = .003, 95% CI [.02, .03]. These results are once again consistent with the "gain spiral" proposition of the COR model, showing that members of romantic couples who make time-saving purchases more proactively manage the household chores, which predicts greater perceived support during shared time and relationship satisfaction.

In contrast to our pre-registered hypothesis, once again, a more complex model found that hours saved predicted greater chore discussions, but also greater chore rumination when spending time together, *B* = .57, *SE* = .03, $p < .001$. In turn, increased chore rumination during shared time undermined quality time together, *B* = -.17, *SE* = .02, $p < .001$ and in turn reduced relationship satisfaction, *B* = -.07, *SE* = .02, *p* = .001; *IDE* = -.006, *SE* = .0008, 95% CI [-.008, -.005]. This pattern of results held with covariates, *IDE* = -.005, *SE* = .0007, 95% CI [-.0062, -.003] and relationship conflict as a control: *IDE* = -.002, *SE* = .0005, 95% CI [-.003, -.001].

Importantly, a contrast analysis revealed that the positive indirect effect of time-saving purchases on relationship satisfaction through quality time, *IDE* = .01, *SE* = .003, 95% CI [.0082,

.0195] was stronger than the negative indirect effect observed through chore discussions and rumination, *IDE* = -.002, *SE* = .0005, 95% CI [-.002, -.0006]; *Contrast: IDE* = .02, *SE* = .002, 95% CI [.02, .03]. These results held with demographic covariates, *Contrast: IDE* = .02, *SE* = .002, 95% CI [.01, .02] and when we added relationship conflict as a covariate in the model alongside our demographic controls, *Contrast: IDE* = .01, *SE* = .002, 95% CI [.0008, .01].

Robustness Check with Relationship Conflict Control. When we included relationship conflict as a control variable in this model, the association between time-saving purchases and relationship satisfaction was reduced from $B = .04$, $SE = .003$, $p < .001$ to $B = .006$, $SE = .002$, $p = .018$. Again, the confidence interval for the indirect effect did not cross zero, *IDE* = .03, *SE* = .002, 95% CI [.03, .04], even when we added pre-registered demographic controls into the model, *IDE* = .03, *SE* = .003, 95% CI [.02, .03].

Hours saved once again predicted a greater frequency of chore-related discussions, $B = .05$, $SE = .004$, $p < .001$, which in turn positively predicted greater positive mood during shared time and higher relationship satisfaction as a result, $B = .10$, $SE = .02$, $p < .001$. These results held both without *IDE* = .005, *SE* = .001, 95% CI [.003, .007] and with controls, *IDE* = .004, *SE* = .001, 95% CI [.002, .006]. Time-saving purchases also continued to predict higher positive mood, $B = .03$, $SE = .003$, $p < .001$ which in turn predicted greater relationship satisfaction, $B = .67$, $SE = .02$, $p < .001$. This result held with controls, *IDE* = .019, *SE* = .003, 95% CI [.01, .02].

Notably, when we controlled for relationship conflict, two paths became non-significant. The path from time-saving purchases and chore rumination to relationship satisfaction crossed zero, without, *IDE* = .0000, *SE* = .0002, 95% CI [-.0005, .0005] and with controls, *IDE* = -.001, *SE* = .0002, 95% CI [-.006, .004]. Similarly, the path from time-saving purchases to chore

rumination, positive mood, and satisfaction also crossed zero without, *IDE* = .0000, *SE* = .0003, 95% CI [-.0006, .0006] and with controls, *IDE* = -.0001, *SE* = .0003, 95% CI [-.008, .0006].

One negative pathway remained statistically reliable: Hours saved through time-saving purchases predicted more frequent chore discussions, which predicted greater chore rumination, and in turn negatively influenced relationship satisfaction, both without, *IDE* = -.002, *SE* = .0006, 95% CI [-.0028, -.0007] and with demographic controls: *IDE* = -.001, *SE* = .0004, 95% CI [-.002, -.0004]. While controlling for relationship conflict reduced some of the negative pathways, it did not eliminate the potential for time-saving purchases to indirectly negatively influence relationship satisfaction through chore discussions and increased rumination.

When we controlled for relationship conflict, a contrast analysis revealed that the positive indirect effect of time-saving purchases through greater quality time remained reliably stronger than the negative indirect effect through chore discussions and rumination both without, *Contrast*: *IDE* = .022, *SE* = .003, 95% CI [.02, .03] and with controls, *Contrast: IDE* = .02, *SE* = .003, 95% CI [.01, .03]. These results support the robustness of our findings.

When we controlled for relationship conflict, the role of chore rumination as a direct mediator diminished. These findings suggest that some of the negative indirect effect of time-saving purchases on relationship satisfaction through chore rumination may be driven in part by individuals in high-conflict relationships. Crucially, the positive effect of time-saving purchases on quality time continued to outweigh the negative indirect effect of chore-related rumination, which resulted in a positive impact of time-saving purchases on relationship satisfaction through quality time, even when accounting for the negative indirect effect of chore rumination.

Moderated Mediation

Perceived Support. Next, we tested whether the indirect effect of time-saving purchases (*X*) on relationship satisfaction (*Y*) through quality time (i.e. perceived support) (*M*) was conditional on self-reported stress. In Model 7, the Index of Moderated Mediation did not cross zero, *IMM* = .007, *SE* = .003, 95%CI [.001, .01]. This index indicates that the strength of the indirect effect between time-saving purchases on relationship satisfaction through greater quality time (i.e. perceived support) was dependent on respondents' self-reported levels of stress.

We conducted pairwise contrasts to test whether these indirect effects were significantly different from one another. The pairwise comparison between the indirect effect of +1 *SD* above the mean of stress and the mean of stress differed from zero, *IDE* = .005, *SE* = .002, 95%CI [.0008, .009], as did the pairwise comparison between +1 *SD* above the mean of stress and -1 *SD* below the mean of stress, *IDE* = .009, *SE* = .004, 95%CI [.002, .02]. These analyses support the interpretation that the mediation result of hours saved through time-saving purchases on relationship satisfaction through support was stronger at higher levels of self-reported stress. This pattern held with our pre-registered covariates, *IMM* = .009, *SE* = .003, 95%CI [.003, .02].

We then conducted follow-up analyses using Model 59 to understand the nature of this conditional indirect effect. First, we tested whether stress moderated the "a" path between time-saving purchases and quality time. Second, we tested whether stress moderated the "b" path between support and relationship satisfaction. Finally, we tested whether stress moderated the "c" path (the direct effect) between time-saving purchases and relationship satisfaction.

In analyzing the "a" path, there was a significant interaction between time-saving purchases and stress to predict quality time together in the past week, *B* = .007, *SE* = .003, *p* = .04, 95%CI [.0002, .01]. These results suggest that time-saving purchases have a more positive influence on the experience of quality time during shared time when respondents are

experiencing higher levels of stress. In analyzing the "b" path, there was an interaction between quality time and perceived stress to predict relationship satisfaction, $B = .41$, $SE = .06$, $p < .0001$, 95%CI [.30, .52]. These findings show that perceived support during shared time has a stronger effect on relationship satisfaction when individuals report experiencing higher levels of perceived stress. Perceived stress did not moderate the "c" path, $B = .002$, $SE = .004$, $p = .727$.

This pattern held with pre-registered covariates: The "a" path indicated a significant interaction, $B = .008$, $SE = .03$, $p = .018$, 95%CI [.001, .014], the "b" path indicated a significant interaction between quality time and perceived stress, $B = .43$, $SE = .06$, $p < .001$, 95%CI [.31, .55], and stress did not moderate the "c" path, $B = .002$, $SE = .005$, $p = .596$.

Composite Measure. Lastly, we tested whether the indirect effect of time-saving purchases (*X*) on relationship satisfaction (*Y*) through a standardized composite measure of quality time (*M*) was conditional on self-reported stress. In Model 7, the Index of Moderated Mediation did not cross zero, *IMM* = .01, *SE* = .004, 95% CI [.005, .02]. This index indicates that the strength of the indirect effect between time-saving purchases on relationship satisfaction through greater quality time was dependent on respondents' self-reported levels of stress.

We conducted pairwise contrasts to test whether these indirect effects were significantly different from one another. The pairwise comparison between the indirect effect of +1 *SD* above the mean of stress and the mean of stress differed from zero, *IDE* = .01, *SE* = .002, 95% CI [.007, .017], as did the pairwise comparison between +1 *SD* above the mean of stress and -1 *SD* below the mean of stress, *IDE* = .02, *SE* = .004, 95% CI [.01, .03]. These analyses support the interpretation that the mediation result of hours saved through time-saving purchases on relationship satisfaction via quality time was stronger at higher levels of self-reported stress. This pattern held with our pre-registered covariates, *IMM* = .01, *SE* = .004, 95% CI [.006, .02].

We then conducted follow-up analyses using Model 59 to understand the nature of this conditional indirect effect. First, we tested whether stress moderated the "a" path between time-saving purchases and quality time. Second, we tested whether stress moderated the "b" path between quality time and relationship satisfaction. Finally, we tested whether stress moderated the "c" path (the direct effect) between time-saving purchases and relationship satisfaction.

In analyzing the "a" path, there was a significant interaction between time-saving purchases and stress to predict quality time together in the past week, B = .01, SE = .003, p = .001, 95% CI [.004, .02]. These results suggest that time-saving purchases had a more positive influence on the experience of quality time when respondents were experiencing higher levels of stress. In analyzing the "b" path, there was an interaction between quality time and perceived stress to predict relationship satisfaction, B = .23, SE = .04, p < .001, 95% CI [.15, .32]. These findings show that quality time had a stronger effect on relationship satisfaction when individuals reported experiencing higher levels of perceived stress. Perceived stress did not moderate the "c" path, B = -.0007, SE = .004, p = .856, 95% CI [-.008, .006]. This pattern held with pre-registered covariates: The "a" path indicated a significant interaction, B = .013, SE = .004, p = .0005, 95% CI [.006, .02], the "b" path indicated a significant interaction between quality time and perceived stress, B = .25, SE = .05, p < .001, 95% CI [.16, .34], and stress did not moderate the "c" path, B = .00003, SE = .004, p = .997, 95% CI [-.008, .008].

Using Dummy Coded TSP Variable

Relationship satisfaction. Consistent with the results reported in the main text using the hours variable, respondents who spent money on time-saving purchases together with their partner in the past week reported higher relationship satisfaction than those who did not spend money on time-saving purchases in the past week, β = .12, B = .33, SE = .08, t(1168) = 4.002, p

< .001, 95%CI [.17, .50]. These results held controlling for our pre-registered covariates: age, gender (dummy-coded: 1 = *female*), the number of children living at home, household income, and the amount of money spent on experiential and material purchases in the past week, β = .10, B = .30, SE = .09, $t(1118) = 3.26$, p = .001, 95%CI [.12, .47].

Quality Time Mediation. For brevity, and to match the pre-registration, we report the quality time mediations using the dummy coded time-saving purchase variable as the predictor (dummy coded: 1 = *yes*) and positive mood during shared time as our operationalization of quality time. Mirroring the results reported in text, we conducted this analysis using the Bootstrapping Macro (Model 4: Preacher & Hayes, 2008) with 20,000 bootstrapped samples.

Supporting our pre-registered hypothesis, entering positive mood during shared time into the model significantly reduced the association between time-saving purchases and relationship satisfaction from B = 0.33, SE = .08, p < .001 to B = .003, SE = .05, p = .954. Bootstrap mediation analyses with 20,000 simulations confirmed that the indirect effect differed from zero, IDE = 0.33, SE = .07, 95% CI [.20, .46]. This result held after including our pre-registered covariates: age, gender (dummy coded: 1 = *female*), number of children living at home, the amount spent jointly on experiential and material purchases in the past week, and annual household income. With covariates, the association between time-saving purchases and relationship satisfaction was reduced from B = .29, SE = .09, p = .001 to B = .04, SE = .06, p = 0.47 and the indirect effect did not cross zero, IDE = .25, SE = .07, 95% CI [.12, .39].

Serial Mediation. Next, we conducted a pre-registered serial mediation to examine the association between time-saving purchases (dummy coded: 1 = *yes*) and relationship satisfaction with three mediators: frequent chore discussions, chore rumination, and positive mood during shared time. We ran these analyses using the PROCESS macro (Model 6; Preacher & Hayes,

2009) with 20,000 bootstrapped samples. The total effect of time-saving purchases on relationship satisfaction was significant, $B = .33$, $SE = .08$, $p < .001$, 95% CI [.17, .50]. When all mediators were included in this model, the direct effect became non-significant, $B = -.02$, $SE = .05$, $p = .755$, 95% CI [-.13, .09]. The confidence interval for the total indirect effect did not cross zero, $IDE = .35$, $SE = .07$, 95% CI [.22, .49]. These results held when we included our pre-registered demographic controls into the model: the total effect $B = .29$, $SE = .09$, $p = .001$, 95% CI [.12, .47], the direct effect $B = .02$, $SE = .06$, $p = .707$, 95% CI [-.09, .13], and the total indirect effect did not cross zero, $IDE = .27$, $SE = .07$, 95% CI [.13, .42].

Consistent with the results reported in the main text, people who made time-saving purchases discussed the household chores more frequently with their romantic partners, $B = 1.16$, $SE = .09$, $p < .001$. In turn, more frequent chore discussions positively predicted relationship satisfaction, $B = .09$, $SE = .02$, $p < .001$. The indirect effect did not cross zero, both without $IDE = .11$, $SE = .03$, 95% CI [.05, .17] and with controls, $IDE = .08$, $SE = .02$, 95%CI [.03, .13].

A serial mediation showed that time-saving purchases predicted more frequent discussions about the chores, $B = 1.16$, $SE = .09$, $p < .001$ which in turn predicted more positive mood during time spent together, $B = .35$, $SE = .03$, $p < .001$ and greater relationship satisfaction as a result, $B = .73$, $SE = .02$, $p < .001$; $IDE = .30$, $SE = .04$, 95% CI [.23, .39]. This finding was consistent with demographic controls, $IDE = .22$, $SE = .03$, 95% CI [.15, .30]. These results are consistent with the "gain spiral" proposition of the COR model, showing that making time-saving purchases predicts more proactive management of the household chores, which in turn predicts more quality time when together and greater relationship satisfaction as a result.

In contrast to our pre-registered hypothesis, a more complex model found that time-saving purchases predicted greater chore discussions but also greater rumination about the chores

when spending time together in the past week, B = .61, SE = .03, p < .001. In turn, increased rumination about the chores was associated with less positive mood, B = -.24, SE = .03, p < .001 and lower relationship satisfaction, B = -.09, SE = .02, p < .001; *IDE* = -.12, SE = .02, 95% CI [-.16, -.09]. This result held with demographic controls, *IDE* = -.09, SE = .02, 95%CI [-.13, -.06].

A contrast analysis revealed that the positive indirect effect of time-saving purchases on relationship satisfaction through positive mood, *IDE* = .16, SE = .06, 95% CI [.03, .28] was stronger than the negative indirect effect observed through chore discussions and rumination, *IDE* = -.06, SE = .01, 95% CI [-.10, -.04]); *Contrast*: *IDE* = .28, SE = .06, 95% CI [.15, .41]. This pattern held with demographic controls, *IDE* = .13, SE = .07, 95% CI [.006, .26].

These findings revealed partial support for the "gain-spiral" hypothesis. Time-saving purchases facilitated more frequent conversations about the household chores. To the extent that these conversations prompted rumination, time-saving purchases negatively predicted relationship satisfaction. Critically, however, the benefits of quality time more than compensated for the negative effect of chore-related rumination, resulting in a net positive impact on relationship satisfaction. These results contrast with our pre-registered hypothesis, which anticipated an overall positive effect of time-saving purchases through increased chore discussions and decreased rumination about the chores during time together in the past week.

Moderated Mediation. We then tested whether the indirect effect of time-saving purchases (X) on relationship satisfaction (Y) through greater quality time (M)—i.e., the c' path depicted in Figure 4—was conditional on respondents' self-reported levels of stress.

As predicted, this model yielded a moderated indirect effect (c') of time-saving purchases on relationship satisfaction through quality time. In Model 7, the Index of Moderated Mediation did not cross zero, *IMM* = .31, SE = .11, 95% CI [.10, .53]. This index indicates that the strength

of the indirect effect between time-saving purchases on relationship satisfaction through quality time (i.e., positive mood) depended on respondents' self-reported levels of stress.

We conducted pairwise contrasts to test whether these indirect effects were significantly different from one another. The pairwise comparison between the indirect effect of +1 *SD* above the mean of stress and the mean of stress differed from zero, *IDE* = .20, *SE* = .07, 95% CI [.07, .33] as did the pairwise comparison between +1 *SD* above the mean of stress and -1 *SD* below the mean of stress, *IDE* = .39, *SE* = .14, 95% CI [.13, .66]. These analyses support the interpretation that the mediation result of time-saving purchases on relationship satisfaction through quality time was stronger at higher levels of self-reported stress. The conditional indirect effects at different levels of stress further illustrated this pattern as follows: -1 *SD* below the mean of stress: *IDE* = .22, *SE* = .07, 95% CI [.08, .36], the mean of stress: *IDE* = .42, *SE* = .06, 95% CI [.30, .54], and +1 *SD* above the mean of stress: *IDE* = .61, *SE* = .11, 95% CI [.40, .83]. These results indicate that the positive indirect effect of time-saving purchases on relationship satisfaction through quality time becomes stronger as levels of stress increase.

We then conducted follow-up analyses using Model 59 to understand the nature of this conditional indirect effect. First, we tested whether stress moderated the "a" path between time-saving purchases and quality time. Second, we tested whether stress moderated the "b" path between quality time and relationship satisfaction. Finally, we tested whether stress moderated the "c" path (the direct effect) between time-saving purchases and relationship satisfaction.

In analyzing the "a" path, there was a significant interaction between time-saving purchases and perceived stress to predict quality time together in the past week, *B* = .41, *SE* = .13, *p* = .002, 95% CI [.15, .67]. At -1 *SD* below the mean of stress, the effect of time-saving purchases on quality time was significant, *B* = .29, *SE* = .12, *p* = .015, 95% CI [.06, .52]. At the

mean of stress, the effect was stronger, $B = .54$, $SE = .08$, $p < .001$, 95% CI [.39, .70]. At +1 *SD* above the mean of stress, the effect was stronger, $B = .80$, $SE = .11$, $p < .001$, 95% CI [.58, 1.02]. Time-saving purchases therefore had a more positive influence on the experience of positive mood during shared time when respondents experienced higher levels of stress.

In analyzing the "b" path, there was an interaction between quality time and perceived stress to predict relationship satisfaction, $B = .08$, $SE = .03$, $p = .005$, 95% CI [.02, .13]. At -1 *SD* below the mean of stress, the effect of quality time on relationship satisfaction was significant, $B = .68$, $SE = .03$, $p < .001$, 95% CI [.62, .74]. At the mean of stress, the effect of quality time was significant, $B = .73$, $SE = .02$, $p < .001$, 95% CI [.69, .77]. Lastly, at +1 *SD* above the mean of stress, the effect was significant, $B = .78$, $SE = .02$, $p < .0001$, 95% CI [.73, .82]. Together, these findings show that spending positive time together had a stronger effect on relationship satisfaction when individuals reported higher levels of perceived stress.

Perceived stress did not moderate the "c" path, $B = -.01$, $SE = .09$, $p = .871$, 95% CI [-.18, .16]. The direct effect was not significant at any level of stress (low: $B = .04$, $SE = .077$, $p = .66$; mean: $B = .02$, $SE = .05$, $p = .637$; high: $B = .02$, $SE = .07$, $p = .829$).

Web Appendix Gender and Income Interactions

Study	TSP Variable	Model Without Covariates	Model With Covariates
Study 1 – Gender	TSP (# of services)	*B*=-.06, *p*= .094	*B*=-.06, *p*=.080
Study 1 – Income	TSP (# of services)	*B*=-.001, *p*=.947	*B*=-.002, *p*=.769
Study 3 – Gender	TSP (dummy coded: *1=yes*)	*B*=-.19, *p*=.222	*B*=-0.19, *p*=.221
	TSP (*hours*)	*B*=.007, *p*=.317	*B*=0.009, *p*=.205
Study 3 – Income	TSP (dummy coded: *1=yes*)	*B*=.04, *p*=.099	*B*=0.04, *p*=.113
	TSP (*hours*)	*B*=-.001, *p*=.228	*B*=-0.001, *p*=.220
Study 4a – Gender	Condition (dummy coded: 1=*time*, 0=*material*)	*B*=-.05, *p*=.714	*B*=-0.03, *p*=.750
Study 4a – Income	Condition	*B*=.007, *p*=.301	*B*=-0.005, *p*=.786
Study 4b – Gender	Condition (dummy coded: 1=*shared*, 0=*non-shared*)	*B*=-.10, *p*=.498	*B*=-0.03, *p*=.828
Study 4b – Income	Condition (dummy coded)	*B*=.02, *p*=.660	*B*=0.02, *p*=.323
Study 5 – Gender	TSP (dummy coded: *1=yes*)	*B*=-.18, *p*=.013	*B*=-0.18, *p*=.012
	TSP (*hours*)	*B*=-.08, *p*=.167	*B*=-0.01, *p*=.188
Study 5 – Income	TSP (dummy coded: *1=yes*)	*B*=.13, *p*=.057	*B*=0.13, *p*=.062
	TSP (*hours*)	*B*=.04, *p*=.352	*B*=0.001, *p*=.301
Study 6 – Gender	TSP (dummy coded: 1=*yes*)	*B*=-0.06, *p*=.306	*B*=-0.05, *p*=.359
	TSP (*hours*)	*B*=.002, *p*=.259	*B*=.003, *p*=.700
Study 6 – Income	TSP (dummy coded: 1 = *yes*)	*B* = -.009, *p*=.768	*B*=-.01, *p*=.654
	TSP (*hours*)	*B*=.0002, *p*=.849	*B*=.0003, *p*=.906
S1 – Gender	Condition (dummy coded: 1=*time*, 0=*material*)	*B*=.05, *p*=.646	*B*=0.05, *p*=.659
S1 – Income	Condition (dummy coded)	*B*=-.02, *p*=.849	*B*=-0.004, *p*=.960
S2 – Gender	Condition (dummy coded: 1=*time*, 0=*material*)	*B*=.09, *p*=.025	*B*=0.09, *p*=.025
S2 – Income	Condition (dummy coded)	*B*=.01, *p*=.268	*B*= 0.01, *p*=.269
S3 – Gender	TSP (dummy coded: *1=yes*)	*B*=-.02, *p*=.760	*B*=-0.03, *p*=.879
	TSP (*hours*)	*B*=.003, *p*=.496	*B*=0.004, *p*=.513
S3 – Income	TSP (dummy coded: *1=yes*)	*B*=-0.04, *p*=.131	*B*=-0.05, *p*=.060
	TSP (*hours*)	*B*=-0.001, *p*=.303	*B*=-0.001, *p*=.156

Note. This table presents the interactions between time-saving purchases (TSP), gender, and income across all studies in this paper. Across all studies, gender was dummy coded such that 1=*female*, 0=*male*, other excluded. We did not test the interactions between gender and income in Study 2 because of low between-subject power. Despite the large number of comparisons conducted, we observe very few statistically significant interactions. Out of 24 interactions tested (48 when considering models with and without covariates), only two reached statistical significance at the conventional $p < 0.05$ level: the gender interaction in Study 5 for TSP (1 = *yes*) (B = -0.18, p = 0.013) and the gender interaction in Study S2 (B = 0.09, p = 0.025). Notably, these significant results are in opposite directions, with women benefiting less from TSP in Study 5 but more in Study S2. This inconsistency, combined with the overall pattern of non-significant results, suggests that these isolated findings should be interpreted with caution. These results align with previous research on the personal benefits of buying time, which has found that gender and income do not consistently moderate these benefits (Lok & Dunn, 2022). It is also possible that because we were focused on a relatively homogeneous sample of working adults living in the US and UK, we reduced the ability to detect interactions by income given the relatively homogenous samples we tested.