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Time is one of our most important resources. Whether buying products, using services, or having experiences, every aspect of consumption takes time. It takes time to collect information, consider options, weigh tradeoffs, make purchases, interact with service providers, return items, and share word of mouth. Further, how consumers spend time influences everything from attitude formation and goal achievement to happiness and well-being (Etkin and Ratner 2013; Liu and Aaker 2008; Ratner and Hamilton 2015; Whillans et al. 2017; Kahneman et al. 2004; Mogilner 2010). Indeed, consumers' biggest regrets often involve what they did (or did not do) with their time (Gilovich and Medvec 1995; Roese and Summerville 2005).

Given time's importance, and that "for many, time is not just a scarce resource, it is *the* scarce resource" (Leclerc, Schmitt, and Dube 1995, p. 110), one might expect time would play a critical role in decision making. When deciding what to buy, for example, or how many options to explore, consumers should consider the implications for their time.

But while consumers say that they value their time (Hershfield, Mogilner, and Barnea 2016; Monga, May, and Bagchi 2017; Whillans et al. 2017), and wish they had more of it (Etkin, Evangelidis, and Aaker 2015; Sharif, Mogilner, and Hershfield 2021; Whillans, Weidman, and Dunn 2016), when it comes to actually making decisions, the time implications often seem neglected (Ebert and Prelec 2007; Soman 2001; Soster, Monga, and Bearden 2010; Spiller 2019; Zauberman 2003; Zauberman et al. 2009). People think about time less than other resources, for example, and are less interested in saving it (Gino and Mogilner 2014). Similarly, although valuing time is associated with greater happiness and well-being (Hershfield et al. 2016; Whillans et al. 2016), consumers tend to value it less (Okada and Hoch 2004).

Why might such "time costs" (i.e., the time required to do something) be neglected? And what might make them more likely to be considered?

This research proposes a unifying conceptual model to better understand "time cost neglect" and uses it to help explain the disconnect between consumers' want of time and their surrounding behavior. Integrating existing work with new theorizing, we delineate when and why consumers are more or less likely to consider how consumption choices and actions impact their time. First, the framework suggests why time costs may be neglected. Specifically, we discuss how inherent characteristics of time may reduce awareness of time costs and make them seem less important. Second, the framework highlights contextual factors (as well as individual and cultural differences) that, by raising awareness of time costs, or making them seem more important, should make time costs more likely to be considered (i.e., incorporated into decision making). Finally, we discuss interventions for consumers (i.e., to encourage spending time in more satisfying ways), and companies and organizations (e.g., to more effectively market time-saving products and services) as well as directions for future research (e.g., the impacts of technology and implications for resources other than time).

This work makes three main contributions. First, while extensive research has considered money's role in decision making (Cannon, Goldsmith, and Roux 2019; Hamilton et al. 2019), time has received less attention (Leclerc, Schmitt, and Dubé 1995). But money isn't the only resource involved in consumer decisions, and time serves a key role. By conceptualizing "time cost neglect," and developing a theoretical framework around when and why time costs are more or less likely to be considered, our perspective highlights that time use is also an output of decision making, and that failing to consider this can lead to less satisfying time expenditures.

Second, though prior research has explored certain aspects of time (e.g., perceived time constraints; Etkin et al. 2015; Monga et al. 2017), and differences between time and money (e.g., fungibility and mental accounting; Okada and Hoch 2004; Soman 2001), this work has largely

been disconnected. By focusing on time as a resource (Shaddy and Shah 2018) and organizing prior findings based on this perspective, our framework provides a more complete understanding of why time costs may be neglected, and what may encourage their consideration.[1]

Third, our model has clear practical implications. Despite time's importance, consumers struggle to spend it well. They spend too much time on certain things (Jhang and Lynch 2015), too little on others (Kahneman et al. 2004; Keinan and Kivetz 2008), and often run out of time to accomplish what they intended to do (Fernbach, Kan, and Lynch 2015). Further, feeling time constrained is associated with a host of negative outcomes, including depression (Roxburgh 2004) and insomnia (Strazdins et al. 2011). By deepening insight into "time cost neglect," our work sheds light on why people may fail to spend their time as intended. We also identify factors that should encourage time cost consideration, highlighting interventions that may help consumers spend time in more satisfying ways.

## TIME AS A RESOURCE

Consumer research has studied time in various ways. Some work has focused on time perception, examining how consumers perceive time's passing (Graham 1981) or how scarce time seems (Donnelly et al. 2021; Etkin et al. 2015; Fernbach et al. 2015; Monga et al. 2017). Other work has focused on temporal distance, examining intertemporal choice and how the distance between now and the future affects decision making (Ebert and Prelec 2007; Soman

[1] While we sometimes compare time to money, our framework goes beyond time-money tradeoffs to inform time cost neglect more generally. While some decisions pit time against money, others are just about time (e.g., deciding between restaurants that take reservations online vs. by phone), and others involve additional resources (e.g., buying in bulk has implications for time and physical space). By delineating features of time that lead time costs to be neglected, and contextual factors that should encourage consideration, the framework informs how time costs are incorporated into a broad range of consumer decisions.

1998; Zauberman and Lynch 2005; Zauberman et al. 2009). And a third body of work has explored how people conceptualize time, in relation to the clock (Avnet and Sellier 2011; Tang, Huang, and Su 2023), the self (Bartels and Urminsky 2011; Mogilner and Aaker 2009), or different periods (e.g., past and future; Bartels and Urminsky 2015; Donnelly, Compiani, and Evers 2022; Kim, Zauberman, Bettman 2012; Trope, Liberman, and Wakslak 2007).

But while these perspectives have provided valuable insights, time is also a resource (Leclerc et al. 1995; Monga et al. 2017; Okada and Hoch 2004; Shaddy and Shah 2018). It is a form of capital that, like other resources (e.g., money), can be used to acquire things of value (i.e., things that consumers want or need; Becker 1965; Shaddy and Shah 2018). This includes not only tangible things (e.g., products and services) but also more intangible ones (e.g., social connection or self-actualization; Mogilner 2010; Rudd, Catapano, and Aaker 2019).

Importantly, the fact that time can be used to acquire things of value means that how time is spent has consequences. Time is finite (Etkin 2019; Etkin et al. 2015; Leclerc et al. 1995; Monga et al. 2017). Consumers only have so much (e.g., 24 hours a day), so spending time on one thing means having less to do others (Etkin and Memmi 2021; Fernbach et al. 2015; Jhang and Lynch 2015). Time spent searching for flights, for example, or on hold with customer service, means less time to shop for groceries or use the gym.[2] Consequently, when consumers don't consider that time is being spent, or the time implications of their decisions, they may be forgoing opportunities to receive or achieve things of (greater) value.

[2] One could argue that time can be used to do multiple things at once (e.g., shopping online while waiting on hold). Given the need to pay some attention to a focal task, though, multitasking is often challenging. Further, even if one can multitask, this does not change the fact that time cost neglect may occur for the reasons we outline in the paper.

## TIME COST NEGLECT

Building on the notion of time as a resource, we define "time costs" as the time required to do something (i.e., how long it takes to undertake a task).[3] This can include the time needed to shop at a certain store or use a service, but also the time required to make these choices in the first place (e.g., doing research or considering alternatives). Time costs are an attribute of many, if not most, judgments and decisions, and anytime consumers spend their time, they are paying a time cost of that activity.

We suggest that consumers often "neglect" time costs. They buy new tech products with lots of features, for example, but neglect the hours it will take to learn how to use them (Thompson, Hamilton, and Rust 2005). They order clothes from multiple online retailers without considering how long it will take to return what they don't want to keep. And they buy stand-up desks, or large furniture, while neglecting how long they will take to assemble. Indeed, when we asked people to consider a recent decision, and the factors that drove it, almost 75% didn't consider time costs at all (compared to less than 33% who didn't consider money). Further, they suggested that time costs were less than half as important to decision making as monetary ones (see Appendix for details).

One could argue that time costs are neglected because they tend not to be provided. While monetary costs are almost always displayed (e.g., through a price), for example, time costs rarely are. When buying groceries at the store, for example, the price of fruit or meat is usually posted, but the associated time costs (e.g., to find the items and checkout) are not. This, not

[3] Analogously, "monetary costs" refer to how much money it costs to do (e.g., buy) something.

surprisingly, should make consumers less aware of time costs and thus less likely to incorporate them into decision making.[4]

But while not being provided certainly plays a role, we suggest there is a much more fundamental reason that time costs are neglected. Specifically, we propose that characteristics of time, as a resource, lead time costs to be overlooked (this may also contribute to their not being provided).[5] Time is relatively intangible (e.g., it cannot easily be seen or counted), for example, and is passively spent (e.g., spending occurs automatically, without active intervention).

We suggest that these, and other inherent characteristics of time, lead time costs to be neglected because they (1) reduce spontaneous awareness of time costs (by making them less likely to be noticed) and (2) make time costs seem less important.[6] When buying a car, for example, certain features may attract more attention than others (e.g., color rather than trunk space), but even if consumers were aware of them, those features may not impact decision making (e.g., trunk space may seem unimportant).

Next, we lay out our conceptual framework regarding "time cost neglect" (see Table 1, following References). First, we outline inherent characteristics of time that we suggest lead time costs to be neglected (because they reduce spontaneous awareness of time costs or make them seem less important). Second, we highlight key contextual factors (e.g., cues that make

[4] While one could argue that time costs might be neglected because they are unknowable, in most situations this seems unlikely. In thinking about when to go grocery shopping, for example, consumers may not know exactly how much longer it will take to shop on the weekend versus during the week, but can generate a reasonable estimate. Further, through repeated experience, they may be able to sharpen that estimate. Consequently, we suggest that even in situations where consumers *could* estimate time costs, they tend not to do so for the reasons detailed.

[5] One reason that time costs may not be provided is that consumers do not care about them very much. If enough people care about certain information, it is more likely to be provided. Food didn't always have nutrition labeling, for example, and cars didn't always provide miles per gallon ratings. But as more people started paying attention to these dimensions, legislation was passed that encouraged their provision. Similarly, if enough consumers cared enough about time costs, they would request them, and companies would be encouraged to provide them. Consequently, the lack of explicit provision may also be a *consequence* of time cost neglect, and not just a *cause*.

[6] Said another way, we suggest that inherent features of time, as a resource, may help explain why time costs, as an attribute, are neglected in evaluations and decisions.

alternative time uses salient), as well as individual and cultural differences, that, by raising awareness of time costs, or making them seem more important, should make time costs more likely to be incorporated into decision making. Third, we discuss interventions for consumers (e.g., to encourage spending time in more satisfying ways) and companies and organizations (e.g., to market time-saving products and services), as well as directions for future research (e.g., the impacts of technology and implications for resources other than time).

Note, we do not mean to suggest that time costs are the *most* important input to decision making, or that they should be prioritized *more* than other factors (e.g., money). When consumers are financially constrained, for example, it makes sense that monetary concerns play a larger role. We simply suggest that consumers will often benefit from at least considering time costs, regardless of whether they prioritize them.[7]

Further, while time cost neglect may sound similar to opportunity cost neglect, the two concepts are quite different. Opportunity cost neglect refers to the fact that, when considering a focal expenditure (e.g., buying something), people tend to neglect what *else* could be done with that resource *instead* (i.e., what else they could do with the money; Frederick et al. 2009; Spiller 2011). Importantly, however, time costs are *direct* costs, not opportunity costs (i.e., the time it takes to do something, not what else could be done with that time). Just like a shirt may cost $40, for example, it may take 15 minutes to buy and another 10 to return. Thus, while opportunity cost neglect refers to neglecting *other* ways a resource could be spent, time cost neglect is about neglecting that expenditure *in the first place*. Rather than neglecting what *else* one could do with a certain amount of time, for instance, neglecting the fact that things take time *to begin with*.

[7] We are also not suggesting that considering time costs will necessarily lead to spending less time. When trying to find the perfect gift for a friend, for example, knowing how much time one has spent so far may lead people to invest even more time searching. Consequently, rather than changing time spent, our interest is in whether people consider the implications for their time when making decisions.

That said, time costs and opportunity costs do have some points of connection. One reason spending time is costly, for example, is because of the associated opportunity costs (i.e., spending time on one thing often means having less time for others). Consequently, as we will discuss, opportunity cost salience (i.e., awareness of alternative time uses) is one contextual (and individual) factor that we suggest should make time costs seem more important, and thus more likely to be considered. Similarly, the fact that people neglect time costs also means they are unlikely to think about related opportunity costs. It's hard to think about opportunity costs of time if you don't think about time costs in the first place.

Finally, while incorporating time costs into decisions should often be beneficial, there may certainly be downsides if taken too far. Time stress is associated with negative health outcomes (Malkoc and Tonietto 2019), and while maximizing tendencies can encourage better results, they can also reduce satisfaction (Iyengar, Wells, and Schwartz 2006). Along these lines, becoming overly preoccupied with time costs and spending time effectively may have negative effects (see General Discussion). Among the many consumers who feel pressed for time, however, some greater consideration would likely be beneficial. Overall, by better understanding the drivers of time cost neglect, and factors that encourage consideration, consumers should be able to make more informed decisions and spend time in more satisfying ways.

## INHERENT CHARACTERISTICS IMPACTING AWARENESS

We suggest time costs are often neglected because time has inherent characteristics that make time costs less likely to be noticed. Specifically, time tends to be (1) intangible, (2)

passively spent, and (3) informally transacted, all of which should make time costs less likely to attract attention and reduce the chance that consumers become aware of them.

**P1:** Inherent characteristics of time (i.e., it is intangible, passively spent, and informally transacted) should make time costs less likely to be noticed.

Note, by reducing awareness of time costs, these factors may also make time costs seem less important, but we discuss them under awareness because we suggest any effect they have on importance should primarily occur *indirectly* through awareness.

Time is Intangible

Tangibility refers to the extent to which something can be physically sensed (e.g., touched or seen; Laroche, Bergeron, and Goutaland 2001). Physical objects (e.g., a desk or a chair), for example, can be readily touched and seen. Time, in contrast, is intangible (Bardhi and Eckhardt 2017). It can't be touched, and while one can watch its passing (e.g., on a clock), time itself is invisible. Someone with two free hours, for example, cannot physically perceive or handle that time.

Time is also hard to quantify. It can't be counted or accumulated the way that other resources can (e.g., stacked like $1 bills). And while time can be measured, time expenditures are difficult to track (Soster et al. 2010; Heath and Soll 1996; Sussman and Alter 2012).

We suggest that time's intangibility should reduce awareness of time costs. Resource tangibility can impact attention to spending (Raghubir and Srivastava 2008; Soman 2001). Payment methods that can be physically touched and seen (e.g., cash), for example, are more

salient than methods that lack physical presence (e.g., credit cards; Shah et al. 2016), which draws attention to those expenditures. Consequently, because time is intangible, time expenditures should attract less attention, making consumers less aware that time costs occur.

**P1a:** Time's intangibility should make time costs less likely to be noticed.

Time is Spent Passively

Another reason we suggest time costs are less likely to be noticed is because time is often spent passively. Resources vary in how actively (i.e., consciously or deliberately) they are spent. Money, for example, is usually spent actively, by pulling out a credit card, tapping a phone, or taking some other action. Time, however, is often spent passively (i.e., automatically, or without active intervention). To start answering email, for example, or browse social media, there is no need to hand over time, or swipe a timecard. Consequently, although consumers can choose *how* to spend time, time elapses regardless of whether one makes active choices or not.

Passive spending, in turn, should reduce awareness of time costs. More passive monetary transactions (e.g., automatic bill payments), for example, make payment less salient and increase spending (Sexton 2015). More passive ways of eating (e.g., eating popcorn from a large bowl rather than individual bags) also lead to greater food consumption (Cheema and Soman 2008). The same should hold for time. That time is passively spent means consumers often choose to do things (e.g., start answering email), or continue doing them (e.g., keep answering email), without conscious attention (Hsee, Zhang, and Zhang 2013), and thus without realizing the implications for their time. This should make them less aware that time costs occur.

**P1b:** That time is spent passively should make time costs less likely to be noticed.

Time is Informally Transacted

A third reason we suggest time costs are less likely to be noticed is that they tend to be informally transacted. Resources differ in how formally they are transacted. Money, for example, is the primary means of economic exchange and is typically spent in formal settings (e.g., handing over money for goods, Bernstein 2008). Time, however, is not as immediately and visibly transacted. Indeed, as discussed, time costs are often not provided. They also aren't usually tracked (i.e., noticed and recorded), and because time is spent passively, the amount involved may be obscured. These aspects should contribute to time seeming informally transacted, and make time costs less apparent.

Consumers are also less used to thinking about time as a medium (i.e., something that can be traded for other things of value; Hsee et al. 2003). While it is clear that frequent flier miles can be exchanged for something of value (e.g., free travel), for example, time is less likely to be thought about in this way. Consequently, while consumers are familiar and well-practiced with trading money for goods and services, they are less accustomed to thinking about time in a transactional way (Soman 2001; DeVoe and Pfeffer 2007; Okada and Hoch 2004).

We suggest that the informal nature of time transactions should reduce awareness of time costs. Given money's natural association with exchange, exchange may draw attention to monetary costs. When thinking about which store to shop at, for example, consumers may naturally wonder which costs more. But this is less likely for time. Rather than categorizing

waiting in line as time "expenditure," consumers may simply see it as time passing. Consequently, exchange (and decisions more generally) should be less likely to call attention to time costs, leaving consumers less aware that they occur.

**P1c:** Time's tendency to be informally transacted should make time costs less likely to be noticed.

Summary

Taken together, we suggest the fact that time is intangible, spent passively, and informally transacted should all make time costs less likely to be noticed, reducing the chance that consumers become aware of them. This, in turn, should lead time costs to be neglected. When deciding which product to buy, for example, most consumers don't naturally think about whether different options will take longer to set up, use, or return (Zauberman 2003), which should contribute to those time costs being overlooked.

## INHERENT CHARACTERISTICS IMPACTING IMPORTANCE

Even if consumers were aware of time costs, we suggest that other aspects of time, as a resource, may still lead time costs to be neglected. Specifically, time tends to (1) have ambiguous value, (2) be endowed rather than earned, (3) be naturally replenished, and (4) be perceived as more available in the future. Further, time (5) is hard to budget for and 6) has limited penalties for overspending. All of these aspects should make time costs seem less important, and thus less likely to be incorporated into decision making.

**P2:** Inherent characteristics of time (i.e., it has ambiguous value, is endowed rather than earned, is naturally replenished, is perceived as more available in the future, is hard to budget for, and has limited penalties for overspending) should make time costs seem less important.

Note, by reducing perceived importance, these factors may also make consumers less aware of time costs, but we discuss them under importance because we suggest any effect they have on awareness should primarily occur *indirectly* through importance.

## Time has Ambiguous Value

The value of a resource can be more or less ambiguous. While the value of money is generally consistent (e.g., a dollar is a dollar, no matter what), for instance, time's value is more flexible, ambiguous, and context dependent. The value of an hour, for example, depends on how it can be used (Festjens and Janiszewski 2015).

We suggest this ambiguity, driven by time's lack of fungibility and storability (Leclerc et al. 1995; Okada and Hoch 2004; Soman 2001) should make time costs seem less important. One reason time's value is ambiguous is because time is not fungible. While each unit of money (e.g., a dollar) is perfectly interchangeable with another, for example, and retains its value across contexts (e.g., at a store vs. restaurant), each moment of time is unique and cannot be replaced (Leclerc et al. 1995; Spiller 2019). Consequently, time's value differs across contexts (Festjens and Janiszewski 2015). Spending time with family on Thanksgiving, for example, is not interchangeable with seeing them on an ordinary Thursday.

Another reason time's value is ambiguous is because time cannot be stored. While money can be accumulated and inventoried for later use, for example, time cannot (Okada and Hoch 2004). Time is inherently fleeting, and if not used in the moment, it passes by (Monga and Zor 2019). Consequently, time's value depends on its immediate utility (i.e., what it can be spent on

now). Shaving 15 minutes off a long commute, for example, is more valuable on a busier day when it can be immediately put to good use.[8]

We suggest that time's ambiguous value should make time costs seem less important. Not knowing how much a given chunk of time is worth should make the consequences of spending it harder to evaluate. While the consequences of spending $15 are fairly straightforward, for example, the consequences of spending 15 minutes are harder to assess and depend on many factors (e.g., Is this time needed? What can be accomplished with it?). Consequently, because attributes that are harder to evaluate tend to be given less weight and prioritized less in decisions (Hsee 1996), time's ambiguous value should make time costs seem less important to consider.

**P2a:** Time's ambiguous value should make time costs seem less important.

Time is Endowed, Not Earned

Beyond time's ambiguous value, we suggest that time being endowed, rather than earned, should also shape how important time costs seem. Resources vary in how they are acquired. While money is typically earned through effort or action (e.g., a job), for example, time is an endowed resource that consumers naturally possess without having to invest effort or act.

We suggest that this endowment should make time costs seem less important. People often infer value from effort (Bem 1967). Putting more effort or labor into something, for example, can increase its valuation (Norton, Mochon, and Ariely 2012). Indeed, because effort is

[8] Time's value is also ambiguous because time is not transferable. While money can be passed between people, for example, time cannot (Monga and Zor 2019). Consequently, rather than being directly transferable, time's value depends on its potential to free up other time.

costly (Inzlicht and Campbell 2022), free things tend to be devalued (Palmeira and Srivastava 2013). Similarly, many parents ask their kids to complete chores to "earn" an allowance because they worry giving them unearned money will lead them to value it less. Consequently, time being endowed may lead it to seem less valuable, and thus make time costs seem less important. When making tradeoffs between time and money, for example, consumers may prioritize saving "hard-earned cash" over unearned time, because time costs seem less important. Even consumers who can afford time-saving services (e.g., cleaners) often don't use them, because they don't want to pay money for things they can do for "free" (Whillans et al. 2017).

**P2b:** That time is endowed (vs. earned) should make time costs seem less important.

Time Naturally Replenishes

The fact that time naturally replenishes should also influence how important time costs seem. Resources differ in the degree to which they are automatically replenished. Once money is spent, for example, it doesn't simply reappear overnight. It requires specific actions or circumstances to be regained (e.g., earning additional money). Similarly, once physical space is used, it doesn't just regenerate. People need to do something (e.g., get rid of things) to gain more. Time, in contrast, naturally resets (Soster et al. 2010; Linville and Fischer 1991). Consumers get 24 hours a day, every day, so even once one day's time is used up, another will soon be available. Consequently, consumers regain time without any action required.

We suggest time's natural replenishment should make time costs seem less important. Knowing a resource will replenish should make it seem less valuable. If the eggs in one's fridge

automatically refilled every time they were used, for example, people wouldn't have to care about how many eggs they consume because they'd never run out. But if people only have a small, finite number of eggs to use for the week, then consuming them becomes more consequential (e.g., requiring an extra trip to the store or preparing meals without them). Consequently, because people infer value from effort and devalue things they receive for free (Bem 1967; Palmeira and Srivastava 2013), time's natural replenishment should make time seem less valuable, and thus time costs seem less important.

**P2c:** That time naturally replenishes should make time costs seem less important.

Time is More Available in the Future

We suggest that time seeming more available in the future should also influence how important time costs seem. Resource slack occurs when there are additional amounts of a resource left over that can be used for something else (Zauberman and Lynch 2005). A household that allocates $500 a month for groceries, for example, but only spends $300, will have $200 left to use for other things (e.g., entertainment).

But while consumers expect to have more resource slack in the future, this is particularly pronounced for time (Zauberman and Lynch 2005). Today's time-consuming activities are often seen as unique situations that will not recur (Zauberman and Lynch 2005), leading to (erroneous) beliefs that future time will be more available (Jhang and Lynch 2015). Unexpected traffic, for example, is seen as a one-off occurrence that is unlikely to happen again (Abreu, Memmi, and Etkin 2024). Consequently, people are more willing to agree to time-consuming commitments

(e.g., leading a seminar) in the future, because they (incorrectly) assume they will have more time, then, to fulfill them.

Further, as discussed, time *naturally replenishes*. After today's time is depleted, more will be available soon. Knowing that there will be time tomorrow may contribute to the general perception that time is more available in the future.

We suggest that perceiving time as more available in the future should make time costs seem less important. Expectations of future resource slack can influence current spending (Berman et al. 2016; Schanbacher, Faro, and Botti 2023). Expecting to have more money in the future than they actually will, for example, can lead people to underestimate the implications of their current spending (and spend more as a result). Consequently, expecting to have more time in the future should make time costs seem less consequential, and thus less important to consider.

**P2d:** That time seems more available in the future should make time costs seem less important.

Time is Hard to Budget For

We suggest that time being hard to budget for should also shape how important time costs seem. Setting budgets involves estimating future needs and allocating resources (Heath and Soll 1996; Cheema and Soman 2006; Sussman and Alter 2012). Consumers may forecast how much money will be needed for various types of expenses (e.g., rent and entertainment), for example, and allocate funds accordingly. For time, however, we suggest that both estimating expenses, and determining expense accounts, should be more challenging.

First, time costs should be hard to estimate. Whereas monetary costs tend to be known, consistent, and precise (Sussman and Alter 2012), time costs are often variable, imprecise, or not provided. When buying milk at the store, for example, the monetary cost (i.e., price) is provided and stays the same throughout the day, but the time required to check out is rarely provided, varies across trips, and depends on a host of other factors (e.g., time of day and day of week). This irregularity should make time costs uncertain (e.g., ranges rather than precise numbers), and thus hard to predict (Buehler, Griffin, and Ross 1994). Consequently, while consumers can estimate the monetary cost of a weekly supermarket trip, doing so for time is more challenging.

Second, relevant expense categories are also unclear. While distinguishing between discretionary and non-discretionary expenses is fairly straightforward for money (e.g., entertainment vs. rent), for example, it is less apparent for time (e.g., Is spending time with one's children a discretionary or non-discretionary expense?). Further, while money is thought about in specific categories (e.g., rent, entertainment, and groceries; Zhang et al. 2022), time categories tend to be very broad (e.g., work or non-work, Rajagopal and Rha 2009), narrow (e.g., individual activities; Tonietto and Malkoc 2016), or idiosyncratic (Poynor and Haws 2009). Such ambiguity in categorizing expenses may exacerbate challenges with accounting for time (Spiller 2019).[9]

We suggest that time being hard to budget for should make time costs seem less important. Budgeting establishes clear spending objectives, which helps consumers evaluate their expenditures (Heath and Soll 1996; Fernbach et al. 2015; Zhang et al. 2022). If someone is considering buying concert tickets for $80, for example, having an entertainment budget makes it

[9] Time being less quantifiable, as discussed, and time expenditures being harder to track may also contribute to difficulty budgeting for time. Further, consumers may perceive less of a need to budget for time in the first place. Budgets are created in response to constraints (Fernbach et al. 2015; Spiller 2011), but time replenishes daily (Okada and Hoch 2004; Soster et al. 2010), and demands on time tend to be underestimated (Buehler et al. 1994), so at least in prospect, time may not seem as consistently constrained. Budgeting also occurs in response to awareness of interdependent expenditures (Fernbach et al. 2015; Spiller 2011), but because time is more flexible and malleable, consumers may underestimate how the time devoted to one activity impacts availability for others.

easier to judge the impact of that expense (e.g., on remaining funds). Likewise, if someone is considering shopping at a further away store, having an errands budget (e.g., 30 minutes) would make it easier to judge the impact of the extra travel time (i.e., on time for other errands). Consequently, by making salient benchmarks less available, difficulties budgeting for time should make time costs seem less consequential, and thus seem less important to consider.

**P2e:** Time being hard to budget for should make time costs seem less important.

Limited Penalties for Overspending

Finally, we suggest that limited penalties for overspending time should affect how important time costs seem. For some resources, overspending has clear repercussions. Overspending money, for example, means a transaction won't go through, and overspending energy at the beginning of a long run can make it difficult to get back home. The negative consequences of overspending time, in contrast, are typically smaller, if they exist at all. If shopping takes five minutes longer than expected, nothing usually happens as a result. In fact, there may only be an immediate consequence to overspending time if someone plans something right after, and even then, the negative impact is usually minor (i.e., being a little late).

We suggest that such limited penalties for overspending time should make time costs seem less important. Penalties for overspending make spending decisions more consequential. Knowing that a credit card will be declined if the credit limit is exceeded, for example, makes the consequences of spending money more readily apparent. The lack of substantial penalties for

overspending time should have the opposite effect. It should make time costs seem less consequential, which, in turn, should make them seem less important to consider.

**P2f:** Limited penalties for overspending time should make time costs seem less important.

Summary

Taken together, we suggest the fact that time has ambiguous value, is endowed rather than earned, is naturally replenished, is perceived to be more available in the future, is difficult to budget for, and has limited penalties for overspending, should all make time costs seem less important—either by making time itself seem less valuable, or by making time costs seem less consequential. Consequently, when deciding which product to buy, or service to use, consumers may see the time implications as less important to consider, leading them to neglect those time costs and spend time in less satisfying ways.

## CONTEXTUAL FACTORS IN TIME COST NEGLECT

While inherent characteristics of time may reduce awareness of time costs, and make them seem less important, we suggest that contextual factors, as well as individual and cultural differences, can shift these outcomes. Given contextual factors more readily lend themselves to potential interventions, we focus attention there, and briefly discuss related individual

differences. We present a detailed analysis of how additional personal and cultural factors relate to the framework in Appendix Table 1, following References.[10]

## CONTEXTUAL FACTORS IMPACTING AWARENESS

Certain contextual factors should make time costs more noticeable. Specifically, we propose that (1) time costs are more likely to be noticed when they are explicitly provided, and even when they are not provided, we propose that (2) direct prompting, and (3) related cues, such as reminders of time passing, can also increase awareness.

**P3:** Certain contextual factors (i.e., explicit provision of time costs, direct prompting, and related cues) can make consumers more aware of time costs.

Through increasing awareness, these factors may also make time costs seem more important, but we discuss them under awareness because we suggest that any impact they have on importance should primarily occur *indirectly* through awareness.

### Explicit Provision

[10] Some individuals, for example, are more prone to viewing time in the context of their entire lives (vs. hours and minutes; Bergstrom et al. 2024), which might make them *less* aware of time costs and see them as *less* important. Individuals can also be more prone to scheduling tasks in relation to the clock (vs. other events; Avnet and Sellier 2011), which might make them *more* aware of time costs and see them as more important. Further, some cultures are more time-oriented overall (Bellezza, Paharia, and Keinan 2017; Etkin and Memmi 2021), which may increase awareness and importance of time costs.

Explicitly providing time costs should make consumers more aware of them. While other resource costs (e.g., space or money) are often explicitly provided, time costs are not. Product dimensions (e.g., the height of a fridge) and prices are often specified, for example, but the time required to navigate the store is not, which, as discussed, should reduce awareness of time costs.

In certain contexts, however, time costs are explicitly provided. Rideshare applications like Uber often display exact pickup times (e.g., 5 minutes), and food delivery services like DoorDash estimate delivery times (e.g., 30-45 minutes).

Such explicit provision should boost awareness. Seeing an estimated delivery time, for example, makes the time cost of ordering food more apparent, and being told that the checkout line will take 10 minutes should make consumers aware of the time cost of shopping there.[11]

**P3a:** Explicitly providing time costs should increase awareness.

Direct Prompting

Directly prompting consumers to consider time costs should also raise awareness. Even when time costs are not explicitly provided, contextual factors can encourage consumers to think about or estimate them. Prompting consumers to think about the time costs of common household chores (e.g., cooking or cleaning), for example, should encourage people to estimate them and make the fact that time is being spent more apparent. Indeed, ads for freelance labor platforms (e.g., TaskRabbit) often emphasize time spent on chores to encourage using their

[11] Though one might wonder whether explicit provision (and prompting) increase awareness through impacting the inherent characteristics of time discussed previously, that does not seem to be the case. Though Uber saying the wait time is 10 minutes may make time seem more tangible, actively spent, or formally transacted, for example, these seem like consequences of its impact on awareness, rather than drivers of it.

services. Similarly, elicitation strategies that prompt consumers to estimate the value of their time (e.g., asking the maximum time they would spend for a set amount of money; Monga et al. 2017) should make the value of time, and thus the cost of spending it, more apparent.

**P3b:** Direct prompts or reminders to consider time costs should increase awareness.

Time-Related Cues

Even beyond explicit provision or direct prompting, we suggest that waiting cues, and time-related cues more generally, should also make time costs more apparent. Stimuli in the environment can activate related concepts in consumer minds (Berger and Heath 2005). Hearing "peanut butter and…," for example, may remind someone of jelly, and thinking of Halloween may remind them of the color orange (Collins and Loftus 1975).

Time-related cues should have a similar effect. Stimuli related to waiting (e.g., slow moving traffic or long store lines) should suggest that things will take a while, and time-related cues (e.g., a ticking clock) should activate the concept of time.

Consequently, time-related cues should increase awareness of time costs. While time is inherently *intangible*, time-related cues should make time costs more visible. Long lines at popular stores, for example, should make the time required to shop there easier to notice. Similarly, seeing cars drive past in the express lane on the freeway should make it more apparent that the regular lanes take additional time.

**P3c:** Time-related cues should increase awareness of time costs.

Summary

Overall, explicit provision, direct prompting, and related cues should all make time costs more likely to be noticed, increasing the chance that consumers become aware of them, and thus incorporate them into decision making.

## CONTEXTUAL FACTORS IMPACTING IMPORTANCE

As discussed, while raising awareness should make time costs *less* likely to be neglected, it does not guarantee they will not be overlooked. Other inherent characteristics and contextual factors may still play a role. In particular, we suggest that (1) specialness, (2) acquisition effort, (3) evaluation mode, (4) cost timing, and (5) cost magnitude are all contextual factors that should make time costs seem more important, which should make them more likely to be considered (i.e., incorporated into decision making).

**P4:** Certain contextual factors (i.e., specialness, acquisition effort, evaluation mode, cost timing, and cost magnitude) can make time costs seem more important.

By increasing importance, these factors may also increase awareness of time costs, but we discuss them under importance because we suggest any effect they have on awareness should primarily occur *indirectly* through importance. When discussing each factor, we also highlight how it relates to inherent characteristics of time discussed previously (in italics).

Specialness

First, we suggest that contexts where time is "special" should influence how important time costs seem. Special time refers to periods of significance or importance, such as holidays (e.g., Thanksgiving), life milestones (e.g., birthdays; Alter and Hershfield 2014), or other events (e.g., the start of a new year; Dai, Milkman, and Riis 2014). Compared to a typical Thursday, for example, most Americans see Thanksgiving as more special. They take off work, see family, and engage in traditions. Similarly, one's birthday is usually more special than other days that week.

We suggest that time seeming special should make time costs seem more important. While time tends to have *ambiguous value,* when time is special, its value should become more apparent (Zauberman, Ratner, and Kim 2009). While the value of an hour on a regular Sunday may be unclear, for instance, the value of an hour on Mother's Day is more apparent (and seems greater). Indeed, employers often pay employees more to work on holidays, recognizing the greater value of that special time.

Similarly, while time usually *naturally replenishes*, special periods are often finite and temporally bounded. Mother's Day, for example, only includes a small number of hours. This should make time seem scarcer, and thus more valuable (Shah et al. 2015).

Consequently, contexts that make time seem special should make time costs seem more important (and thus more likely to be considered). While consumers might normally neglect wait time when deciding where to go to dinner, for example, on Mother's Day such time costs may be viewed as more important, and thus be incorporated more into their restaurant choice.

**P4a:** Time seeming "special" should make time costs seem more important.

Second, we suggest that contexts where time is more effortful to acquire should influence how important time costs seem. As discussed, time is naturally *endowed*, and is typically available without needing to expend effort or act to acquire it. But in certain situations, consumers expend effort to "earn" time. Some companies allow employees to work to earn paid time off or leave early, and people may decide to complete a task ahead of schedule to avoid working during what was supposed to be time off (e.g., the weekend).

We suggest expending effort to acquire time should make time costs seem more important. Exerting effort increases valuation (Norton et al. 2012). Whereas consumers tend to devalue things that are free (Palmeira and Srivastava 2013), for example, they value things they work for more highly (Bem 1967; Inzlicht and Campbell 2022). Consequently, while time tends to have *ambiguous value*, exerting effort to acquire time should increase time's value. Thinking about the weekend as something one earned, for example, rather than something that is automatically provided, should make people value that time more.

Similarly, while time usually *naturally replenishes* (Soster et al. 2010; Linville and Fischer 1991), expending effort to acquire time should make time seem less available. After all, it wasn't just there, it required action to get. This, too, should make time seem more valuable.

Consequently, contexts that make time seem more effortful to acquire should make time costs seem more important (and thus more likely to be considered). While consumers might usually be inclined to do chores or catch up on work over the weekend, for example, seeing the weekend as time one has earned (e.g., a "vacation"; West, Mogilner, and DeVoe 2021) should encourage people to strive to spend that time in more satisfying ways.

**P4b:** Expending effort to acquire time should make time costs seem more important.

Evaluation Mode

Third, we suggest that evaluation mode (i.e., whether choice options are evaluated separately or jointly; Hsee 1996) should influence how important time costs seem. As discussed, attributes that are harder to evaluate are weighted less in decisions (Hsee 1996). Knowing a cookbook has 200 recipes, for example, is harder to evaluate than the fact that it is highly rated, so recipe number would have less impact on choice. Comparing options, however, can make harder-to-evaluate attributes easier to assess (Hsee 1996; Hsee et al.1999). Those two hundred recipes become much more informative, for example, when compared to a cookbook with only 100. Consequently, joint (vs. separate) evaluation allows harder to evaluate dimensions to have greater impact on decisions.

Building on this, we suggest that joint (vs. separate) evaluation should make time costs seem more important. While *time's ambiguous value* makes time costs naturally hard to evaluate (Okada and Hoch 2004; DeVoe and Pfeffer 2007), joint evaluation should make this easier to do. The wait time to be seated at a restaurant is hard to evaluate in isolation (e.g., is 20 minutes a lot or a little), for example, but joint evaluation should facilitate evaluation (e.g., the 20-minute wait at restaurant A is greater than the 15-minute wait at restaurant B). Consequently, by making the time implications of a decision easier to evaluate, joint evaluation should make time costs seem more important (and thus, more likely to be considered).

Similarly, while time being *difficult to budget for* makes time expenditures naturally hard to assess (i.e., because people lack benchmarks to evaluate spending), joint evaluation provides

relevant context for such judgments. This, too, should make time costs seem more consequential, and thus more important to consider.

**P4c:** Joint (vs. single) evaluation should make time costs seem more important.

Cost Timing

Fourth, we suggest that w*hen* time costs are incurred should affect how important they seem. The temporal distance between the decision to spend a resource (i.e., purchase something) and the actual transaction (i.e., pay for it) can vary (Soman 1998). When paying with cash, for example, purchase and payment happen right after one another. In other situations, however, the temporal distance is larger. Credit cards, for example, allow consumers to purchase today but pay later, delaying when monetary costs are incurred. Further, because temporally distant events tend to feel more abstract (Ebert and Prelec 2007; Trope and Liberman 2010; Trope et al. 2007), increasing the time between purchase and payment makes payment less psychologically "painful" (Prelec and Loewenstein 1998; Zauberman 2003).

We suggest that shrinking such temporal distance should make time costs seem more important. While time costs may be naturally hard to evaluate (e.g., because time tends to have *ambiguous value*), when payment is more proximal, time costs should seem more consequential (Ebert and Prelec 2007; Zauberman 2003). The prospect of spending 40 minutes re-packaging and returning clothes, for example, may seem trivial when that time would be paid in the future, but more significant if it had to be paid today. Because cost dimensions (i.e., feasibility

concerns) have greater impact on more proximal decisions (Liberman and Trope 1998), when paying in time is more imminent, time costs should seem more important to consider.

Further, while time *seeming more available in the future* should contribute to future time payments seeming particularly unimpactful (because there's more time available to spend), when paying in time is more imminent, such influence should be reduced. Consequently, by making time costs seem more consequential, contexts that make time costs seem more temporally proximal should make them seem more important (and thus, more likely to be considered).

**P4d:** Greater temporal proximity should make time costs seem more important.

Cost Magnitude

Finally, we suggest that time costs' magnitude should also influence how important they seem. Time costs can be larger or smaller. The wait time to speak to a customer service agent, for example, can be longer or shorter, and it can take more or less time to search for a gift.

We suggest that increasing time costs' magnitude should make time costs seem more important. While time tends to have *ambiguous value*, larger time costs should, not surprisingly, be perceived as more consequential. Spending 15 minutes searching for a gift may seem inconsequential, for example, but spending an entire afternoon doing so would not. The more time involved, the more consequential spending that time should seem, and the more important time costs should be to the decision.

Further, magnitude judgments are inherently subjective. The same expense can seem more or less costly, depending on what it is compared to (Kahneman and Tversky 1979;

Morewedge, Holtzman, and Epley 2007). An hour's drive to an event, for example, may seem more substantial when the event lasts 30 minutes compared to three hours. Consequently, comparisons that make time costs seem *subjectively* larger (vs. smaller) should make them seem more important (and thus, more likely to be considered).

**P4e:** Greater subjective magnitude should make time costs seem more important.

Summary

Overall, specialness, acquisition effort, evaluation mode, cost timing, and cost magnitude should all make time costs seem more important—either by making time itself seem more valuable, or by making time costs seem more consequential. Consequently, these contextual factors should make time costs more likely to be considered.

## CONTEXTUAL (AND INDIVIDUAL) FACTORS IMPACTING AWARENESS AND IMPORTANCE

In addition to the factors already discussed, we suggest that (1) perceived time constraints, (2) alternative time use salience, and (3) viewing time as tradeable for other resources are contextual and individual factors that increase *both* awareness of time costs and how important they seem.

**P5:** Certain contextual (and individual) factors (i.e., that increase perceived time constraints, make alternative uses of time more salient, or frame time as tradeable for other resources) can raise awareness of time costs and make them seem more important.

We discuss these factors here because we suggest they *directly* affect both awareness and importance, rather than their effect on one outcome depending on the other. As in prior sections, when discussing each factor, we also note how it relates to time's inherent characteristics (highlighted in italics).

## Perceived Time Constraints

Constraints arise when consumers lack the resources to accomplish specific goals or tasks (Cannon, Goldsmith, and Roux 2024). Constraints can be objective (e.g., not having the money to purchase a desired thing) or subjective (e.g., feeling less able to do desired things than one's wealthier friends; Dias, Sharma, and Fitzsimons 2022; Etkin et al. 2015).

We suggest that perceived time constraints should increase awareness of time costs. Constraints direct attention (Shah, Mullainathan, and Shafir 2012; Spiller 2011). When people feel more constrained, they notice their spending more. Compared to the beginning of a budgetary period, when money is more abundant, for example, expenses become more noticeable towards the end, when there's less available (Soster et al. 2010). Consequently, contexts that make consumers feel time constrained should draw attention to time costs, making

consumers more aware of them. Someone who's busy at the office, for example, should be more likely to notice that the elevator is slow, or that it's taking a while to get lunch.

Beyond boosting awareness, we suggest that perceived constraint should also make time costs seem more important. In addition to directing attention, scarcity also increases value (Shah et al. 2012; Shah et al. 2015). Scarce resources are valued more than abundant ones, and as a result, scarcity prompts more careful consideration of spending (Spiller 2011). Consequently, while time tends to have *ambiguous value*, contexts that make consumers feel time constrained should make time seem more valuable, and thus time costs seem more important. Rather than picking the cheapest or tastiest place to eat, for example, someone who is feeling busy at the office might just opt for the place with the quickest service to avoid spending more time.

**P5a:** Contexts that make consumers feel time constrained should raise awareness of time costs and make them seem more important.

Similar effects should occur for individuals who are chronically time constrained. Consumers with demanding jobs, who face persistent goal conflicts (e.g., balancing work and family; Etkin et al. 2015), or who possess certain traits (e.g., chronic procrastinators), for example, may chronically feel time poor, and we suggest that such chronic perceptions should raise awareness of time costs and make them seem more important. Investment bankers who regularly work 100-hour weeks, for example, or working parents with young children, may be more aware of time costs, and more likely to see them as important. Similarly, given time is perceived to pass more quickly with age (Bejan 2019), older people may feel more chronically time constrained, which should increase the awareness and importance of time costs.

Alternative Time Use Salience

Contextual factors that make alternative time uses more salient should also shape awareness and importance of time costs. Stimuli can draw attention to the different ways time could be used. Seeing someone else exercising while you are heading to dinner, for example, or explicit suggestions to consider doing something else instead, should make alternative time allocations more salient.

We suggest that cues like these should increase awareness of time costs. While the fact that time is *intangible* and *passively spent* makes time costs difficult to notice or see, cues that suggest people could spend their time differently should make them more aware of such expenditures (Spiller 2019). Scrolling through social media can lead people to lose track of time, for example, but receiving notifications about work obligations should make them more aware that time is being spent.

We suggest that the salience of alternative time uses should also make time costs seem more important. While consumers often fail to spontaneously consider alternative uses of their resources (i.e., opportunity costs; Frederick et al. 2009; Okada and Hoch 2004; Spiller 2011, 2019), explicitly prompting them can encourage consideration. Highlighting alternative uses of one's money, for example, can encourage thoughts about other ways to spend it (Frederick et al. 2009; Bartels and Urminsky 2015). Consequently, while time tends to have *ambiguous value*, contexts that make alternative time uses more salient should make time's value more apparent, and thus time costs seem more important. People may be less willing to wait in a long line, for example, when the situation prompts them to consider other uses of that time (e.g., socializing).

**P5b:** Contexts that make alternative time uses (i.e., opportunity costs) more salient should increase awareness of time costs and make them seem more important.

Similar effects should occur among individuals for whom alternative time uses are chronically accessible. Consumers with high propensities to plan (Spiller 2011; Lynch et al. 2010), for example, or in professions with perpetual time requests (e.g., TaskRabbit freelancers, who could always offer ad hoc services) should often consider how to allocate their time. This should enhance the awareness and importance of time costs, and encourage consideration. Planners, for example, often consider potential future time allocations, which should make them more aware of alternative time uses, and more careful about how they spend their time. Similarly, just as situational cues may make people more aware of what they could do instead of waiting in line, chronic accessibility of alternative options may have similar effects.

Trading Time for Other Resources

Finally, we suggest that contexts that make time seem tradeable for other resources should also shape awareness and importance of time costs. Contexts where one sells their time (e.g., gets paid by the hour or bills in certain intervals), for example, can lead people to see time as tradeable for money (DeVoe and Pfeffer 2007; Okada and Hoch 2004).

We suggest that seeing time as tradeable for other resources should increase awareness of time costs. While time tends to be *intangible* and *passively spent*, for example, using time to acquire other resources should give time expenditures more attention. Putting a dollar value on one's time, for example, should make time more quantifiable and encourage more active

decisions about how to spend it. Similarly, while time tends to be *informally transacted*, when it can be used to acquire other resources, its instrumental value becomes more apparent (DeVoe, Lee, and Pfeffer 2010), and people should become more cognizant of what they are using their time for. This, too, should encourage greater awareness of time costs.

We suggest that seeing time as tradeable for other resources should also make time costs seem more important. While time's *ambiguous value* usually makes time costs difficult to evaluate (DeVoe and Pfeffer 2007; Okada and Hoch 2004), when time can be used to acquire other resources, time costs should become more consequential. Being paid by the hour, for example, or devising an hourly rate for one's time, should make the implications of taking a break from work to run personal errands more apparent (and costlier). Consequently, contexts that make time seem tradeable for other resources should make spending time seem more consequential, and thus time costs seem more important. When deciding whether to commute to the office or work from home, for example, consumers who recognize that the extra time spent could be used to earn additional money should be more likely to work from home.

**P5c:** Contexts that make time seem tradeable for other resources should increase awareness of time costs and make them seem more important.

Similar effects should occur among individuals who chronically see time as tradeable for other resources. Professionals who are paid by the hour (e.g., consultants or lawyers), for example, or gig-economy workers who become accustomed to being paid by the minute (e.g., online survey panelists or rideshare drivers) should more spontaneously see their time as a medium of exchange (DeVoe and Pfeffer 2007; DeVoe et al. 2010), which should enhance

awareness of time costs and make them seem more important. Similarly, people who see time as tradeable for happiness (Faraji-Rad and Lee 2022) or meaning (Rudd et al. 2019) should be more aware of time costs and see them as more important, encouraging consideration.

## GENERAL DISCUSSION

Time is one of our most precious resources and plays a crucial role in every aspect of consumption. But when it comes to making decisions, consumers often seem to neglect how their choices will impact their time. While previous research has explored the consequences of suboptimal time allocation or undervaluing time (Hershfield et al. 2016; Whillans et al. 2016; Whillans et al. 2017), it is less clear *when* and *why* consumers neglect time costs, and what might encourage people to incorporate them in their decision making.

This paper develops a unifying conceptual model to better understand "time cost neglect" and shed light on when and why consumers neglect the time implications of their decisions. Integrating work from disparate disciplinary perspectives, the framework proposes that inherent characteristics of time lead time costs to be neglected, but that certain contextual (and individual and cultural) factors make them more likely to be considered. As a result, the framework is meant to be generative for future researchers, providing specific testable propositions and paving the way for subsequent empirical investigations of time costs' role in consumer behavior.

### Theoretical Contributions

This work makes several important contributions. First, it helps explain an important disconnect. As discussed, despite time's importance for happiness and well-being, consumers often struggle to spend time well. They often feel pressed for time (Etkin et al. 2015; Hershfield et al. 2016; Leclerc et al. 1995; Monga et al. 2017), wish they had more of it (Sharif et al. 2021), and say that they want to spend it in more satisfying ways (Gilovich and Medvec 1995; Roese and Summerville 2005). But when it comes to their actual choices, consumers don't always behave like time is valuable. Our framework helps explain why. Specifically, by delineating key characteristics of time as a resource, it sheds light on the underlying psychological drivers that contribute to time cost neglect, and thus, this inconsistency.

Second, the framework sheds light on the interplay between time and decision making. While extensive research has examined money (Cannon et al. 2019; Hamilton et al. 2019), time has received less attention (Leclerc et al. 1995). Further, work that has studied time has largely focused on time's impact on decisions (e.g., how feeling rushed might impact choice; Dhar and Nowlis 1999). The current work considers the opposite: how decisions impact time. Our perspective highlights that time use is also an output, or result, of decision making, and that failing to consider time costs when decisions are made can lead to less satisfying time expenditures. Given that our lives are the sum of our minutes, these misallocations can have substantial implications for consumer well-being.

Third, by integrating disparate prior findings, and combining them with new theorizing, the framework provides a unifying conceptualization underlying time cost neglect. While some research has looked at time in relation to money (Leclerc et al. 1995; Mogilner and Aaker 2009; Okada and Hoch 2004; Soman 2001; Soster et al. 2010; Zauberman and Lynch 2005), as discussed, time is also important in its own right. Further, although consumer behavior work on

time has revealed important insights (Festjens and Janiszewski 2015; Graham 1981; Jacoby, Szybillo, and Berning 1976), it has been rather disconnected. By focusing on time as a resource, integrating disparate streams of work, and organizing time's inherent characteristics into aspects that affect awareness and importance, we shed light on why time costs are neglected, and how marketplace actors can encourage their consideration. In doing so, this work also puts more structure around the idea of time as a resource, deepening what it means to think about time in this way and the implications for consumer behavior.

## Practical Implications

The framework can be applied to help various marketplace actors. Given time costs are often neglected, for example, companies that make time saving products and services should think carefully about how to frame their value propositions. While services that provide faster security lines at the airport (e.g., CLEAR) often talk about "avoiding the lines," making *alternative time uses* more salient might be more effective. Encouraging consumers to consider what they would do with the extra time (e.g., "what would you do with 15 extra minutes?") should make the time seem more valuable, and encourage enrollment.

Highlighting *acquisition effort* may have similar effects. Encouraging consumers to think about how hard they have worked to earn their free time should make them value it more and become more willing to outsource time intensive tasks. While selling a home by-owner may save money, for example, reminding consumers of the effort expended to acquire the time this would take should make them more willing to pay the real estate agent commission.

The framework also has implications for interpersonal relationships. Whether explicitly or not, consumers often give time to others (Donnelly et al. 2021). Rather than both parents taking care of young children over the weekend, for example, one may offer to take them to a park to give their spouse time to do other things. But while this time "gift" may be well-intended, making an active choice to transfer time to one's partner could potentially change how that time is perceived (e.g., as more *formally transacted*, as having less *ambiguous value*, or as more *special*), creating unintended conflict. Givers may value the time more, for example, and as a result, may feel that time costs should factor more prominently in recipient's decisions. Consequently, givers may care a lot about how the recipient spends the time, and whether it was spent in a way that they personally find valuable.

The framework can also be leveraged to improve consumer productivity. Interventions that make *future time seem less available*, for example, should help consumers better manage their time. When looking out weeks, or months, into the future, one's calendar is often empty, which may contribute to the belief that future time is available. But many activities (e.g., going to the gym or picking up kids from school) repeat every week. Turning these seemingly one-off events into reoccurring calendar elements may help people realize that future time is not, in fact, more available, and make time costs seem more important to consider.

The same may hold for backfilling past time. While time is often *spent passively*, and is *difficult to budget for* in advance, going back and cataloging (i.e., booking) what was done should make consumers more aware of how the time was spent. This, in turn, should increase awareness of time costs, and encourage their consideration.

Further, while the fact that time can't be stored means that it can't be accumulated as easily as other resources (Okada and Hoch 2004; Soman 2001), it is possible to aggregate time

savings (e.g., by rearranging certain activities, or doing more of something now to free up time later). Encouraging consumers to consider what they could do with a larger block of time (e.g., 30 minutes or an hour) may encourage them to think about how to "create" that amount.

## Future Directions

The framework also suggests directions for future empirical research.

*Nuances in Time Cost Neglect.* While the framework laid out factors that might encourage (or discourage) time cost neglect, many nuances remain to be explored. Some inherent characteristics of time, for example, may be more impactful than others. Time's *intangibility,* for example, might contribute more to lower awareness of time costs than the fact that time tends to be *passively spent*, and time's *ambiguous value* may do more to make time costs seem unimportant than *perceiving time as more available in the future*. Empirical tests of our conceptual model are an important next step toward better understanding how to help consumers spend time in more satisfying ways.

Further, while the framework treats factors as independent, in some cases they may be interdependent, or interact. The presence of one factor, for example, may amplify another. When people feel *time constrained,* for instance, they may also be more likely to think about *alternative uses* for their time, and vice versa. Consequently, these factors may work together to increase awareness and importance of time costs. The presence of one factor may also mitigate another. Thinking about *time as tradeable for other resources,* for example, should make time seem less *informally transacted*, attenuating the latter's impact on awareness of time costs. See Appendix Table 2, following References, for more examples.

Aspects of the framework may also interact with the decision context. Decisions that involve direct tradeoffs between time costs and other factors (e.g., waiting longer for a rideshare to save money), for example, may make consumers more aware of time costs, whereas contexts that lack such direct tradeoffs (e.g., spending more or less time searching for a gift), would not. Regardless of direct tradeoffs, though, the contextual factors discussed (e.g., specialness and acquisition effort) should make time costs seem more important (and thus more likely to be considered). Future work might explore how aspects of the decision environment shape how various factors in the framework influence time cost neglect.

Finally, while greater time cost consideration is often beneficial, as noted, there may also be downsides. When someone has already committed to something, for example, and cannot change plans, highlighting the time costs might make them unhappier. Similarly, showing long wait times at the airport to someone who is financially constrained might make them more resentful of an expensive program like CLEAR, and less inclined to try it. Future research might examine when increasing awareness of time costs, and making them seem more important, may undermine consumer welfare.

*Understanding Other Resources.* Future work might leverage the framework to better understand when and why other resources (e.g., money, physical space, or mental effort) are more or less likely to be considered in consumer decisions. Many aspects that naturally reduce awareness and importance of time costs, for example, are less present for money. Money is *more tangible* than time, is *spent more actively*, and is *transacted more formally* (Jacoby et al. 1976; Okada and Hoch 2004). Money's value is also *less ambiguous*, and money is more likely to seem

*earned rather than endowed*. Consequently, in addition to explaining why time costs are neglected, the framework sheds light on why monetary costs may be more focal.[12]

As discussed, though, consumers pay for things in more than just time and money. Buying in bulk requires physical space, for example, and researching choice options requires mental effort. While a couple of recent marketing papers (Cannon et al. 2024; Dorsch, Törnblom, and Kazemi 2016; Shaddy and Shah 2018) have begun to explore these additional resources, given consumers use them as means to achieve things of value, they deserve further attention. By delineating factors that shape time cost neglect, our framework provides a useful foundation to begin to study other resources in greater detail.

Mental effort, for example, has much in common with time. It is *intangible* (i.e., can't be seen or touched), *passively spent* (i.e., spending occurs without explicit intent), and *informally transacted* (i.e., there are no formal systems for exchange). Further, mental effort has *ambiguous value* (i.e., it is non-fungible and non-storable), is *endowed not earned*, and is *hard to budget for*. Consequently, our framework would suggest that consumers should neglect mental effort costs, potentially even more than time ones. In addition, the framework suggests that contextual factors like *related cues* (e.g., something being called "complex"), or the salience of *alternative uses* (e.g., an upcoming meeting that requires lots of mental bandwidth) may increase awareness of mental effort costs, and thus make them more likely to be considered.

Physical space, however, may be more naturally considered. It is *more tangible*, has *more consistent value* (i.e., is storable), and costs are often *explicitly provided* (e.g., descriptions of

[12] That said, the framework implies that changes in technology may reduce awareness of monetary costs. Electronic payment methods (e.g., Apple Pay), along with other apps and services (e.g., TikTok's new Shop feature), make money *less tangible*, and in requiring fewer steps to pay, make spending money more *passive* and *informal*. Together, these aspects may make monetary costs less noticeable, and potentially less likely to be considered.

sofas often come with measurements). Consequently, consumers may be more aware of physical space costs, and more likely to incorporate them into their decisions.

Further, because time is more interconnected more with certain resources (e.g., attention) than others (e.g., physical space), factors that increase awareness and importance of related resource costs may have corresponding effects for time costs. Paying attention to, or expending energy on, something requires spending time, for example, so factors that make consumers more aware of attention or energy costs (or perceive them as more important) may likewise increase awareness (or importance) of time costs. Future research might explore whether understanding of time costs might be enhanced when taking other resources into account.

The framework also has implications for understanding how consumers make tradeoffs *between* resources. Valuing one resource more often means valuing another one less. The framework sheds light on what it is about certain resources (i.e., their dimensions, along with contextual factors) that makes them more or less likely to be considered. Resources that seem *more tangible, actively spent*, and *earned*, for example, should be prioritized relative to ones that are less so. Similarly, interventions that boost dimensions that increase awareness and importance should make a given resource more focal.

*Impact of Technology.* Finally, the framework sheds light on how technology may impact awareness and importance of time costs. First, at the most basic level, by making time more *tangible* (i.e., visible), time tracking technologies should make time costs more noticeable. Smartwatches that track sleep and smartphones that track app use should make it easier for consumers to see how much time they are spending on those activities. Like credit card statements for money, making time expenditures more visible should increase awareness of time costs, and make them more likely to be considered.

Second, time tracking and other technologies should facilitate *time budgeting*. Many technologies don't just track time, they categorize it. Weekly screen time reports, for example, group things like Facebook and Messages into a Social category, and Mail and Calendar into a Productivity category. Consequently, while it may usually be difficult to identify appropriate categories for time, and to assign time expenditures to them, technologies that categorize tracked time should make this easier to do, making time costs seem more consequential and thus more important to consider.

Other features should have similar effects. Apps and smartphone operating systems, for example, allow users to set usage limits (e.g., up to 90 minutes a day on TikTok), monitor spending (e.g., how many minutes spent on a given day), and receive feedback or consequences when spending too much (e.g., getting locked out of the app). Making it easier to *forecast and track time expenditures*, and creating stronger *penalties for overspending*, should also make time costs more likely to be incorporated into decision making.

Third, specific features of technologies may also impact awareness and importance of time costs. Time consuming media, for example, can be spent more or less *passively*. Reading a physical newspaper requires turning pages to keep reading, for example, but the next TV show often starts without any action required. Given time's *passive spending* contributes to time costs not being noticed, features that encourage more active spending (i.e., require action, like clicking a "next" button) should increase awareness and make time costs more likely to be considered.

## Conclusion

Consumption inevitably involves time. Whether choosing products, using services, or having experiences, every aspect of consumer behavior takes time to pursue. But while consumers say they value their time (Hershfield et al. 2016; Whillans et al. 2017) and aspire to spend it in satisfying ways (Sharif et al. 2021), their actual behavior often seems inconsistent.

This work provides a conceptual framework to explain when and why consumers are more or less likely to neglect how consumption choices and actions impact their time. By reviewing existing research, and combining it with new insights, we shed light on specific inherent characteristics of time that lead time costs to be neglected, contextual factors that should make them more focal, and implications for consumers, companies, and other marketplace actors that wish to support effective time use and consumer well-being

# APPENDIX

## PILOT SURVEY:
## TIME COST NEGLECT IN DECISION MAKING

The pilot survey had two goals. First, we wanted to examine how often consumers mention considering time costs in their decisions. Second, we wanted to examine time costs' relative importance in decision making. Consequently, we asked participants to write down a decision they had made recently, describe the factors they considered when making that decision, and then rate the importance of various factors in driving that decision.

### Design and Method

We aimed to recruit one hundred US participants on Prolific (pre-registration: https://aspredicted.org/HL7_G13). One hundred twenty-one Prolific workers signed up to participate. Of these, 76.0% passed the pre-registered exclusion criteria (i.e., they passed the English fluency tests and did not provide non-sensical answers to the open-response questions), leaving a sample of 92 (65.2% female, mean age = 37.1 years old). Participants were randomly assigned to consider a recent important decision or a recent generic one.[13]

First, all participants described a recent decision ("Please think about a decision you had to make recently. In the space provided, write a brief description of this decision."). Some

[13] We included this factor in our pilot survey design to show that even for relatively important decisions, consumers neglect time costs more than other factors. We did not pre-register nor have any expectations about differences between conditions; accordingly, our analyses focus on overall patterns.

participants were asked to describe an important decision (i.e., one that had a significant impact on their lives), and the rest simply described (any) recent decision.

Second, all participants wrote in at least two factors they considered when making their decision ("When making this decision, what factors or things did you consider?").

Third, they were shown six resource categories (i.e., monetary, time, emotional, social, physical, and mental costs) and asked to allocate 100 points among them based on how important each factor was in driving their decision ("Please distribute 100 among the categories below based on how important they were in your decision.").

Finally, participants considered the factors they wrote in previously, and noted whether each fell into any of the six resource categories ("Which of the following categories best describes the factor you listed above?"). They could also list it as falling into none of these.[14, 15]

## Results

*Frequency.* Out of 92 total participants, most (i.e., 68, or 73.9%) did *not* mention time costs as a factor in their decision. Among participants who recounted an important decision, 38 (out of 48) did not mention time costs; among those who recounted any recent decision, 30 (out of 44) did not mention time costs.

[14] For all resource categories, participants were coded as having considered a resource cost in their decision if any of the factors they mentioned belonged to that resource category. Participants whose factors didn't belong to either the time costs or monetary costs categories were coded as not having considered that resource in their decision.

[15] As pre-registered, participants' codings were manually checked by two independent graduate research assistants to ensure consistency with our definition of time costs (i.e., the time needed to do something). Disagreements were resolved by a third graduate research assistant. All research assistants were blind to the research propositions and conditions. We report the manually checked responses in the main text for accuracy; raw codings showed similar patterns.

For comparison, the majority of participants (i.e., 67.4% or 62 out of 92) mentioned monetary costs as a factor in their decision; 38 (out of 48) participants in the important decision condition and 24 (out of 44) in the any decision condition.

Put differently, while almost 75% of participants didn't consider time costs when making their decision, only about 30% didn't consider monetary costs. See Appendix Figure 1, following References.

*Relative importance.* In terms of relative importance, time costs were allocated an average of 13.6 (out of 100 total; *SD* = 14.4) points.[16] Notably, monetary costs were allocated nearly double this amount (*M* = 28.4 points, *SD* = 24.8).[17] See Appendix Figure 2, following References.

## Discussion

The pilot survey results show that time costs tend to be neglected when decisions are made. Out of the 92 US consumers surveyed, most (i.e., 73.9%) did not mention time costs as a relevant factor in a recent decision. Further, people were nearly twice as likely not to mention time costs as other factors like monetary ones.

Participants also viewed time costs as less important in their decisions. Compared to monetary costs, time costs were rated as about half as important (i.e., received about half as many points). Interestingly, this difference was even larger for more important decisions.

[16] Participants who recalled an important decision allocated time costs an average of 9.4 points (*SD* = 10.5); those who recalled any recent decision allocated time costs an average of 18.1 (*SD* =16.6).
[17] Participants who recalled an important decision allocated monetary costs an average of 26.7 points (*SD* = 23.2); those who recalled any recent decision allocated monetary costs an average of 30.3 points (*SD* = 26.6).

Together, these results support our contention that time costs tend to be neglected in decision making, both because consumers tend not to be aware of time costs, and even when they are considered, they are seen as less important.

## REFERENCES


Aaker, Jennifer L., Melanie Rudd, and Cassie Mogilner (2011), "If Money Does Not Make You Happy, Consider Time," *Journal of Consumer Psychology*, 21(2), 126–30.

Abreu, Luis, Sarah Memmi, and Jordan Etkin (2024), "Perceiving Greater Variety among Past Conflicts with a Focal Goal Reduces Expected Goal Conflict," *Journal of Personality and Social Psychology*, 126(3), 413-30.

Alter, Adam L. and Hal E. Hershfield (2014), "People Search for Meaning When They Approach a New Decade in Chronological Age," *Proceedings of the National Academy of Sciences*, 111(48), 17066–70.

Avnet, Tamar and Anne-Laure Sellier (2011), "Clock Time vs. Event Time: Temporal Culture or Self-Regulation?" *Journal of Experimental Social Psychology*, 47(3), 665–67.

Bardhi, Fleura and Giana M Eckhardt (2017), "Liquid Consumption," *Journal of Consumer Research*, 44(3), 582–97.

Bartels, Daniel M. and Oleg Urminsky (2011), "On Intertemporal Selfishness: How the Perceived Instability of Identity Underlies Impatient Consumption," *Journal of Consumer Research*, 38(1), 182–98.

——— (2015), "To Know and to Care: How Awareness and Valuation of the Future Jointly Shape Consumer Spending," *Journal of Consumer Research*, 41(6), 1469–85.

Becker, Gary S. (1965), "A Theory of the Allocation of Time," *The Economic Journal*, 75(299), 493–517.

Bejan, Adrian (2019), "Why the Days Seem Shorter as We Get Older," *European Review*, 27(2), 187–94.

Bellezza, Silvia, Neeru Paharia, and Anat Keinan (2017), "Conspicuous Consumption of Time: When Busyness and Lack of Leisure Time Become a Status Symbol," *Journal of Consumer Research*, 44(1), 118–38.

Bem, Daryl J. (1967), "Self-Perception: An Alternative Interpretation of Cognitive Dissonance Phenomena," *Psychological Review*, 74(3), 183–200.

Berger, Jonah and Chip Heath (2005), "Idea Habitats: How the Prevalence of Environmental Cues Influences the Success of Ideas," *Cognitive Science*, 29(2), 195-221.

Bergstrom, Tayler, Joseph Reiff, Cassie Mogilner, and Hal Hershfield (2024), "A Broad View of Time Predicts Greater Subjective Well-Being," *Personality and Individual Differences*, 225, 112663.

Berman, Jonathan Z., An Tran, John G. Lynch, and Gal Zauberman (2016), "Expense Neglect in Forecasting Personal Finances," *Journal of Marketing Research*, 53(4), 535–50.

Bernstein, Peter L. (2008), *A Primer on Money, Banking, and Gold (Peter L. Bernstein's Finance Classics)*, John Wiley & Sons.

Bhattacharjee, Amit and Cassie Mogilner (2014), "Happiness from Ordinary and Extraordinary Experiences," *Journal of Consumer Research,* 41(1), 1-17.

Buehler, Roger, Dale Griffin, and Michael Ross (1994), "Exploring the 'Planning Fallacy': Why People Underestimate Their Task Completion Times," *Journal of Personality and Social Psychology*, 67(3), 366–81.

Cannon, Christopher, Kelly Goldsmith, and Caroline Roux (2019), "A Self-Regulatory Model of Resource Scarcity," *Journal of Consumer Psychology*, 29(1), 104–27.

——— (2024), "An Integrative Theory of Resource Discrepancies," *Journal of Consumer Psychology*, https://doi-org.proxy.lib.duke.edu/10.1002/jcpy.1406.

Carstensen, L.L. (1992), "Social and Emotional Patterns in Adulthood: Support for Socioemotional Selectivity Theory," *Psychology and Aging,* 7(3), 331-338.

Cheema, Amar and Dilip Soman (2006), "Malleable Mental Accounting: The Effect of Flexibility on the Justification of Attractive Spending and Consumption Decisions," *Journal of Consumer Psychology,* 16(1), 33–44.

——— (2008), "The Effect of Partitions on Controlling Consumption," *Journal of Marketing Research*, 45(6), 665–75.

Collins, Allan M. and Elizabeth F. Loftus (1975), "A Spreading-Activation Theory of Semantic Processing," *Psychological Review*, 82(6), 407–28.

Dai, Hengchen, Katherine L. Milkman, and Jason Riis (2014), "The Fresh Start Effect: Temporal Landmarks Motivate Aspirational Behavior," *Management Science,* 60(10), 2563–82.

DeVoe, Sanford E., Byron Y. Lee, and Jeffrey Pfeffer (2010), "Hourly versus Salaried Payment and Decisions about Trading Time and Money over Time," *ILR Review,* 63(4), 627–40.

DeVoe, Sanford E. and Jeffrey Pfeffer (2007), "When Time Is Money: The Effect of Hourly Payment on the Evaluation of Time," *Organizational Behavior and Human Decision Processes,* 104(1), 1–13.

Dhar, Ravi and Stephen M. Nowlis (1999), "The Effect of Time Pressure on Consumer Choice Deferral," *Journal of Consumer Research*, 25(4), 369–84.

Dias, Rodrigo S., Eesha Sharma, and Gavan J. Fitzsimons (2022), "Spending and Happiness: The Role of Perceived Financial Constraints," *Journal of Consumer Research*, 49(3), 373–88.

Donnelly, Grant E., Anne V. Wilson, Ashley V. Whillans, and Michael I. Norton (2021), "Communicating Resource Scarcity and Interpersonal Connection," *Journal of Consumer*

*Psychology*, 31(4), 726–45.

Donnelly, Kristin, Giovanni Compiani, and Ellen R.K. Evers (2022), "Time Periods Feel Longer When They Span More Category Boundaries: Evidence from the Lab and the Field," *Journal of Marketing Research*, 59(4), 821–39.

Dorsch, Michael J., Kjell Y. Törnblom, and Ali Kazemi (2016), "A Review of Resource Theories and Their Implications for Understanding Consumer Behavior," *Journal of the Association for Consumer Research*, 2(1), 5–25.

Ebert, Jane E. J. and Drazen Prelec (2007), "The Fragility of Time: Time-Insensitivity and Valuation of the Near and Far Future," *Management Science*, 53(9), 1423–38.

Etkin, Jordan (2019), "Time in Relation to Goals," *Current Opinion in Psychology*, 26, 32–36.

Etkin, Jordan, Ioannis Evangelidis, and Jennifer Aaker (2015), "Pressed for Time? Goal Conflict Shapes How Time Is Perceived, Spent, and Valued," *Journal of Marketing Research*, 52(3), 394–406.

Etkin, Jordan and Rebecca K. Ratner (2013), "Goal Pursuit, Now and Later: Temporal Compatibility of Different versus Similar Means," *Journal of Consumer Research*, 39(5), 1085–99.

Etkin, Jordan and Sarah A. Memmi (2021), "Goal Conflict Encourages Work and Discourages Leisure," *Journal of Consumer Research*, 47(5), 716–36.

Faraji-Rad, Ali and Leonard Lee (2022), "Banking Happiness," *Journal of Consumer Research*, 49(2), 336-358.

Fernbach, Philip, Christina Kan, and John Lynch (2015), "Squeezed: Coping with Constraint through Efficiency and Prioritization," *Journal of Consumer Research*, 41(5), 1204–27.

Festjens, Anouk and Chris Janiszewski (2015), "The Value of Time," *Journal of Consumer*

*Research*, 42(2), 178–95.

Frederick, Shane, Nathan Novemsky, Jing Wang, Ravi Dhar, and Stephen Nowlis (2009), "Opportunity Cost Neglect," *Journal of Consumer Research*, 36(4), 553–61.

Friedman, William J. and Steve M.J. Janssen, "Aging and the Speed of Time," *Acta Psychologica*, 134(2), 130-141.

Gilovich, Thomas and Victoria Husted Medvec (1995), "The Experience of Regret: What, When, and Why," *Psychological Review*, 102(2), 379–95.

Gino, Francesca and Cassie Mogilner (2014), "Time, Money, and Morality," *Psychological Science*, 25(2), 414–21.

Graham, Robert J. (1981), "The Role of Perception of Time in Consumer Research," *Journal of Consumer Research*, 7(4), 335–42.

Hamilton, Rebecca W., Chiraag Mittal, Anuj Shah, Debora V. Thompson, and Vladas Griskevicius (2019), "How Financial Constraints Influence Consumer Behavior: An Integrative Framework," *Journal of Consumer Psychology*, 29(2), 285–305.

Heath, Chip and Jack B. Soll (1996), "Mental Budgeting and Consumer Decisions," *Journal of Consumer Research*, 23(1), 40–52.

Hershfield, Hal E., Cassie Mogilner, and Uri Barnea (2016), "People Who Choose Time over Money Are Happier," *Social Psychological and Personality Science*, 7(7), 697–706.

Hsee, Christopher K. (1996), "The Evaluability Hypothesis: An Explanation for Preference Reversals between Joint and Separate Evaluations of Alternatives," *Organizational Behavior and Human Decision Processes*, 67(3), 247–57.

Hsee, Chrisopher K., George F. Loewenstein, Sally Blount, and Max H. Bazerman (1999), "Preference Reversals between Joint and Separate Evaluations of Options: A Review and

Theoretical Analysis," *Psychological Bulletin,* 125(5), 576–90.

Hsee, Chrisopher K., Fang Yu, Jiao Zhang, and Yan Zhang (2003), "Medium Maximization," *Journal of Consumer Research,* 30(1), 1-14.

Hsee, Christopher K., Jiao Zhang, Cindy F. Cai, and Shirley Zhang (2013), "Overearning," *Psychological Science,* 24(6), 852–59.

Inzlicht, Michael and Aidan V. Campbell (2022), "Effort Feels Meaningful," *Trends in Cognitive Sciences,* 26(12), 1035–37.

Iyengar, Sheena S., Rachael E. Wells, and Barry Schwartz (2006), "Doing Better but Feeling Worse: Looking for the 'Best' Job Undermines Satisfaction," *Psychological Science*, 17(2), 143–50.

Jacoby, Jacob, George J. Szybillo, and Carol Kohn Berning (1976), "Time and Consumer Behavior: An Interdisciplinary Overview," *Journal of Consumer Research*, 2(4), 320–39.

Jhang, Ji Hoon and John G. Lynch Jr. (2015), "Pardon the Interruption: Goal Proximity, Perceived Spare Time, and Impatience," *Journal of Consumer Research*, 41(5), 1267–83.

Kahneman, Daniel, Alan B. Krueger, David A. Schkade, Norbert Schwarz, and Arthur A. Stone (2004), "A Survey Method for Characterizing Daily Life Experience: The Day Reconstruction Method," *Science (New York, N.Y.),* 306(5702), 1776–80.

Kahneman, Daniel and Amos Tversky (1979), "Prospect Theory: An Analysis of Decision under Risk," *Econometrica*, 47(2), 263–91.

Keinan, Anat and Ran Kivetz (2008), "Remedying Hyperopia: The Effects of Self-Control Regret on Consumer Behavior," Journal of Marketing Research, 45(6), 676–89.

——— (2011), "Productivity Orientation and the Consumption of Collectable Experiences," *Journal of Consumer Research,* 37(6), 935–50.

Kim, B. Kyu, Gal Zauberman, and James R. Bettman (2012), "Space, Time, and Intertemporal Preferences," *Journal of Consumer Research*, 39(4), 867–80.

Laroche, Michel, Jasmin Bergeron, and Christine Goutaland (2001), "A Three-Dimensional Scale of Intangibility," *Journal of Service Research*, 4(1), 26–38.

Leclerc, France, Bernd H. Schmitt, and Laurette Dubé (1995), "Waiting Time and Decision Making: Is Time like Money?," *Journal of Consumer Research*, 22(1), 110–19.

Liberman, Nira and Yaacov Trope (1998), "The Role of Feasibility and Desirability Considerations in near and Distant Future Decisions: A Test of Temporal Construal Theory.," *Journal of Personality and Social Psychology*, 75(1), 5.

Linville, Patricia W. and Gregory W. Fischer (1991), "Preferences for Separating or Combining Events," *Journal of Personality and Social Psychology*, 60(1), 5–23.

Liu, Wendy and Jennifer Aaker (2008), "The Happiness of Giving: The Time-Ask Effect," *Journal of Consumer Research*, 35(3), 543–57.

Lynch Jr., John G., Richard G. Netemeyer, Stephen A. Spiller, and Alessandra Zammit (2010), "A Generalizable Scale of Propensity to Plan: The Long and the Short of Planning for Time and for Money," *Journal of Consumer Research*, 37(1), 108–28.

Norton, Michael I., Daniel Mochon, and Dan Ariely (2012), "The IKEA Effect: When Labor Leads to Love," *Journal of Consumer Psychology*, 22(3), 453–60.

Malkoc, Selin A. and Gabriela N. Tonietto (2019), "Activity Versus Outcome Maximization in Time Management," *Current Opinion in Psychology*, 26, 49-53.

Mogilner, Cassie (2010), "The Pursuit of Happiness: Time, Money, and Social Connection," *Psychological Science*, 21(9), 1348–54.

Mogilner, Cassie and Jennifer Aaker (2009), "'The Time vs. Money Effect': Shifting Product

Attitudes and Decisions through Personal Connection," *Journal of Consumer Research,* 36(2), 277–91.

Mogilner, Cassie, Sepandar D. Kamvar and Jennifer Aaker (2011), "The Shifting Meaning of Happiness," *Social Psychological and Personality Science,* 2(4), 395-402.

Monga, Ashwani, Frank May, and Rajesh Bagchi (2017), "Eliciting Time versus Money: Time Scarcity Underlies Asymmetric Wage Rates," *Journal of Consumer Research,* 44(4), 833–52.

Monga, Ashwani and Ozum Zor (2019), "Time versus Money," *Current Opinion in Psychology,* 26, 28–31.

Morewedge, Carey K., Leif Holtzman, and Nicholas Epley (2007), "Unfixed Resources: Perceived Costs, Consumption, and the Accessible Account Effect," *Journal of Consumer Research,* 34(4), 459–67.

Okada, Erica Mina and Stephen J. Hoch (2004), "Spending Time versus Spending Money," *Journal of Consumer Research,* 31(2), 313–23.

Palmeira, Mauricio M. and Joydeep Srivastava (2013), "Free Offer ≠ Cheap Product: A Selective Accessibility Account on the Valuation of Free Offers," *Journal of Consumer Research,* 40(4), 644–56.

Poynor, Cait and Kelly L. Haws (2009), "Lines in the Sand: The Role of Motivated Categorization in the Pursuit of Self-Control Goals," *Journal of Consumer Research,* 35(5), 772-87.

Raghubir, Priya and Joydeep Srivastava (2008), "Monopoly Money: The Effect of Payment Coupling and Form on Spending Behavior," *Journal of Experimental Psychology: Applied,* 14(3), 213–25.

Rajagopal, Priyali and Jong-Youn Rha (2009), "The Mental Accounting of Time," *Journal of Economic Psychology*, 30(5), 772–81.

Ratner, Rebecca K. and Rebecca W. Hamilton (2015), "Inhibited from Bowling Alone," *Journal of Consumer Research*, 42(2), 266–83.

Roese, Neal J. and Amy Summerville (2005), "What We Regret Most... and Why," *Personality and Social Psychology Bulletin*, 31(9), 1273–85.

Roxburgh, Susan (2004), "'There Just Aren't Enough Hours in the Day': The Mental Health Consequences of Time Pressure," *Journal of Health and Social Behavior*, 45(2), 115–31.

Rudd, Melanie, Rhia Catapano, and Jennifer Aaker (2019), "Making Time Matter: A Review of Research on Time and Meaning," *Journal of Consumer Psychology*, 29(4), 680–702.

Schanbacher, Anja D., David Faro, and Simona Botti (2023), "A Joint Account with My Future Self: Self-continuity Facilitates Adjustment of Present Spending to Future Income Changes," *Journal of Consumer Psychology*, 34(2), 264-80.

Sellier, Anne-Laure and Tamar Avnet (2014), "So What If the Clock Strikes? Scheduling Style, Control, and Well-Being.," Journal of Personality and Social Psychology, 107(5), 791.

Sexton, Steven (2015), "Automatic Bill Payment and Salience Effects: Evidence from Electricity Consumption," *The Review of Economics and Statistics*, 97(2), 229–41.

Shaddy, Franklin and Anuj K. Shah (2018), "Deciding Who Gets What, Fairly," *Journal of Consumer Research*, 45(4), 833–48.

Shah, Anuj K., Eldar Shafir, and Sendhil Mullainathan (2015), "Scarcity Frames Value," *Psychological Science*, 26(4), 402–12.

Shah, Anuj K., Sendhil Mullainathan, and Eldar Shafir (2012), "Some Consequences of Having Too Little," *Science*, 338(6107), 682–85.

Shah, Avni M., Noah Eisenkraft, James R. Bettman, and Tanya L. Chartrand (2016), "'Paper or Plastic?': How We Pay Influences Post-Transaction Connection," *Journal of Consumer Research*, 42(5), 688-708.

Sharif, Marissa A., Cassie Mogilner, and Hal E. Hershfield (2021), "Having Too Little or Too Much Time Is Linked to Lower Subjective Well-Being," *Journal of Personality and Social Psychology*, 121(4), 933–47.

Soman, Dilip (1998), "The Illusion of Delayed Incentives: Evaluating Future Effort–Money Transactions," *Journal of Marketing Research*, 35(4), 427–37.

——— (2001), "The Mental Accounting of Sunk Time Costs: Why Time Is Not like Money," *Journal of Behavioral Decision Making*, 14(3), 169–85.

Soster, Robin L., Ashwani Monga, and William O. Bearden (2010), "Tracking Costs of Time and Money: How Accounting Periods Affect Mental Accounting," *Journal of Consumer Research*, 37(4), 712–21.

Spiller, Stephen A. (2011), "Opportunity Cost Consideration," *Journal of Consumer Research*, 38(4), 595–610.

Spiller, Stephen A. (2019), "Opportunity Cost Neglect and Consideration in the Domain of Time," *Current Opinion in Psychology*, 26, 98–102.

Strazdins, Lyndall, Amy L Griffin, Dorothy H Broom, Cathy Banwell, Rosemary Korda, Jane Dixon, Francesco Paolucci, and John Glover (2011), "Time Scarcity: Another Health Inequality?" *Environment and Planning A: Economy and Space*, 43(3), 545–59.

Sussman, Abigail B. and Adam L. Alter (2012), "The Exception Is the Rule: Underestimating and Overspending on Exceptional Expenses," *Journal of Consumer Research*, 39(4), 800–814.

Tang, Yangyi (Eric), Zhongqiang (Tak) Huang, and Lei Su (2023), "The Influence of Event-Time (vs. Clock-Time) Scheduling Style on Satiation," *Journal of Consumer Psychology*, 33(1), 123–32.

Thompson, Debora V., Rebecca W. Hamilton, and Roland T. Rust (2005), "Feature Fatigue: When Product Capabilities Become Too Much of a Good Thing," *Journal of Marketing Research*, 42(4), 431-42.

Tonietto, Gabriela N. and Selin A. Malkoc (2016), "The Calendar Mindset: Scheduling Takes the Fun Out and Puts the Work In," *Journal of Marketing Research*, 53(6), 922–36.

Trope, Yaacov, Nira Liberman, and Cheryl Wakslak (2007), "Construal Levels and Psychological Distance: Effects on Representation, Prediction, Evaluation, and Behavior," *Journal of Consumer Psychology*, 17(2), 83–95.

Trope, Yaacov and Nira Liberman (2000), "Temporal Construal and Time-Dependent Changes in Preference.," *Journal of Personality and Social Psychology*, 79(6), 876.

——— (2010), "Construal-Level Theory of Psychological Distance.," *Psychological Review*, 117(2), 440.

West, Colin, Cassie Mogilner, and Sanford E. DeVoe (2021), "Happiness from Treating the Weekend Like a Vacation," *Social Psychological and Personality Science*, 12(3), 346–56.

Whillans, Ashley V., Aaron C. Weidman, and Elizabeth W. Dunn (2016), "Valuing Time over Money Is Associated with Greater Happiness," *Social Psychological and Personality Science*, 7(3), 213–22.

Whillans, Ashley V., Elizabeth W. Dunn, Paul Smeets, Rene Bekkers, and Michael I. Norton (2017), "Buying Time Promotes Happiness," *Proceedings of the National Academy of*

*Sciences*, 114(32), 8523–27.

Zauberman, Gal (2003), "The Intertemporal Dynamics of Consumer Lock-In," *Journal of Consumer Research*, 30(3), 405–19.

Zauberman, Gal and John G. Lynch Jr. (2005), "Resource Slack and Propensity to Discount Delayed Investments of Time Versus Money," *Journal of Experimental Psychology: General*, 134(1), 23–37.

Zauberman, Gal, B. Kyu Kim, Selin A. Malkoc, and James R. Bettman (2009), "Discounting Time and Time Discounting: Subjective Time Perception and Intertemporal Preferences," *Journal of Marketing Research*, 46(4), 543–56.

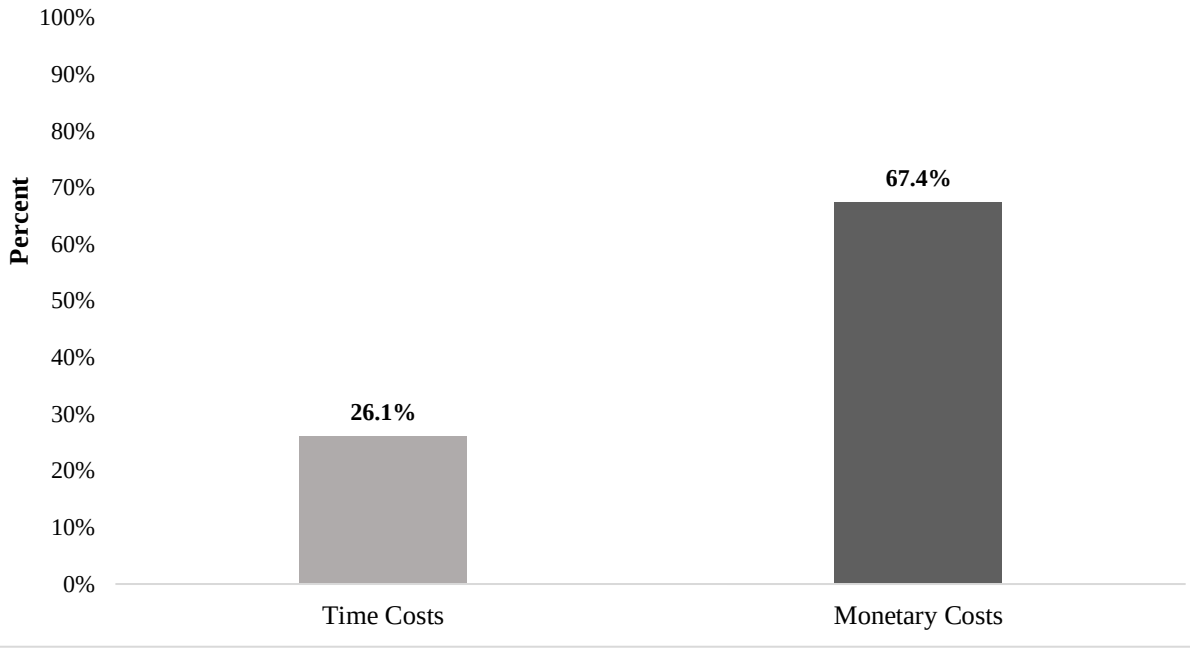
Zauberman, Gal, Rebecca K. Ratner, and B. Kyu Kim (2009), "Memories as Assets: Strategic Memory Protection in Choice over Time," *Journal of Consumer Research*, 35(5), 715-28.

Zhang, C. Yiwei, Abigail B. Sussman, Nathan Wang-Ly, and Jennifer K. Lyu (2022), "How Consumers Budget," *Journal of Economic Behavior & Organization*, 204(C), 69–88.

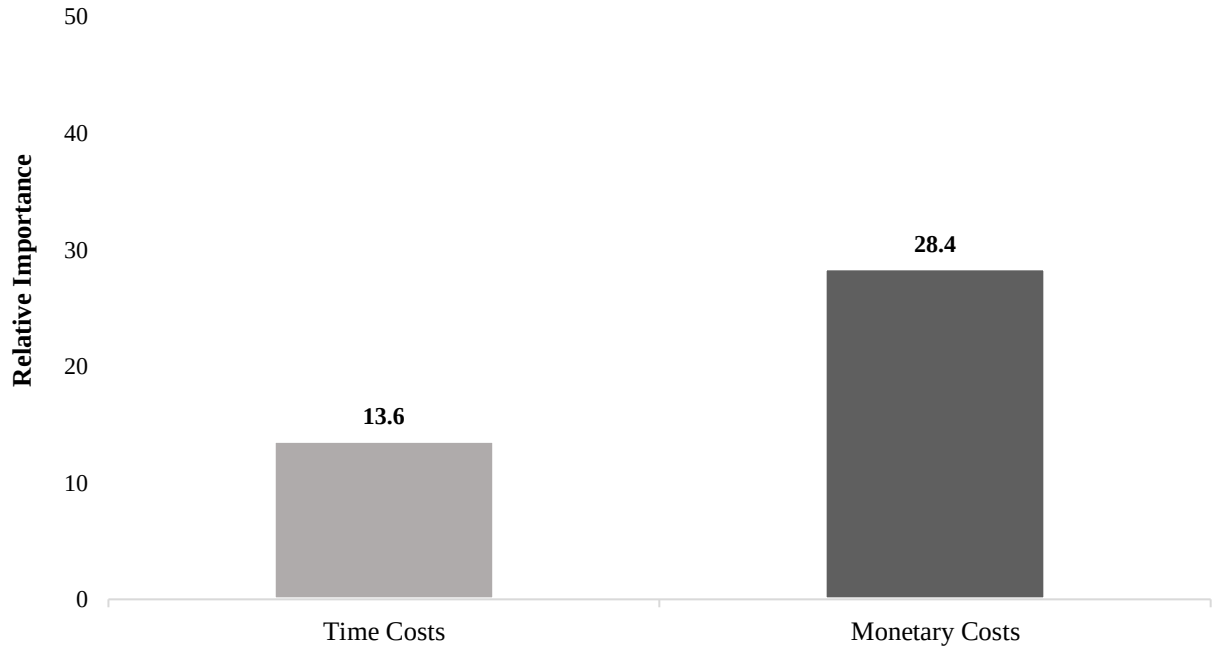
**TABLE 1: CONCEPTUAL FRAMEWORK**

| | **Awareness of Time Costs** | **Importance of Time Costs** |
|---|---|---|
| **Inherent Characteristics of Time** | • Intangible<br>• Passively spent<br>• Informally transacted | • Ambiguous value<br>• Endowed not earned<br>• Naturally replenished<br>• Perceived future availability<br>• Hard to budget for<br>• Limited penalties for overspending |
| **Contextual Factors** | • Explicit provision<br>• Direct prompting<br>• Related cues | • Specialness<br>• Acquisition effort<br>• Evaluation mode<br>• Cost timing<br>• Cost magnitude |
| **Contextual (and Individual) Factors** | • Perceived time constraints<br>• Alternative time uses<br>• Trading time for other resources | |

**APPENDIX FIGURE 1:**
**% OF PARTICIPANTS MENTIONING DIFFERENT RESOURCES**




**APPENDIX FIGURE 2:**
**RELATIVE IMPORTANCE OF DIFFERENT RESOURCES**



**APPENDIX TABLE 1:**
**EXAMPLES OF INDIVIDUAL AND CULTURAL DIFFERENCES**

| Individual /Cultural Difference | Framework Component(s) | Summary | Example |
|---|---|---|---|
| Age | Perceived time constraints | Older consumers should perceive greater time constraints. As individuals age, they tend to perceive time as passing faster (Friedman and Janssen 2010). Older consumers should also feel like they have less time ahead of them (Carstensen 1992). Both perceptions may lead older consumers to feel like they have less time available, and thus increase **awareness** and **importance** of time costs. | As consumers grow older, they may feel more time constrained and become more aware that certain activities (e.g., work) take time away from others (e.g., hobbies, travel, or time with loved ones). Consequently, they may make decisions to shift time towards higher value opportunities (e.g., retiring sooner to prioritize spending time spent on more enjoyable activities). |
| | Specialness | Older consumers should perceive moments in life as more "special." As individuals age, they care more about connection and meaning (Mogilner, Kamvar, and Aaker 2011) and cherish even ordinary moments (Bhattacharjee and Mogilner 2014). This perspective, in turn, should make time costs seem more **important**. | As consumers grow older, they may recognize the specialness of every moment shared with loved ones. Consequently, they may become more willing to invest in time-saving products or services (e.g., grocery delivery, faster commute options) to free up more time. |
| Chronic Time Constraints | Perceived time constraints | Chronic time constraints should, like situational factors, increase perceived time constraints. This, in turn, should increase **awareness** and **importance** of time costs. | Consumers in demanding professions (e.g., investment bankers) or who face persistent goal conflicts (e.g., working parents with young children) may chronically feel time constrained. Consequently, they may be more aware of time costs and find them more important, and thus incorporate time costs more in their decisions (e.g., eating lunch at the same place every day, or the place with the fastest service, rather than one with the best food or cheapest prices). |

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|---|---|---|---|
| | Alternative time uses | Chronic time constraints should, like situational factors, lead consumers to be more aware of alternative uses (e.g., opportunity costs; Spiller 2011) of their time. This, in turn, should increase **awareness** and **importance** of time costs. | Chronically time-constrained consumers (e.g., working parents with young children) may be more likely to think about the various ways they could spend their time (e.g., with their kids, doing household chores). Consequently, they may be more aware of time costs and find them more important, and thus incorporate time costs more into their decisions (e.g., invest in time-saving products and services). |
| Productivity Orientation | Perceived time constraints | Consumers high in productivity orientation should perceive greater time constraints. Productivity-oriented consumers try to accomplish as much as they can in limited time (Keinan and Kivetz 2011), which should make their time seem more in demand. This should increase **awareness** and **importance** of time costs. | A consumer who highly values productivity may also feel more time constrained (i.e., aware of the limits of their time). Consequently, they may be more aware of time costs and find them more important, and thus incorporate time costs more in their decisions. They may purchase or use time-saving products (e.g., high-speed internet) to help them get more out of their time. |
| | Alternative time uses | Consumers high in productivity orientation should be more likely to consider alternative uses of their time. Productivity-oriented consumers try to accomplish as much as they can in limited time (Keinan and Kivetz 2011), making potential time uses chronically more accessible. This, in turn, should increase the **awareness** and **importance** of time costs. | A consumer who highly values productivity may also be more aware of various uses of their time, and choose time-saving services (e.g., grocery delivery or cleaning services) so that they can get more done in the same amount of time. |
| | Evaluation mode | Consumers high in productivity orientation may be more likely to evaluate time costs jointly (vs. separately). Productivity-oriented consumers try to accomplish as much as they can in limited time (Keinan and Kivetz 2011), making them more likely to evaluate time costs relative to others. This, in turn, should make time costs seem more **important**. | A consumer who highly values productivity may also be more likely to compare the time costs associated with different alternatives (e.g., time spent waiting in line at store A vs. B). Thus, time costs may become more important, making them more likely to be incorporated into decisions (i.e., shop at the store with the shorter wait time). |

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|---|---|---|---|
| | Hard to budget for | Consumers high in productivity orientation may find budgeting for time easier. Productivity-oriented consumers try to accomplish as much as they can in limited time (Keinan and Kivetz 2011), so they be more accustomed, or practiced, at estimating time costs and more aware of interdependencies in time use across tasks. This, in turn, should make time costs seem more **important**. | A consumer who highly values productivity may be more inclined to plan and budget time so they can get more done in the same amount of time. Consequently, they be more likely to use, or pay more for, time management apps or other subscription services that support time allocation and help people stick to these budgets. |
| Future Self-Connectedness | Cost timing | Consumers who have a strong connection to their future selves should consider both immediate and distant time expenditures similarly. Consumers high in future self-connectedness tend to care more about their future selves (Bartels and Urminsky 2011), so may make decisions about future time costs as if they were happening today. This, in turn, should make time costs seem more **important**. | A consumer who has a strong connection to their future self might choose to spend more money to purchase a fast pass for an upcoming Disney trip next month, because they anticipate the discomfort of waiting in long lines and consider this future time cost to be as consequential as if they had to endure it today. |
| | Limited penalties for overspending | Consumers who have a strong connection to their future selves may perceive greater penalties for overspending time. Consumers high in future self-connectedness tend to care more about their future selves (Bartels and Urminsky 2011), and because the penalties of overspending time tend to be felt more in the future, they may be more sensitive to those repercussions. This, in turn, should make time costs seem more **important**. | A consumer who has a strong connection to their future self might place greater importance on time costs in the present when making decisions (e.g., choosing to take the express lane to make sure they get to work on time) to avoid negative consequences of overspending time in the future (e.g., get scolded by their boss for being late). |

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| Cultural Emphasis on Time | Related cues/ Explicit provision/ Direct prompting | Consumers from more time-oriented cultures may be more attuned to time-related information. Time-oriented cultures place high value on productivity, efficiency, and punctuality (Bellezza, Paharia, and Keinan 2017), increasing sensitivity to time-related information. This, in turn, should increase **awareness** of time costs. | Consumers from time-oriented cultures may be more influenced by marketing communications related to time costs. An advertisement for a restaurant that explicitly provides time costs (e.g., "Lunch in 5 minutes or less"), for example, may have a bigger impact on driving traffic in more time-oriented cultures. |
| | Trading time for other resources | Consumers from more time-oriented cultures may perceive time as a valuable resource that is interchangeable with other resources, such as money (Graham 1981; DeVoe and Pfeffer 2007). This, in turn, should increase **awareness** and **importance** of time costs. | Consumers from time-oriented cultures may be more likely to understand that time is not "free," and thus be more willing to pay money to free up time for higher value things (e.g., pay for gardening services to free up time for paid work because they recognize their hourly rate is worth more than hiring someone to mow the lawn). |
| Broad View of Time | Perceived time constraints | Consumers who take a broader view of time may perceive fewer time constraints. Thinking about time in terms of the years of one's life (vs. hours or minutes of the day), for instance, should make time feel less scarce (Bergstrom et al. 2024). This, in turn, should reduce **awareness** and **importance** of time costs. | Since consumers with a broader view of time tend to consider their tasks and commitments over a longer period, they may feel less pressed for time and thus perceive less need for time-saving products or services (e.g., grocery delivery). |
| | Alternative time uses | Consumers who take a broader view of time may be less likely to consider alternative uses of their time (i.e., opportunity costs). They are less likely to perceive tradeoffs or conflict between activities (Bergstrom et al. 2024), and thus may be less likely to spontaneously think about different ways to spend the time. This, in turn, should decrease **awareness** and **importance** of time costs. | Since consumers with a broader view of time may be less likely to think about different ways they could spend their time, they may be less compelled to spend less time on certain things to save more for others, and thus less inclined to invest in time-saving products or services that would help them do so (e.g., automated home devices or meal delivery services). |

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| | Specialness | Consumers who take a broader view of time may be more likely to see time as 'special', and value the time more highly. They may become more deliberate in how they allocate their time, and gain clarity about what is important and fulfilling (Bergstrom et al. 2024). This, in turn, should make time costs seem more **important**. | Since consumers with a broader view of time may more often view time as "special", they should become more deliberate in how they choose to spend their time, and more willing to devote time to more meaningful activities and experiences (over less meaningful ones). |
| Propensity to Plan | Alternative time uses | Consumers with a high propensity to plan may be more likely to consider alternative uses of their time. Because planners often consider potential future time allocations (Lynch et al. 2010), they may be more aware of alternative time uses. This, in turn, should increase **awareness** and **importance** of time costs. | A consumer with a high propensity to plan may be more aware of potential future time allocations. Consequently, they may choose time-saving services (e.g., meal prep services) that allow them to efficiently plan and allocate time to various activities. |
| | Perceived future availability | Consumers with a high propensity to plan may be less likely to expect to have more time in the future. Since planners often consider potential future time allocations (Lynch et al. 2010), they should be less likely to erroneously assume they will have more time in the future to fulfill commitments and complete tasks. This, in turn, should make time costs seem more **important**. | A consumer with a high propensity to plan might place greater importance on time costs when making decisions (e.g., choosing to live in an apartment that is closer to their workplace) because they recognize that they will also have limited time in the future, and daily commuting will have a significant impact on their schedule. |
| | Hard to budget for | Consumers with a high propensity to plan may find budgeting for time easier. Planners should be more accustomed, or practiced, at estimating and budgeting time expenditures (Lynch et al. 2010), and they should be more aware of interdependencies in time use across tasks. This, in turn, should make time costs seem more **important**. | A consumer with a high propensity to plan may be more inclined to budget time carefully. Consequently, they may be more likely to use, or pay more for, time management apps or other subscription services that support time allocation and help people stick to these budgets. They may also be more inclined to avoid choices that would get them off schedule (e.g., ordering lunch from a place with tasty food but slow service). |

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| Clock Time vs. Event Time | Related cues/Explicit provision/Direct prompting | Consumers with a clock-time orientation should be more attuned to time-related information. Having a clock-time time orientation means letting external cues (i.e., a clock) dictate when activities begin and end (Avnet and Sellier 2011; Sellier and Avnet 2014), so people should be more sensitive to time-related information. This, in turn, should increase **awareness** of time costs. | Consumers with a clock-time orientation may be more influenced by marketing communications related to time costs. An advertisement for a car maintenance service that explicitly provides time costs (e.g., "Get your oil changed in 10 minutes or less!"), for example, may have a bigger impact on attracting clock-time oriented customers. |
| | Perceived time constraints | Consumers with a clock-time orientation should perceive greater time constraints. Letting external cues (i.e., a clock) dictate when activities begin and end (Avnet and Sellier 2011; Sellier and Avnet 2014) means transitioning between activities by the clock, rather than when one naturally feels ready to do so. This, in turn, should increase **awareness** and **importance** of time costs. | Consumers with a clock-time orientation may feel more pressured to complete tasks within strict timeframes (e.g., adhering to a rigid daily schedule), and thus should be more likely to use productivity apps that track time spent to try and spend time more efficiently. |

**APPENDIX TABLE 2:**
**EXAMPLES OF INTERACTIONS BETWEEN FACTORS**

| | Factor 1 | Factor 2 | Summary | Examples |
|---|---|---|---|---|
| **Amplification of Time Cost Consideration** | Acquisition effort | Specialness | Expending effort to acquire "special" time may make time costs even more **important**. | The harder someone works to get time off for a special purpose or event (e.g., Mother's Day), the more they should value that time, increasing special time's impact on making time costs seem important. |
| | Evaluation mode | Explicit provision | Jointly evaluating numeric (vs. categorical) time costs may make them even more **important**. | Numeric time costs (e.g., 30-min wait) are harder to evaluate separately than categorical ones (e.g. a "short" wait), increasing joint evaluation's impact on making time costs seem important. |
| | Perceived time constraints | Alternative time uses | Since constraint increases attention to opportunity costs (Spiller 2011), the more time constrained one feels, the more that alternative time uses may also be top of mind. Likewise, since perceiving greater goal conflict can make time seem more limited (Etkin, Evangelidis, and Aaker 2015), the more that alternative time uses are accessible, the more time constrained one may also feel. Both phenomena should increase **awareness** and **importance** of time costs. | A busy consumer standing in line to make a return and who thinks about the different ways they could spend that time may become even more aware of time costs and more likely to leave the line to do something else instead. |
| **Mitigation of Time Cost Consideration** | Time's ambiguous value | Cost magnitude | Time costs of subjectively greater magnitude may be perceived to have less ambiguous value, making time costs seem more **important**. | While the value of a 30-minute layover in the context of a 10-hour flight is unclear, in the context of an hour-long flight, the same time cost is much less ambiguous (e.g., I could have flown half the distance in that time), making it seem more important. |

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| | Trading time for other resources | Time's informal transaction | Contexts that encourage consumers to see time as tradeable for other resources should reduce perceptions of time as informally transacted, increasing **awareness** of time costs. | Gig-economy workers, who are more accustomed to trading time for money, may be more acutely aware of differences in wait times across shops or stores and thus more likely to consider this in their choices. |
| | Explicit provision | Time is hard to budget for | Explicitly providing time costs should make time budgeting less challenging, making time costs seem more **important**. | Consumers might find it easier to meal plan (i.e., budget time for cooking) when using a recipe app that provides explicit cook time estimates (i.e., time costs), compared to cookbooks that lack such information. |
| | Alternative time uses | Expected future availability | Considering alternative time uses should decrease the expectation that time will be more available in the future, making time costs seem more **important**. | When a vacationer debates whether to accept a voucher for a later flight, considering other activities they could do instead (trying a new restaurant, visiting another landmark) should reduce perceived future time slack and make time costs seem more important to consider. |
| **Exacerbation of Time Cost Neglect** | Expected future availability | Cost timing | Larger gaps between deciding to spend time and the actual transaction should lead consumers to expect even more time to be available at that future point, leading time costs to seem even less **important.** | Consumers may neglect time costs more in decisions impacting the distant future (e.g., decide not to buy a time-saving EZ pass for next month's commute) because they believe they'll have more time available at that distant future point. |
| | Cost timing | Limited penalties for overspending | Larger gaps between deciding to spend time and the actual transaction should lead the potential penalties for overspending time to seem even less severe, making time costs seem even less **important.** | Consumers may neglect time costs more in decisions impacting the distant future (e.g., decide not to apply for TSA pre-check in preparation for travel next year) because the penalties for overspending future time (e.g., spending extra time in airport security that results in missed flights) seem even less severe in the present. |

**APPENDIX TABLE 3:**
**COMPLETE LIST OF PROPOSITIONS**

| |
|---|
| **INHERENT CHARACTERISTICS IMPACTING AWARENESS** |
| **P1:** Inherent characteristics of time (i.e., it is intangible, passively spent, and informally transacted) should make time costs less likely to be noticed.<br><br>**P1a:** Time's intangibility should make time costs less likely to be noticed.<br>**P1b:** That time is spent passively should make time costs less likely to be noticed.<br>**P1c:** Time's tendency to be informally transacted should make time costs less likely to be noticed. |
| **INHERENT CHARACTERISTICS IMPACTING IMPORTANCE** |
| **P2:** Inherent characteristics of time (i.e., it has ambiguous value, is endowed rather than earned, is naturally replenished, is perceived as more available in the future, is difficult to budget for, and has limited penalties for overspending) should make time costs seem less important.<br><br>**P2a:** Time's ambiguous value should make time costs seem less important.<br>**P2b:** That time is endowed (vs. earned) should make time costs seem less important.<br>**P2c:** That time naturally replenishes should make time costs seem less important.<br>**P2d:** That time seems more available in the future should make time costs seem less important.<br>**P2e:** Time being hard to budget for should make time costs seem less important.<br>**P2f:** The limited penalties for overspending time should make time costs seem less important. |
| **CONTEXTUAL FACTORS IMPACTING AWARENESS** |
| **P3:** Contextual factors (i.e., explicit provision of time costs, direct prompting, and related cues) should make consumers more aware of time costs.<br><br>**P3a:** Explicitly providing time costs should increase awareness.<br>**P3b:** Direct prompts or reminders to consider time costs should increase awareness.<br>**P3c:** Time-related cues should increase awareness of time costs. |
| **CONTEXTUAL FACTORS IMPACTING IMPORTANCE** |
| **P4:** Certain contextual factors (i.e., specialness, acquisition effort, evaluation mode, cost timing, and cost magnitude) can make time costs seem more important.<br><br>**P4a:** Time seeming "special" should make time costs seem more important.<br>**P4b:** Expending effort to acquire time should make time costs seem more important.<br>**P4c:** Joint (vs. single) evaluation should make time costs seem more important. |

**P4d:** Greater temporal proximity should make time costs seem more important.
**P4e:** Greater subjective magnitude should make time costs seem more important.

**CONTEXTUAL (AND INDIVIDUAL) FACTORS IMPACTING AWARENESS AND IMPORTANCE**

**P5:** Certain contextual (and individual) factors (i.e., that increase perceived time constraints, make alternative uses of time more salient, or frame time as tradeable for other resources) can raise awareness of time costs and make them seem more important.

**P5a:** Contexts that make consumers feel time constrained should raise awareness of time costs and make them seem more important.
**P5b:** Contexts that make alternative time uses (i.e., opportunity costs) more salient should increase awareness of time costs and make them seem more important.
**P5c:** Contexts that make time seem tradeable for other resources should increase awareness of time costs and make them seem more important.