


UNDERSTANDING BEHAVIORAL ECONOMICS: A NARRATIVE PERSPECTIVE



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ABSTRACT

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According to the traditional economics approach, an individual's decisions reflect that individual's best interests and are made rationally. Behavioral economics, a field of economics that integrates economics and psychology in analyzing human behavior, is important for explaining why individuals' decisions and behaviors may not reflect their best interests. A review of the literature has found that behavioral economics has significance for its power to explain individual psychological aspects of the economic decision-making process, both among individuals and institutions. The key methodological approaches deployed to write this article are desktop and library research. On the basis of the literature being reviewed, this article aims to investigate the factors that have increased interest in behavioral economics, and define the key elements of behavioral economics, its application in the public and private sectors, and criticism of behavioral economics. The discussion in this article claims that behavioral economics benefits economics by incorporating other social sciences and approaches in individual behavior and decision making.

Contribution/Originality: This study contributes in the existing literature on the behavioral economics to its application in in the public and private sector. This study uses a survey of literature relating to the behavioral economics emphasizing the importance of the behavioral economics to understand consumers' behavior.

1. INTRODUCTION

In recent years, behavioral economics has received increased attention. This has occurred because the standard consumer decision-making models have been unable to comprehensively explain human behavior (Bernheim and Rangel, 2007). Behavioral economics is an experimental science, as it is based on experiments that combine economic deduction and psychological induction, thereby creating a complementary means of explaining human decisions (Brzezicka and Wisniewski, 2013). Behavioral economics is not a new field of economics, having deep historical roots. However, it came to prominence in the 1980s, when Richard Thaler¹ popularized his views of

¹Richard Thaler received the 2017 Nobel Prize in Economics for his questioning of the role of conventional economics in explaining individuals' behaviors. However, long before Thaler, two Nobel Laureates had previously been recognized for their contributions to behavioral economics: Kahneman (2002) and Simon, (1978) see https://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/.

human rationality and emphasized the influence of the endowment effect², mental accounting, concern for justice, and various other anomalies in economics (Sunstein, 2018). Behavioral economics combines the theoretical concepts of economics with those of psychology, thereby enabling it to develop various models for explaining the difficult issues of welfare evaluation (Bernheim and Rangel, 2007).

As a field of economics, behavioral economics is highly relevant as foundationally economics is the study of human behavior and the making of consumer decisions to efficiently allocate resources. In this context, behavioral economics offers a theoretical and methodological means of understanding human behavior by combining the principles of behavioral science and micro-economics (Kaplan *et al.*, 2018). The fundamental assumption of economic resource distribution is that individuals are rational beings (*rational homo oeconomicus*, economic humans) (McMahon, 2015) when making economic decisions (see (Alm and Bourdeaux, 2013)). Humans, as *homo oeconomicus*, are atomistic and stable individuals, coherent and capable of behaving to further their own self-interests and promote utility maximization (Brzezicka and Wisniewski, 2013; McMahon, 2015). If individuals are rational beings, as assumed, then the individual decision making process will also be rational, considering all available information and utilizing it to maximize the utility to the decision maker (Samson, 2017; Sunstein, 2018). It is this combination of economics and psychology that has enabled behavioral economics to explain economic phenomena (Tversky and Kahneman, 2000; Camerer and Loewenstein, 2004). Such combining psychology and other social sciences with economic models can only improve the explanatory power of economic models (Bernheim and Rangel, 2007; Chetty, 2015).

Several scholars have argued that what is now known as behavioral economics has actually been present since Adam Smith introduced his neo-classical theory of economics regarding individual behavior and utility function. In his book *The Theory of Moral Sentiments*, Smith explained that an "impartial spectator" may be used to provide moral justification to individual behavior. This impartial spectator may be used to check individual passions when promoting social interests (Dow, 2010). According to Smith, individual behavior always involve passions; however, Smith also notes that individuals can ignore this passion-driven behavior when using what may be termed an outside perspective or impartial spectator (Ashraf *et al.*, 2005). Smith, in his seminal *The Wealth of Nations* (1776), explained that individual economic behaviors are closely linked to their self-interest, and thus indicated that psychology can help explain individuals' economic behaviors. As greater attention has been given to behavioral economics, significant changes have been made in the conceptualization of the real world. Behavioral economics has been able to cover the shortcomings of economics, which to date has failed to properly explain human behavior (Diamond and Vartiainen, 2007).

Over time, behavioral economics became known through the thoughts of Herbert A. Simon and two psychologists, Daniel Kahneman³ and Amos Tversky. Simon is known for his theory of "bounded rationality,"⁴

² The endowment effect is a condition in which individuals value an item more if it is in their own possession rather than in the possession of others Sunstein (2018). According to Barberis (2018) the endowment effect is the most famous anomaly identified in a study by Richard Thaler, which found that "the amount people are willing to pay for an object of economic value is much lower than the amount they are willing to accept in order to give the object up". The endowment effect explains that individuals have emotional biases that lead to them behaving irrationally when attributing value to objects; they tend to attribute greater value to objects in their possession than the objective value of said objects Hochma (2017). For instance, a client at Bank A will not easily choose to use Bank B instead, even when said client recognizes that the products and services at Bank A are unable to meet his/her needs Lefevre and Chapman (2017).

³ Daniel Kahneman received the 2002 Nobel Prize in Economics for the Prospect Theory of individual behaviors in the economic decision-making process, which he developed together with Amos Tversky. According to prospect theory, when individuals evaluate the risks faced, they do not do so based on the utility to them, but on the potential gains or losses they may incur; as such, individuals generally attempt to avert or mitigate risk Kahneman and Tversky (1992), Pachur, Schulte-Mecklenbeck, Murphy and Hertwig (2018), Tversky and Kahneman (2000).

⁴ The theory of bounded rationality was developed by Herbert A. Simon, the 1978 Nobel Prize in Economics recipient, who found that individuals may make poor decisions as they cannot optimally utilize all available information. As such, according to Simon, individuals experience what he terms bounded rationality, which

which expressed the limited abilities of individuals to make decisions and further their self-interest, while Kahneman and Tversky are known for their "prospect theory", which holds that individual economic behaviors are intended to anticipate, determine, and achieve specific gains/losses. In traditional economics, individuals are seen as primarily anticipating good things. For example, in spending their money, individuals attempt to realize the greatest utility to them despite the limited availability of funds. Behavioral economics helps us understand how individuals view the "prospects" for good and bad things arising from the decisions they make.

The increased attention received by behavioral economics has also been driven by the weaknesses of the traditional consumer decision-making model, which has been unable to address questions of specific consumer behaviors. In the neo-classical model of economics, humans are assumed to be (1) rational individuals; (2) have unlimited willpower; and (3) be self-interested (Alm, 2010). This assumption, however, is not always realized in practice, as humans may perpetrate systematic biases or face various complexities that lead them to non-standard preferences and non-standard beliefs (Babcock *et al.*, 2012). As empirical research has shown that the assumed human behaviors in neo-classical economics are not always accurate, the idea of rational individuals has been questioned. Questions such as "Are individuals truly rational?" or "Can the market function optimally?" have promoted greater interest in behavioral economics. These questions are quite relevant, as empirical findings indicate that individuals are not always bound by rationality, self-control, and self-interest (see Brennan (2018)). As such, greater attention to behavioral economics has emerged from its ability to explain why individuals may behave irrationally (Diamond and Vartiainen, 2007). As shown by Altman (2012) in *Behavioral Economics for Dummies*, behavioral economics offers an important contribution in its ability to explain why certain assumptions of traditional or mainstream economics are not always accurate. Traditional economics has emphasized rationality and self-interest, and held that individuals tend to make the decisions that best further their self-interests. Such an assumption implies that individual decisions need no intervention, as allowing individuals to make their own economic decisions will produce the best results for them.

Traditional economics holds firmly to the two basic assumptions of self-interest and full rationality. It holds that, in economic interactions, economic actors are motivated by their own natural self-interests and thus require freedom. In other words, so that economic actors can make decisions and fulfill their own needs and desires, they require freedom; this describes how a natural force (the invisible hand) functions. In this process, every actor can freely determine their own attitudes and partners. However, in reality, individuals do not always act and behave rationally; it is this reality that is emphasized by behavioral economics. It attempts to examine individual behaviors realistically, with irrationality and dynamic individual behavior its central premises. Although it has developed as a discipline in economics, the assumptions of traditional and neo-classical economics still remain benchmarks in behavioral economics (Chetty, 2015).

This article attempts to explore the scholarship on the behavioral economics, including its application in the public and private sector. We hope that this article will offer insight into the knowledge of behavioral economics and provide ideas for further research in the area. This article relies on a review of the behavioral economics literature and its application in the public and private sectors. As such, this paper purely involves desktop and library research.

2. DEFINITION AND CHARACTERISTICS OF BEHAVIORAL ECONOMICS

There is no firm definition of behavioral economics. Generally, behavioral economics is defined as the use of economic principles to understand economic behaviors (Wright and Ginsburg, 2012; Hursh and Roma, 2013; Chetty, 2015). For example, Wright and Ginsburg (2012) define behavioral economics as the analysis of economic

occurs owing to their own individual cognitive limitations. Simon argues that individuals frequently make decisions by following "rules of thumb", and as such the decisions made are frequently those that do not maximally further their goals Cristofaro (2017), Vitasek (2017).

behavior using a combination of psychology and economics. As such, according to [Espin et al. \(2017\)](#) behavioral economics is the use of psychology and sociology in economic analysis. As [Laibson and List \(2015\)](#) argue: "Behavioral economics uses variants of traditional economic assumptions (often with a psychological motivation) to explain and predict behavior, and to provide policy prescriptions" (p. 385). From this definition, it can be recognized that behavioral economics is a discipline that analyzes individual decision-making and the influence of those decisions on individual behavior ([Earl, 2018](#)). To understand the influence of decisions on behaviors, it combines economics with psychology. [Angner and Loewenstein \(2012\)](#) define behavior economics as an approach using various methods and diverse empirical evidence to analyze how individuals and organizations make decisions. As such, it may be concluded that behavioral economics refers to the use of psychology and sociology to understand the decision-making process, without following the traditional economic assumption that all individuals are rational in their economic decision-making.

Behavioral economics emphasizes the importance of evidence and empiric facts that belie the assumptions of traditional economics. Several empirical studies have indicated that individuals are prone to systematic biases in decision making, because they do not always make the decisions that best further their interests ([Pereira, 2016](#)). Errors in decision-making also occur because individuals make mistakes in their decisions, even when those mistakes can be anticipated ([Laibson and List, 2015](#)). Such mistakes occur because of complex local conditions, non-standard preferences, and non-standard beliefs ([DellaVigna, 2009; Congdon et al., 2011](#)). There are three types of non-standard preferences: time preferences, risk preferences and social preferences. Meanwhile, non-standard beliefs occur because individuals may be systematically overconfident, and thus use small samples and individuals with poor recognition of their ability to predict future conditions. According to [Congdon et al. \(2011\)](#) deviations in the principle of rationality have promoted the emergence of increasingly realistic views of decision-making mechanisms.

As discussed above, the traditional economic approach has held that human beings are rational and seek optimal gains from their decisions. This view falls short, however, as not all individuals behave rationally in their decision-making (see, ([Tversky and Kahneman, 2000; Alm and Bourdeaux, 2013](#))). This is where behavioral economics attempts to explain individual behaviors and actions, using a different approach. Behavioral economics combines a variety of social sciences, particularly social psychology (cognitive psychology), to explain irrational behaviors ([Stewart, 2005](#)).

In behavioral economics, individual behaviors and actions are seen as resulting from the interactions of two normative factors: (1) normative preferences, referring to individual goals and activities believed to promote optimal welfare, and (2) revealed preferences, the decision made that may not always promote optimal welfare. Optimal welfare cannot always be realized, as behavioral bias is always possible ([Kooreman and Prast, 2010; Finighan, 2015](#)).

To make rational decisions, individuals require comprehensive information, cognitive abilities, and consistent preferences—all conditions that are difficult to achieve in the real world ([Kooreman and Prast, 2010](#)). This is known as bounded rationality, and occurs as a result of individuals' incomplete information that results in them failing to realize their own self-interests ([Diamond and Vartiainen, 2007](#)). In behavioral economics, individuals are seen as not always being rational, as they have limited access to information resources and thus make decisions unlike those they would make with comprehensive information. Their decisions, then, may not promote, or even actively hinder, their long-term goals. For example, an individual may continue smoking despite realizing the negative effects of the practice on future health ([Luoto and Carman, 2014](#)). In behavioral economics, strategies are thus frequently used to influence behaviors and habits, such as smoking ([Blaga, 2018](#)).

Individuals frequently become irrational in making decisions ([Alm, 2010](#)). This individual irrationality frequently occurs as a result of judgments and decisions being made through a heuristic problem, following a series

of "rules of thumb", shortcuts that fail to consider all relevant information in their decision-making⁵ (Brzezicka and Wisniewski, 2013; Earl, 2018). Behavioral economics attempts to help explain individual irrationality by understanding the various psychological barriers that individuals face in making choices and decisions (Babcock *et al.*, 2012). Shortcomings in the principle of individual rationality have led to increased criticism of mainstream economics and the neo-classical principle of rationality. As indicated by Nobel Laureate Herbert A. Simon in his concept of "bounded rationality", individuals may not seek to maximize their own gains through their behavior as they are unable to assimilate and understand all the information they require to maximally realize their own self-interests. Individuals are generally incapable of collecting all the information they require, and even when they can, they may not be able to process it correctly; in other words, human minds are limited by what we may term "cognitive limits" (Cristofaro, 2017; Vitasek, 2017).

Briefly, Muller *et al.* (2010) identify six types of behavioral biases in behavioral economics: cognitive limitations, default decisions, hyperbolic discounting, loss aversion, and framing of information. Cognitive limitation refers to the limited abilities of individuals to process information or choose from various alternatives offered to them. These cognitive limitations frequently result in human error, and as a result individuals must face the negative effects of their decisions (Rehan and Umer, 2017). The second bias is known as default decisions, which explains individual behavior as frequently being affected by endowment effects and default positions, and thus being incapable of considering various alternatives. Biases in human behavior refers to the condition in which, when consumers are given the choice between large and small payoffs, they will frequently choose the larger payoff (Barberis, 2018). However, as decisions must consider time factors, individuals may also choose smaller payoffs that can be enjoyed in a relatively short time; this is known as hyperbolic discounting. The following bias is loss aversion, which is most frequently mentioned as a cause of irrationality. Loss aversion occurs when individuals are more sensitive to possible losses than potential gains (Rehan and Umer, 2017; The Royal Swedish Academy of Sciences, 2017). The last bias is related to the framing of information, Individuals may make decisions that appear irrational owing to the availability of certain information to them. This may occur, for example, because of sub-optimal search efforts or cognitive limitations in accessing information, or difficulties in the information analysis that precedes decision-making as a result of the use of rules of thumb.

3. BEHAVIORAL ECONOMICS IN THE PUBLIC AND PRIVATE SECTORS

In the past three decades, the amount of research using a behavioral economics approach has increased sharply (Solek, 2014; Blaga, 2018). Consequently, behavioral economics has become widely used in both the public and private sectors to analyze trends in individual behaviors. Empirical and theoretical research has also indicated that behavioral economics has frequently become integrated into public policy (Espin *et al.*, 2017; Samson, 2017; Barberis, 2018) including in healthcare policy (Blaga, 2018) energy policy (Brennan, 2018) tax policy (James, 2009; Weber *et al.*, 2014) and energy markets (Babcock *et al.*, 2012). The use of behavioral economics in such public policies has been used to provide economic justification for government intervention.

The role of behavioral economics in the public sector has become increasingly important as policies have required better understandings of human behavior (OECD, 2017). The government, as the agent of public policymaking, has used its policymaking initiatives to promote specific behaviors among its population (Marron, 2012). To change individual behaviors, the government must improve public engagement and experiment to promote the "best behaviors" within society (Marron, 2012). Public policy is linked to behavior as it is through public policy that the government attempts to regulate, influence, and change individual and organizational behaviors (Chetty, 2015; Dessart and Bavel, 2017). According to Madrian (2014) the psychological aspects of

⁵ As such, we can understand that consumers do not always make decisions that normatively reflect their own self-interest. This is because consumer rationality is influenced by various factors, including information asymmetries and cognitive limitations Pereira (2016).

behavioral economics are important for understanding human behavior; public policy is related to the provision of complex products and services, and as it is linked to individual decisions and choices, behavioral economics offers great policymaking potential (Lefevre and Chapman, 2017).

According to Bernheim and Rangel (2007) behavioral economics in public economy studies is important as the public sector has both positive and normative goals; in the public sector, discussion is centered on choices and well-being. Positively, we can predict the effects of policy reform on individual behaviors, while normatively, policy reform may indicate whether policy benefits or harms individuals (Bernheim and Rangel, 2007). TRSAS (2017) showed that government economic intervention is evidenced through public policy, which can help individuals with their limited cognitive abilities to act in their own self-interest. Government intervention is necessary owing to behavioral failures, i.e. cognitive limitations and psychological biases, which may cause individuals to act in ways that endanger them (Viscusi and Gayer, 2015). The importance of behavioral sciences⁶ in the public sector, thus, can be attributed to policy-makers being driven to create efficient and targeted policies and interventions (OECD, 2017).

From a traditional economics perspective, government intervention in the market and economy is necessary owing to market failures, a condition in which the market performs sub-optimally and prices do not reflect a balance between supply and demand. However, empirical evidence has shown the frequency of this phenomenon, such that government intervention is necessary to overcome and mitigate the effects of market failures on the economy. However, government intervention is not required only because of market failures. There are also deviations from the principle of rationality, indicating the possibility of individuals being incapable of optimal achievements, both when the market is performing well and when the market fails. As such, government intervention is important to ensure individuals make the best economic decisions (Congdon *et al.*, 2011).

The government may be considered a behavioral agent in policymaking, and it may face psychological biases and other limitations owing to political pressures. As such, the formulation of public policy using behavioral economics may also face the same weaknesses and suboptimal situations as individuals. This is because: (1) the government, as a regulator, experiences the same psychological biases as individuals, and (2) policymakers consider and are influenced by public choice incentives, and thus may create policies that fail to improve public welfare or misuse behavioral findings to increase regulatory control or reduce the influence of specific individual interests in public interests (Viscusi and Gayer, 2015). When policymaking involves behavioral economics, it must be done cautiously, as members of the public have diverse backgrounds (cultural, etc.) (Weber *et al.*, 2014).

One application of behavioral economics in the public sector is in taxation. Taxation is one form of government revenue, which it uses the taxation of private incomes to fund public sector activities. To increase revenue from taxation, the government may influence taxpayer behavior (i.e. increase tax compliance). According to James (2009) taxpayers' behaviors are influenced by diverse non-economic factors, such as social assistance, social influences, individual attitudes, ages, sexes, races, and cultures. Psychology helps provide an understanding of taxpayer behavior by enabling these non-economic factors to be considered, through what is known as fiscal psychology (James, 2009).

The use of policy to increase taxpayer compliance can be realized through two approaches: (1) the standard economics approach; and (2) the behavioral economics approach (Acheson and Lynch, 2017). The rise of behavioral economics, which emphasizes behavioral and psychological aspects in its examination of individual compliance, stems from the inability of traditional economics to comprehensively explain the economic behaviors of agents through its models. Behavioral economics may be applied to increase tax compliance by transforming the habits of taxpayers (Rollins, 2018). For example, the Australian government has applied a behavioral economics approach to promote punctual tax filing, accurate income reporting, and payment compliance. The behavioral economics

⁶ Behavioral sciences is a discipline that investigates human behavior and attempts to understand the various factors that influence it Dessart and Bavel (2017).

approach can also be used to promote tax compliance by transforming taxpayers into responsible citizens, in which they act not as selfish utility maximizers, but consider the interests of others in addition to their own interests (James, 2009).

As in the public sector, behavioral economics has also been widely applied in the private sector, including by such multi-national corporations as Google, eBay, Prudential, Disney, and Unilever (Hollingworth and Barker, 2017). Behavioral economics has also taken an important role in the financial sector, including in banking, insurance, securities, and investment (Pereira, 2016; Lefevre and Chapman, 2017). As explained previously, traditional economics has held that individuals (consumers) are rational beings, and as such they behave rationally, spending their money on items that give them the greatest gain and utility. However, empirical factors have shown that people do not always behave rationally, including in their consumer behavior. Deviations from the assumption of rationality can occur because of behavioral biases. In the financial sector, behavioral economics has taken an important role in explaining how individuals often lack the financial instruments they need to realize the greatest returns for them; this is often caused by minimal access to information or ability to understand the financial information they access.

The application of behavioral economics in the private sector can be observed in the insurance industry. In insurance, behavioral economics is important because it enables insurance companies to analyze the behavior of potential consumers considered risky from a psychological emotional, and social perspective (Spit and Hoying, 2018). Behavioral economics can also be used by insurance companies to attract consumers for their insurance products by presenting specific decisions to potential consumers (Spit and Hoying, 2018). Insurance companies seek to understand why potential consumers may act irrationally in choosing to purchase insurance. As such, behavioral economics has been applied in almost all elements of the insurance value chain, from product design, marketing, sales, to claims (Brockman and Yoder, 2010). According to Brockman and Yoder (2010) behavioral economics has been most widely applied in the insurance industry, as behavioral economics can simplify issues for both agents and consumers, create future value, and reinforce decision-making. *First*, it simplifies the decisions of consumers and agents: insurance agents attempt to simplify the complex product options and configurations that may result in consumers refusing to purchase insurance. Behavioral economics enables insurance companies to provide focused protection to clients, rather than provide diverse options. *Second*, the use of behavioral economics has enabled insurance companies to create products with readily apparent short-term values, as consumers tend to emphasize short-term value over long-term value, even when the long term value is much larger. *Third*, it has provided reinforcement during the decision-making process. Potential consumers, when choosing insurance products, are strongly influenced by the cost of insurance; some consumers prefer to purchase cheap insurance, while others show no interest in such insurance products.

4. LIMITATIONS OF BEHAVIORAL ECONOMICS⁷

Although behavioral economics has the potential to complement traditional economics through its understanding that individuals do not always behave rationally, it still has its limitations. Alm and Bourdeaux (2013) for example, criticized several aspects of behavioral economics. *First*, the use of behavioral economics in analyzing individuals' economic behaviors have received considerable criticism, including because no one theory is capable of explaining diverse individual behaviors. As such, efforts for modelling individual behavior require further development to better understand human behavior.

Second, criticism has also focused on the behavioral approach used in behavioral economics, as it only considers individual behaviors and assumptions, and thus tends to ignore aggregate, group, and market behaviors. Although

⁷ For further understanding of criticisms of behavioral economics, see: <https://jasoncollins.blog/2017/06/29/a-critical-behavioural-economics-and-behavioural-science-reading-list/>.

individuals do not always behave rationally, individual biases may not be apparent within the aggregate space; as such, aggregate behavior requires greater attention.

Third, behavioral economics has been criticized for its paternalistic assumptions. Whitman (2010) as well as Thaler and Sunstein (2003) explain that the paternalism within behavioral economics is a form of soft paternalism, libertarian paternalism, and asymmetric paternalism. This is related to the application of behavioral economics in public policy, where paternalism has been rampant. Behavioral economics explains how governments' intervention in individual behaviors is paternalistic, even as it recognizes that individuals do not all behave rationally. In this concept of paternalism, governments may decide to position individual decisions as the "default-setting" for promoting individual good. However, this is not truly accurate, as at a certain level aggregate rationality can overcome individual irrationality. Individual irrationality occurs not solely because of individual mistakes in decision making, but also because of government policymaking. Here, it can be seen how behavioral economics limit governments' ability to act.

5. CONCLUDING REMARKS

This article has shown how behavioral economics have gained the attention of both academics and practitioners. The attention to behavioral economics has emphasized this field of economics' ability to understand that individuals do not always act rationally or in their own best interest in their activities and decisions. Individual irrationality will always occur, owing to behavioral biases. Owing to its combination of psychology and sociology, behavioral economics has had the ability to recognize that fundamental assumptions of traditional or mainstream economics (such as rationality and self-interest) are not always realized. This strength of behavioral economics has enabled the approach to be widely applied in both the public and private sectors. In the public sector, for example, governments have been able to use behavioral economics approaches to formulate public policy and influence the behaviors of their citizens (such as in tax payment). In the private sector, meanwhile, a bounty of empirical evidence indicates that behavioral economics has been used by companies to determine the most appropriate strategies for influencing consumers' decisions to purchase certain products, such as insurance, or to utilize certain services.

This article is limited to a literature review. As such, further empirical research into the ability of behavioral economics to explain behavior bias and behavioral economics' importance in public/private policy remains necessary.

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