The Nudge Effect of Default Option Settings: Evidence from Meta-Analysis

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Abstract

Default option setting refers to a nudging method that increases the probability of people selecting that option by setting it as the default. In recent years, it has been increasingly applied to promote positive public behavior; however, its effectiveness has been questioned by both the public and scholars. Accordingly, this study employed meta-analysis to integrate existing empirical research on default option settings from recent years, analyzing the effectiveness of this nudging approach and further examining relevant variables that may influence its effectiveness. The study included 56 eligible original articles, comprising 92 individual studies. The results found: (1) Default option settings can indeed effectively nudge people' s behavior; (2) The nudging effectiveness of default option settings shows significant differences between Eastern and Western cultures, with its nudging effect being significantly better in Western cultural contexts than in Eastern cultural contexts; (3) The nudging effectiveness of default option settings differs significantly across different contextual application domains, with default option settings demonstrating better nudging effects in money-related domains compared to health and environmental domains.

Full Text

The Nudging Effect of Default Options: Evidence from a Meta-Analysis

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Abstract: Default option setting is a nudging technique that increases the likelihood of people choosing a particular option by pre-selecting it. This approach

has been increasingly employed in recent years to promote positive public behaviors, yet its effectiveness has been questioned by both the public and scholars. Accordingly, this study employed meta-analysis to integrate existing empirical research on default option settings from recent years, examining the effectiveness of this nudging technique and investigating variables that may influence its efficacy. A total of 56 original papers comprising 92 studies met the inclusion criteria. The results revealed that: (1) default option settings can indeed effectively nudge people' s behavior; (2) the effectiveness of default option settings differs significantly between Eastern and Western cultures, with the nudging effect being significantly stronger in Western cultural contexts than in Eastern cultural contexts; and (3) the effectiveness of default option settings varies significantly across different application domains, with stronger nudging effects in money-related contexts compared to health and environmental domains.

Keywords: default options, nudge, meta-analysis, opt-out, opt-in

Introduction

Numerous studies have demonstrated the important role of nudging in behavioral interventions (Allcott & Rogers, 2014; Benartzi et al., 2017; Sunstein, 2016a; Thaler & Sunstein, 2008). The appeal of nudging lies in its ability to successfully steer people' s behavior toward desired directions simply by altering choice architecture, without explicitly prohibiting options or resorting to obvious economic incentives (He et al., 2018). Due to its low cost and effectiveness, nudging has been widely applied to address social issues including environmental protection, health, social security, education, charity, and crime, becoming one of the most popular methods among public administrators in recent years (Organisation for Economic Co-operation and Development, 2017; Halpern, 2015).

Among various nudging techniques, default option setting is one of the most commonly employed methods (Bonini et al., 2018). The term "default option" originated as a computer terminology, referring to the automatic selection of decision or application software parameters when users do not intervene. As early as the 1990s, Johnson et al. discovered default effects in their study on how framing influences insurance purchase decisions (Johnson et al., 1993). In this experiment, Pennsylvania defaulted consumers into expensive auto insurance, while New Jersey defaulted them into cheaper insurance, with the former showing significantly higher purchase rates of expensive insurance. Although this study did not explicitly discuss default option settings, its results demonstrated that consumers' insurance decisions were significantly influenced by default options. Additionally, scholars studying employee participation in 401(k) savings plans also found default effects, revealing that automatic enrollment significantly increased employees' savings rates (Madrian & Shea, 2001). Johnson and Goldstein defined default options as the option that individuals receive when they fail to make an active decision in their research on organ donation (Johnson & Goldstein, 2003). In summary, default option setting is essentially a way of presenting choice sets that leverages people' s inertia during decision-making

to covertly increase the probability of selecting the pre-selected option (Dinner et al., 2011; Thaler & Sunstein, 2008). Research on default option settings typically employs two experimental conditions: the opt-in condition, where no default is pre-selected and decision-makers must make an explicit choice, and the opt-out condition, where the target option is pre-selected as the default and decision-makers have the right to opt out (Van Gestel et al., 2020).

The default effect produced by default option settings has received support from various lines of evidence and is considered an effective nudging technique. For instance, in the health domain, countries with opt-out (presumed consent) systems have higher organ donation rates compared to those with opt-in (explicit consent) systems (Abadie & Gay, 2004; Johnson & Goldstein, 2003; Huang et al., 2018). Under opt-out conditions, individuals are more likely to get vaccinated (Chapman et al., 2010; Patel et al., 2017), more inclined to accept government-promoted health screenings (Bartholomew et al., 2020; Narula et al., 2014), and show higher willingness to consume healthy foods (Hohle, 2014; Just & Price, 2013). In the monetary domain, consumers are more likely to select products set as defaults. Setting default options can effectively increase retirement savings (Thaler & Sunstein, 2008; Yan & Yates, 2019) and raise the purchase amount of accident insurance for the elderly (He & Jiang, 2020). Furthermore, default effects have been applied in environmental domains, where setting pro-environmental behaviors as defaults encourages more users to choose green energy (Pichert & Katsikopoulos, 2008) and increases willingness to join environmental intervention programs (Araña & León, 2013). After Rutgers University changed its printer default from single-sided to double-sided printing, the institution saved 150 million pages of paper over a decade (Rutgers, 2017). All this evidence suggests that default option settings can effectively nudge public behavior in many public management domains.

However, many previous studies have also shown that default option settings have no effect on nudging public behavior, or even produce counterproductive effects. In the environmental domain, an experiment on carbon offsetting found that default options had no significant impact on public choices to offset emissions (Löfgren et al., 2009). In the monetary domain, Lai et al. found in their study on nudging internet consumers' privacy choices that for consumers who were more privacy-conscious, both opt-in and opt-out methods had no significant influence on their choices (Lai & Hui, 2004). Some scholars have even discovered counterproductive effects of default option settings. For example, in the health domain, using default policies did not increase parental consent for HPV vaccination for their children, while parents were more likely to consent under opt-in methods (Reiter et al., 2012). When colonoscopy was set as the default option, it not only failed to nudge patients toward screening but actually reduced screening rates (Narula et al., 2014). Another study examining willingness for deceased organ donation under different legislative systems also showed that opt-out systems might reduce donation intentions (Cheung et al., 2018). Some researchers argue that the controversy over the effectiveness of default option settings may stem from different motivations, categorizing nudging

techniques into self-interested nudges and altruistic nudges based on the nature of the target behavior. They suggest that acceptance of nudging may be lower in altruistic contexts due to self-interest considerations (Hagman et al., 2015). However, among the evidence above, there are also cases where default option settings failed to nudge self-interested behaviors (such as HPV vaccination and colonoscopy screening), indicating that the application effects of default option settings across different motivational contexts require further examination.

After thoroughly analyzing these contradictory findings, we propose that differences in the effectiveness of default option settings mainly stem from three aspects. First, the nudging effects of default option settings may differ across countries. For instance, in a study using default options to promote smart grid technology adoption, researchers found that the nudging effect was significantly lower in Switzerland than in Denmark (Toft & Thøgersen, 2014). Sunstein et al. investigated support rates for different nudging methods across multiple Asian and European countries, finding that China and Korea showed significantly higher support for default option settings, European countries generally showed lower support, and Japan showed the lowest support among all countries (Sunstein & Rauber, 2018). These cross-country differences in nudging effects may be related to cultural factors. In fact, Western scholars discovered the default effect as early as the 1990s (Johnson et al., 1993). In Eastern countries, the earliest research on default effects was published in 2011, which found that default option settings could increase online survey response rates (Jin, 2011). Default option settings originated and developed in the West and have been widely applied there, while for most Eastern countries, the use of this nudging method is still in the exploratory stage. Whether it can achieve equivalent effectiveness in Eastern cultural contexts remains to be further investigated.

Second, the nudging effects of default option settings may differ across application domains. Existing applications of default effects can be divided into three domains: health, money, and environmental protection. In the health domain, research has found that default option settings play important roles in promoting organ donation, healthy eating, and healthcare behaviors (Abadie & Gay, 2004; Hohle, 2014; Sunstein & Rauber, 2018). In the money domain, studies have examined the nudging effects of default option settings in charitable giving and product purchase behaviors (He & Jiang, 2020; Fan et al., 2019). In the environmental domain, evidence also shows that default option settings can effectively nudge pro-environmental behaviors (Pichert & Katsikopoulos, 2008; Rutgers, 2017). However, the nudging effects of default option settings are not uniform across these domains. Jachimowicz' s research found that default option settings in consumption-related domains may be more effective, while those in environmental domains may be less effective (Jachimowicz, Duncan, et al., 2018). Another study showed that public support for default option settings was significantly lower in applications such as carbon emissions and organ donation, while support was significantly higher in applications like childhood obesity and healthy eating (Sunstein & Rauber, 2018). These findings indicate that the nudging effects of default option settings are inconsistent across domains and

require comprehensive examination.

Third, the nudging effects of default option settings may differ across motivational contexts. Based on whether the beneficiary of the nudging technique is the individual being nudged or society as a whole, motivational contexts can be divided into pro-self and pro-social situations. Previous research found that public acceptance of pro-self default policies was higher than that of pro-social default policies (Hagman & Tinghög, 2015). The weaker nudging effect of pro-social default policies may be because they serve society rather than individuals alone, leading people to pursue personal interest maximization and engage in fewer selfless behaviors. One study found that individuals driven solely by selfish motives showed significantly lower support for organ donation than those motivated by both selfish and selfless motives (Nguyen & O' Neill, 2020). On the other hand, actual monetary costs may also influence the nudging effect of default options. For example, purchasing green energy often requires higher costs, which may affect the effectiveness of default enrollment (Ebeling & Lotz, 2015). Another study examining time-based electricity pricing strategies found that default enrollees reduced electricity usage during peak hours because costs were higher during those times (Fowlie et al., 2017). Therefore, we treat self-interest/altruism and whether actual monetary changes occur as motivational factors to examine differences in the nudging effects of default option settings across different motivational contexts.

Finally, different experimental settings may also lead to variations in the nudging effects of default option settings. First, regarding the measurement of default option setting outcomes, previous studies have typically used two types of dependent variables: dichotomous or continuous. Dichotomous variables include the proportion of people making a certain choice, such as whether to select default push information, whether to choose a green electricity plan, or whether to consent to organ donation (Madden et al., 2020; Michaelsen et al., 2020; Wang et al., 2020). Continuous variables include changes in donation amounts or consumption expenditures (Bruns et al., 2018; Steffel et al., 2016). This study aims to determine whether the magnitude of nudging effects differs based on the type of dependent variable measured. Second, Szucs and Ioannidis (2015) found that the distribution of effect sizes in empirical research varies by publication year. Therefore, we include publication time as a potential moderating variable to determine whether the effect size of default option settings changes over time. Additionally, following meta-analyses in related fields, this study also includes sample size, whether the study was a field experiment, and whether it was conducted online as potential moderating variables for further analysis.

In summary, whether default option settings are effective and under what conditions they work effectively urgently require systematic investigation. In fact, scholars have conducted a meta-analysis on default option setting studies published before 2017, demonstrating their effectiveness (Jachimowicz, Duncan, et al., 2018). The significance of conducting a new meta-analysis lies in three aspects. First, the five years since 2017 have been a period of rapid development in

nudging research worldwide, as well as the five years with the most controversy over nudging methods, with new research findings both supporting and opposing the method continuously emerging. This makes our meta-analysis substantially advanced in both content and perspective compared to the 2018 article. Second, previous studies included very few Asian studies, with most research coming from the West, which may not be sufficient to represent the global research landscape. Against this background, it is necessary to re-examine relevant research on default option settings systematically, exploring their effectiveness to answer the question of whether default option settings are truly effective and under what circumstances and for which populations they work. Finally, to our knowledge, there are currently no meta-analysis articles in China examining the effectiveness of nudging techniques. This study helps fill this gap. Based on these considerations, this study compiled relevant literature on default option settings from recent years, using meta-analysis to explore the actual effects of default option settings and examine whether their effectiveness is influenced by four categories of moderating variables: cultural factors, domain factors, motivational factors (self-interest/altruism and whether actual monetary changes occur), and experimental setting factors (type of dependent variable, publication time, sample size, whether online experiment, whether field experiment).

2.1 Literature Search and Screening

We searched relevant articles in Chinese databases (CNKI, VIP, Wanfang, Chinese Doctoral Dissertations Full-text Database, Chinese Master' s Theses Full-text Database) and English databases (EBSCO, ProQuest, Science Direct, SAGE, PubMed, PsycINFO, Web of Science). The Chinese search terms were: "默认选项," "默认选项设置," "默认效果," "选择加入," and "选择退出." The English search terms were: "defaults," "default effect," and "Opt-out and Opt-in." The search period ended on December 31, 2020.

2.2 Inclusion and Exclusion Criteria

Literature was screened according to the following criteria: (1) Studies must be true experiments or quasi-experiments; review studies were excluded. (2) This study defines the default effect as the choice difference between opt-in and opt-out conditions. Therefore, studies must be controlled experiments comparing opt-in and opt-out. If a study included conditions beyond opt-in and opt-out (e.g., forced choice), only data from these two conditions were examined. (3) Studies must provide experimental methods and relevant data for both control and experimental groups, such as standard deviations, sample sizes, or other data that could be used to calculate effect sizes (e.g., t-values, F-values, and p-values). Additionally, included studies comprised both dichotomous options (i.e., percentage choosing the desired outcome in each condition) and continuous options (e.g., average donation or contribution amount in each condition). If a study had multiple relevant dependent variable measures, each dependent variable was examined separately.

[Figure 1: see original paper] Meta-analysis literature search and screening process

After excluding conference papers, dissertations, and other non-peer-reviewed literature, 56 papers comprising 92 studies were included in the final analysis. The basic information for each included study is shown in Table 1 , covering literature on default option settings published from 2001 to 2020, with a total sample size of N = 112,212 (range = 16–19,992).

2.3 Literature Coding

We coded both study characteristic information and effect size information for the included meta-analytic literature. Study characteristic information primarily refers to basic study information, including authors and year, research method (e.g., laboratory vs. field experiment), application domain type, dependent variable characteristics (e.g., dichotomous vs. continuous), sample size, and sample source. For cultural factors, studies with samples primarily from Western countries were coded as "1," while those primarily from Eastern countries were coded as "0." For domain factors, taking the environmental domain as an example, studies where the target behavior was pro-environmental were coded as "1," while those unrelated to environmental behavior were coded as "0." For motivational factors, studies on self-interested nudges (e.g., vaccination behavior) were coded as "1," while altruistic nudges were coded as "0" ; studies where experimental outcomes involved actual monetary changes were coded as "1," while those without actual monetary changes were coded as "0." For experimental setting factors, field experiments were coded as "1" and non-field experiments as "0" ; online experiments were coded as "1" and non-online experiments as "0" ; studies with dichotomous dependent variables were coded as "1" and those with continuous dependent variables as "0." Publication time was divided by decade: studies published from 1990–2000 were coded as "1," 2000–2010 as "2," and 2010–2020 as "3." Sample size was a continuous moderating variable requiring no categorical coding. Effect size information mainly included sample statistics such as means, standard deviations, t-values, and F-values.

2.4 Statistical Analysis

This study used the metafor package in the open-source software R 4.0.3 for data analysis and testing (Viechtbauer, 2010). Cohen' s d was used as the effect size, calculating the Cohen' s d for the difference between opt-in and opt-out conditions across the 92 included studies. Effects were coded such that positive d values corresponded to more choices under opt-out conditions, while negative d values corresponded to more choices under opt-in conditions. For continuous dependent variables (e.g., donation or contribution amounts), Cohen' s d was calculated by dividing the difference between condition means by the pooled standard deviation (Cohen et al., 1988). For dependent variables measured on dichotomous scales, we calculated Cohen' s d using the arcsine transformation (Chernev et al., 2015; Lipsey & Wilson, 2001; Scheibehenne et al., 2010).

3. Results

3.1 Homogeneity Test Results

Homogeneity test results showed that the Q statistic for opt-in versus opt-out reached a significant level (Q = 6926.64, p < .001), indicating heterogeneity among effect sizes. The degree of heterogeneity was assessed using I^2 = 98.28%, which exceeds the 75% threshold proposed by Huedo-Medina et al. (2006), indicating high heterogeneity. This suggests that 98.28% of the variability in default option setting effect sizes is due to true differences in effects, while only 1.72% comes from random error, indicating that a random-effects model is appropriate for subsequent analyses and that further investigation of variables influencing effect sizes is necessary.

3.2 Publication Bias Test

This study comprehensively used the trim-and-fill method, fail-safe N, and Egger' s regression coefficient test to examine publication bias among studies included in the meta-analysis. The nudging effect of default options (before trim-and-fill: d = 0.59, 95% CI = [0.47, 0.71], p < .001) was adjusted using the trim-and-fill method, which added 16 studies and increased the random effect to d = 0.74 (95% CI = [0.62, 0.86], p < .001). The substantial change in effect size after trimming suggests possible publication bias. However, the fail-safe N for the nudging effect of default options was N = 153,644, far exceeding the 5k + 10 criterion, indicating a low likelihood of publication bias (Rosenthal, 1976). Additionally, Egger' s test result was β = -0.27, t = -0.35, 95% CI = [-1.80, 1.26], p = 0.72, suggesting that missing studies would not lead to underestimation of the effect of default option settings, meaning publication bias does not affect the main conclusions of the meta-analysis (Egger et al., 1997).

[Figure 2: see original paper] Funnel plot of the nudging effect of default option settings; trimmed studies = 16

3.3 Main Effect Test

A main effect test on studies examining the impact of default option settings on behavioral choices found that compared to the opt-in method, the opt-out default setting indeed led more people to choose the default option (d = 0.59, t = 10.12, 95% CI = [0.47, 0.71], p < .001). According to Cohen' s criteria, effect sizes of d = 0.2, 0.5, and 0.8 correspond to small, medium, and large effects, respectively (Cohen, 1992). Thus, the meta-analysis results indicate that default option settings have a relatively strong nudging effect on people' s decision-making.

3.4 Moderating Effect Test

The heterogeneity test indicated high heterogeneity among effect sizes. To specifically analyze the sources of variation, this study conducted a moderating effect

analysis on the random-effects model of default option settings. Nine moderating variables were included as moderators in the random-effects model: domain (environment/health/money), whether it was a field experiment, experimental location (Eastern/Western), publication time, type of dependent variable (dichotomous/continuous), sample size, whether it was an online experiment, self-interest versus altruism, and whether actual monetary changes occurred. The results are shown in Table 2 . In terms of domain, only the regression coefficient for the money domain was significantly positive (b = 0.43, SE = 0.14, p = 0.011). The regression coefficients for other study characteristics were not significant. Additionally, the difference between Eastern and Western results was significant (b = 0.44, SE = 0.20, p = 0.027). The results indicate that the nudging effect of default option settings is better in the money domain (compared to non-money domains) but may be weaker in health and environmental domains. Moreover, compared to its application in Western cultural contexts, using default option settings in Eastern cultural contexts yields weaker behavioral nudging effects.

4. Discussion

4.1 Effectiveness of Default Option Settings

This study demonstrates that default option settings have a strong nudging effect on promoting or improving people' s behavior (d = 0.59), with the opt-out condition showing significantly stronger behavioral intervention effects than the traditional opt-in condition. Among the 92 studies included in our meta-analysis, most default option setting studies showed positive effects on nudging people' s behavior, with only a few studies finding non-significant or negative effects. Compared to previous meta-analyses in the same field (Jachimowicz, Duncan, et al., 2018), this study' s overall effect size is slightly lower but essentially comparable (d = 0.68), indicating that default option settings can indeed effectively nudge behavioral change.

Furthermore, comparing this study' s overall effect size with meta-analyses of other commonly used nudging techniques reveals that default option settings have significantly stronger nudging effects than other methods. For example, a meta-analysis of framing effects on risky decision-making showed an overall effect size of 0.31 (Kühberger, 1998). A meta-analysis on using plate size changes and nutrition labeling to nudge healthy eating showed an overall effect size of 0.23 (Cadario & Chandon, 2018). Another meta-analysis using descriptive social norms to nudge energy conservation showed an overall effect size of 0.32 (Jachimowicz, Hauser, et al., 2018). This demonstrates that default option settings are also a relatively effective intervention method within the entire nudging domain, which explains the current enthusiasm among public administrators worldwide for applying default option settings.

4.2 Factors Influencing the Nudging Effect of Default Option Settings

Jachimowicz, Duncan, et al. (2018) focused on whether studies were conducted in the United States as a factor influencing the effectiveness of default option settings and found no moderating effect of geographic location. This study did not adopt this coding approach but instead focused on whether studies were conducted in Eastern or Western countries, aiming to reveal deeper cultural influences. Moderation analysis results indicate that cultural background does influence the nudging effect of default option settings, with stronger effects in Western cultural contexts than in Eastern cultural contexts. Default option settings originated and developed in the West, and while this method can also produce some effects in nudging Eastern populations, the overall effect is weaker than in the West. This may be due to the relatively small number of existing Eastern studies: during the literature search for this meta-analysis, we found that research from Eastern countries, represented by China, still constitutes only a small portion of relevant studies. Additionally, few Eastern studies can be found in other meta-analyses or review studies (Bucher et al., 2016; Jachimowicz, Hauser, et al., 2018; Wilson et al., 2016). This may also stem from differences between Eastern and Western cultures in social governance. Therefore, future research should conduct further cross-cultural comparative studies on the nudging differences of default option settings to explore the reasons behind these differences.

Consistent with Jachimowicz, Duncan, et al.' s (2018) meta-analysis, this study also found that the nudging effect of default option settings varies across application domains, with the strongest effect in the money domain (compared to non-money domains), followed by the environmental domain (compared to non-environmental domains), and the weakest effect in the health domain (compared to non-health domains). This is consistent with previous research findings (Jung & Mellers, 2016). The reasons may be as follows. First, studies on default option settings in the health domain often use organ donation as the context, which may conflict with existing policies, ethics, or religious beliefs in some countries. For example, research suggests that religious doctrine requirements may be an important factor hindering the effectiveness of default option settings (Sunstein, 2016b), resulting in weaker nudging effects in health and environmental domains. Second, although motivational factors alone did not moderate the nudging effect of default option settings, our supplementary analysis of the interaction between domain and motivational factors found that the environmental domain and self-interest/altruism motives jointly moderated the nudging effect. Specifically, in the environmental domain, the nudging effect of default option settings on altruistic behavior ($b = 1.245$, 95% CI = [0.49, 1.99]) was better than its effect on self-interested behavior ($b = 0.551$, 95% CI = [0.34, 0.76], $p < .05$). This suggests that evaluating the nudging effect of default option settings in environmental domains requires considering the influence of behavioral motivation. Existing research often views pro-environmental behavior as a prosocial, altruistic behavior (Bolderdijk et al., 2013; Dietz, 2015). Future research

should further classify target behaviors in environmental domains and explore how variables such as altruistic motivation and pro-social motivation explain the nudging effect of default option settings in environmental contexts. Finally, experimental setting factors did not moderate the nudging effect of default options, consistent with Jachimowicz, Duncan, et al.' s (2018) meta-analysis, again demonstrating that the effect size of default option settings remains stable across studies regardless of publication time, sample size, type of dependent variable, online versus offline experiments, or experimental venue.

4.3 Limitations and Future Directions

Limitations: (1) The current imbalance in the number of Eastern and Western studies may limit the robustness of the cultural moderation effect revealed in this study. (2) This study only selected four categories of moderating variables based on current research evidence and could not exhaust all potential moderating factors. For example, demographic variables such as gender and age may also moderate the nudging effect of default option settings. (3) Constrained by current meta-analytic techniques, this study only conducted supplementary analyses of the interaction between domain and motivational factors without testing more complex models. (4) This study only focused on the effectiveness of default option nudging, yet an increasing number of researchers have also questioned its acceptability (Hagman et al., 2015; Yan & Yates, 2019). Evaluation criteria for default option settings should be more comprehensive.

Future Directions: (1) Default option settings remain the most widely discussed technique in nudging research, with an increasing number of Eastern studies focusing on this topic. Future research can provide more explanatory evidence for cultural differences in nudging techniques and their underlying mechanisms. (2) Current meta-analyses rarely report interactions between moderating variables (Li et al., 2017). While maintaining model robustness, future research should extensively explore the effects of different factors and their interactions on the nudging effectiveness of default option settings to achieve more refined behavioral nudging. For example, the interaction of domain × actual monetary change × self-interest/altruism may influence the nudging effect of default option settings. (3) Future research should distinguish between the effectiveness and acceptability of default option settings to achieve a comprehensive evaluation of their pros and cons. (4) Researchers have begun developing various modifications of default option settings to enhance acceptability, such as adding transparency information (Bruns et al., 2018; Paunov et al., 2019) and educational information (Davidai et al., 2018). Future research should also focus on exploring various modifications of default option settings.

This study used meta-analysis to explore the nudging effect of default option settings, with the following main findings: (1) Overall, default option settings have a good nudging effect on promoting or improving people' s behavior, with the opt-out condition showing significantly stronger behavioral intervention effects than the traditional opt-in condition. (2) The nudging effect of default

option settings is influenced by cultural background, with significantly stronger effects in Western cultural contexts than in Eastern cultural contexts. (3) The nudging effect of default option settings is influenced by domain, showing the strongest effect in the money domain, followed by the environmental domain, and the weakest effect in the health domain. (4) The nudging effect of default option settings is not influenced by motivational factors or experimental setting factors, demonstrating stability across study characteristics.

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Nudging effect of default options: A meta-analysis

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Abstract: Default-based nudge has been increasingly used in recent years to improve public approval of social policies. However, its effectiveness has also been questioned by the public and some scholars. A meta-analysis was conducted to explore the effect of default options and the related variables that may affect its effectiveness. A total of 56 empirical research papers comprising 92 studies were included through literature retrieval. Results of the meta-analysis are as follows: (1) A considerable effect of default options was observed; (2) The moderating analysis of cultural background revealed that the nudging effect of default options under Western culture was better than that under Eastern culture; and (3) Lastly, the moderating analysis showed a significant difference of default effect between different domains, and that the nudging effect of default options was greater in the money-related domain than in the health and environmental domains.

Keywords: default options, nudge, meta-analysis, opt-out, opt-in

Note: Figure translations are in progress. See original paper for figures.