

## RESEARCH ARTICLE

# Consumers as creative agents: How required effort influences willingness to engage

Xianfang Zeng<sup>1</sup>  | Mehdi Murali<sup>2</sup>

<sup>1</sup>Department of Management and Marketing,  
College of Business and Economics, University of  
Wisconsin-River Falls, River Falls,  
Wisconsin, USA

<sup>2</sup>Haskayne School of Business, University of  
Calgary, Calgary, Alberta, Canada

**Correspondence**

Xianfang Zeng, Department of Management  
and Marketing, College of Business and  
Economics, University of Wisconsin-River  
Falls, 124 South Hall 410 S, 3rd St, River Falls,  
WI 54022, USA.

Email: [xianfang.zeng@uwrf.edu](mailto:xianfang.zeng@uwrf.edu)

**Abstract**

Consumers often engage with brands by participating in activities such as co-creating products and contributing ideas about product promotion. Such engagement enables consumers to be creative agents rather than mere end-users. However, it also places a burden on them, as it inevitably requires effort on the consumer part. This study investigates the impact of expected effort level (low vs. high) on consumers' inclination toward engagement, and its underlying mechanisms. Three experiments find that higher expected effort leads to lower intention to engage. This effect is mediated by the perceived probability of success and perceived value of engagement, and the two mediators operate in tandem. Effort levels negatively affect the perceived probability of success, which exerts a positive impact on the perceived value of engagement and then on willingness to engage. We also examine the moderating effect of consumer mindsets and find that chronic and situational consumer mindsets work differently. Specifically, primed mindsets have a significant effect, but enduring mindsets do not. This study contributes to the literature on engagement and expectancy–value theory by exploring consumer effort in a context where effort aids in implementing creativity.

**KEYWORDS**

effort, expectancy–value theory, consumer mindsets, willingness to engage

## 1 | INTRODUCTION

One increasingly important way that consumers engage with brands is to assume the role of creative agents in value-co-creation activities (Kozinets et al., 2008). For example, Nike provides various feature choices so that consumers can utilize their creativity to fashion their own gear (Teichmann et al., 2016). In addition to co-creating products, they can also volunteer valuable ideas to help improve and promote products (Allen et al., 2018). For instance, they codesign commercials for Doritos chips. From the firm side, engaging consumers can enhance their enjoyment, brand favorability, emotional bond with products, and purchase intentions (Buechel & Janiszewski, 2014; Franke & Schreier, 2010; Franke et al., 2009, 2010; Teichmann et al., 2016). From the consumer side, several benefits can be reaped such as the joy of learning and problem solving, the pride of authorship, and the

demonstration of capabilities and achievements (Bretschneider & Leimeister, 2016; Schreier, 2006; Townsend et al., 2015). While prior studies have emphasized the benefits of brand engagement, relatively less attention was given to its attendant costs for consumers (Gemser & Perks, 2015). In the process of engagement, effort on the consumer part is inevitable (Blut et al., 2020; Hoyer et al., 2010), and is often compounded by factors such as task complexity (Broniarczyk & Griffin, 2014) and choice overload (Huffman & Kahn, 1998). In particular, the deep and meaningful engagement that firms seek comes with great effort. While individuals appreciate the outcomes of effort (Franke et al., 2010), the effort itself is generally reckoned a cost (Fiske & Taylor, 1984; Zipf, 1949). Firms need to ponder over their strategies when designing the level of a required engagement effort. In particular, they need to reflect on how effort requirements may impact consumers' willingness to engage in the activity, and how different

consumers may diverge in their response to required effort. Indeed, effort requirements can be interpreted differently by different consumers (Cho & Schwarz, 2008; Kruger et al., 2004). This idea is consistent with data from an exploratory study ( $N = 411$ , 44.8% women,  $M_{\text{age}} = 33.1$ ) we conducted on Amazon's Mechanical Turk (MTurk). We found that some participants construed the effort required to design a T-shirt as a hindrance (e.g., "time-consuming," "overwhelming"), whereas other participants viewed it in a more positive or at least a neutral light (e.g., "keeps me busy," "brain exercise").

Previous consumer research has studied effort in consumption-related contexts such as prepurchase information search, product evaluation, purchase, and repurchase decisions (e.g., Beatty & Smith, 1987; Labroo & Pocheptsova, 2016; Luce et al., 1999; Novemsky et al., 2007; Reczek et al., 2014). Unlike these contexts, engaging in creative activities allows consumer effort to operate in an environment where competence is revealed through creativity. These activities are not necessarily original works or breakthroughs but ordinary creative acts or viewpoints. Our research context involves both creativity and labor that executes creative ideas to produce outcomes. In such a context, consumers perceive their own competence and odds of success and derive value based on and from the effort they put into creative tasks. Furthermore, the majority of extant effort studies examine the retrospective effort–value association (Inzlicht et al., 2018) and support the tendency of people to place a higher value on objects and outcomes involving effort than objects and outcomes that are unrelated to the previous effort (e.g., Franke & Schreier, 2010; Kruger et al., 2004; Norton et al., 2012). For example, Franke and Schreier (2010) find a positive relationship between effort and consumers' liking of self-designed products. This effort–value relationship is retrospective, meaning that "the more effort is exerted to obtain things, the more value they are assigned retrospectively" (Inzlicht et al., 2018, p. 341). In Franke and Schreier (2010), the effort has been exerted and is valued retrospectively. Our work is different in two ways: expected (vs. exerted) effort and effort being valued prospectively (vs. retrospectively). This study responds to Inzlicht et al.'s (2018, p. 344) call for more research on "whether effort adds value concurrently or prospectively," that is, whether the value is derived from exerting effort or from expecting it. We focus on the impact of expected effort on consumers' willingness to engage with brands, and offer insights into the mechanisms underlying the impact of expected effort level (low vs. high) on consumers' inclination toward engagement. Specifically, we examine how expected effort influences consumers' perceptions of the probability of successfully completing a creative task, the value of engagement, and ultimately their willingness to engage with firms. We also propose the moderating effect of consumer mindsets (fixed vs. growth).

## 2 | THEORETICAL BACKGROUND

### 2.1 | Effort and the current research context

Prior consumer research has examined effort that occurs during the consumption process, which encompasses information search,

evaluation of alternatives, purchases, repurchases, and so forth. The level of effort reflects the amount of personal resources (e.g., time, money, and energy) consumers expend before, during, and after consumption. In the consumption process, effort emanates from extensive and time-consuming information search from multiple sources (Beatty & Smith, 1987), arises from emotional tradeoffs between attributes such as safety and price (Luce et al., 1999), or can be conceptualized in terms of frequent purchases and considerable spending (Reczek et al., 2014). Another line of research construes effort as cognitive disfluency. Effort escalates as product features become blurry and when the foreground–background contrast ratio is low (Kim & Labroo, 2011; Labroo & Pocheptsova, 2016). Novemsky et al. (2007) define cognitive disfluency as one's difficulty in generating thoughts, accessing memories, or processing external stimuli. Different from the consumption context, the current research involves situations where consumers voluntarily assume the role of a proactive participant. They engage in tasks that require them to possess a certain level of skill, creativity, and brand knowledge. They design products using firm-furnished configurators or toolkits (Broniarczyk & Griffin, 2014; Teichmann et al., 2016). This approach has been adopted by a wide range of brands such as Dell, Nike, BMW, and Audi (Allen et al., 2018; Teichmann et al., 2016). Apart from co-creating products, consumers can also provide thoughts, skillsets, and perspectives to help firms with their marketing initiatives (Allen et al., 2018). For instance, consumers submit to Unilever their ideas about new formulas or packaging design (Allen et al., 2018). Admittedly, in some consumption situations, consumers also draw on their skills and knowledge. For example, IKEA's self-assembled furniture requires consumers' technical skills and knowledge of using tools. However, self-assembly is part of the consumption process, and to complete the entire process, consumers have to serve themselves. They follow pre-set procedures, and creativity is not a must.

Consistent with Sweeney et al. (2015), the current research views consumer effort as the exertion of physical and mental energy through performing activities of various difficulty levels. Notably, the effort itself is not a resource but an action of integrating and depleting personal resources. As creative agents, consumers implement their ideas through labor. When engaging in creative activities, consumers exercise physical and mental effort, and as a result, may experience exhaustion and mental fatigue. Their effort draws on physical energy and cognitive capacity to process and synthesize information and come up with constructive ideas. The effort may also be determined by the properties of a task. Although conceptually different, the difficulty level of a stimulus affects the level of effort (Inzlicht et al., 2018). The stimulus can be an engagement task. Brand engagement reflects a philosophy of consumer empowerment (Broniarczyk & Griffin, 2014; Fuchs & Schreier, 2011; Hoyer et al., 2010). The same forces "that empower consumers can also make things more difficult for them to choose," and lead to task complexity, tradeoff difficulty, and preference uncertainty (Broniarczyk & Griffin, 2014, p. 609). When co-creating products, consumers specify their preferences based on a large number of

product attributes (e.g., colors and materials). However, a proliferation of options may produce choice overload (Huffman & Kahn, 1998) and overwhelm consumers. Further, since complex product-creation tasks often have “design” elements, consumers have to creatively think about combinations using firms’ configurators. For example, to design an appealing coat, consumers may mull over the match of colors and fabrics for sleeves, collars, and so forth. In a word, effort may be a pain point and hinder consumers’ intentions toward engagement with firms.

**H1:** *Consumers’ willingness to engage with firms may be greater when their perceived level of expected effort is low (vs. high).*

Below we discuss the mechanisms behind this effect and when it is moderated.

## 2.2 | The expectancy-value theory and expected effort

Effort is usually expended in the service of attaining some goal (Inzlicht et al., 2018). Kruglanski et al. (2015, p. 600) note that “[t]he desirability (related to value) and attainability (related to expectancy) components of goals are immanent in major theoretical analyses of motivation.” The expectancy-value model deals with mental processes and recognizes these two key components as determinants of the intensity of human motivation (Eccles & Wigfield, 2002; Mazis et al., 1975; Weiner, 1974). Before pursuing a goal, individuals seek to confirm goal attainability (Kruglanski et al., 2015). Specific to engagement tasks, expectancy or attainability is the probability of successfully completing them. The “expectancy” component is comparable to Liberman and Trope’s (1998) “feasibility,” which pertains to the ease or difficulty of achieving a state, and the level of difficulty is indicated by the amount of effort expended. Because estimating the *probability of success* is often difficult, people tend to rely on external cues, such as the amount of effort required to complete a task to infer its feasibility. Generally, the level of effort is positively associated with task difficulty (Inzlicht et al., 2018). The more challenging a task is, the greater the required effort to complete it. Consumers often rely on this relationship between effort and feasibility and expect a task that requires greater effort to be less feasible than a task that requires less effort (Kim & Labroo, 2011).

**H2:** *Consumers’ perceived probability of success may be greater when their perceived level of expected effort is low (vs. high).*

The “value” component or desirability in the expectancy-value theory involves the value attached to a task (Eccles & Wigfield, 2002; Mazis et al., 1975; Weiner, 1974). The *value of engagement* is derived from the expected benefits and costs associated with consumers’ engaging with brands. Benefits may include the display of self-importance and self-identity (e.g., a sense of competency), the enjoyment and

satisfaction gained from engagement, and the fulfillment of personal goals through tasks (Bretschneider & Leimeister, 2016; Schreier, 2006). As explained above, our research context deals with brand engagement that requires a degree of creativity. A sense of competence is one of the critical factors in determining consumers’ experience of delight in creative tasks (Dahl & Moreau, 2007). Consumers obtain satisfaction and enjoyment from fulfilling competence-related needs. In addition to personal enjoyment and self-importance, effort also contributes to value but as a cost in the expectancy-value theory (Eccles & Wigfield, 2002; Wigfield & Eccles, 2000). Indeed, humans tend to minimize physical and mental effort. This tendency is espoused by a large body of literature primarily originating from the principle of least effort (Zipf, 1949) and the idea of humans as “cognitive misers” (Fiske & Taylor, 1984, p. 12). In the domain of consumer engagement, effort is usually viewed as a cost factor (Haumann et al., 2015).

**H3:** *Consumers’ perceived value of engagement may be greater when their perceived level of expected effort is low (vs. high).*

These two considerations—the *probability of success* (i.e., attainability or feasibility) and *value of engagement* (i.e., desirability)—do not work in isolation. When it comes to a creative task, individuals derive positive value (such as satisfaction and enjoyment) from it when they can feel competent (Dahl & Moreau, 2007), and successful completion of the task allows them to have positive feelings of exerting control (Bandura, 1977). To put it another way, attainability or feasibility (that represents the possibility of successful completion) is a prerequisite for desirability (that manifests the value acquired from completion), at least in creative domains. The relationship between feasibility and desirability is also addressed in research on goal pursuit. Goals for a given action are organized in a hierarchical subordinate-superordinate structure (Carver & Scheier, 1990; Liberman & Trope, 1998; Vallacher & Wegner, 1987). Feasibility is more pertinent to subordinate goals, whereas desirability is more pertinent to superordinate goals (Liberman & Trope, 1998). Brand engagement may be represented in terms of designing products (i.e., a subordinate goal) or signaling competence (i.e., a superordinate goal). Thus, consumers’ consideration of desirability (i.e., perceived value of engagement) is built upon their considerations of feasibility (i.e., perceived probability of success). Only with a certain level of probability of success in completing creative tasks can consumers infer value (i.e., enjoyment, satisfaction, a sense of competence) from their engagement. That is, perceived probability has a causal positive effect on perceived value, not the other way around. Thus, taking the arguments above together, we postulate:

**H4:** *The effect of effort level on willingness to engage may be serially mediated by the perceived probability of success and perceived value of engagement. In other words, the two mediators operate in tandem such that the expected effort level negatively affects the perceived probability of success, which exerts a positive impact on the perceived value of engagement and then on willingness to engage.*

## 2.3 | Consumer mindsets and malleable interpretations of expected effort

### 2.3.1 | Consumer mindsets and perceived probability of success

As two components in the expectancy–value theory, one's perceptions of probability and value may be shaped by individual factors (Eccles & Wigfield, 2002; Wigfield & Eccles, 2000). Implicit theories (Dweck et al., 1995a, 1995b) that also take a cognitive approach to study motivation address one of these individual factors: consumer mindsets (fixed vs. growth). In general, individuals with a fixed mindset believe that human attributes (e.g., fate, morality, ability) are innate and fixed, whereas those with a growth mindset perceive these attributes to be malleable and cultivable over time (Dweck et al., 1995a, 1995b). Those subscribing to a fixed mindset hesitate to take a challenge that requires effort, and tend to focus on the outcome of a task; in contrast, those gravitating toward a growth mindset like being challenged, and focus more on the process of completing the task (Butler, 2000; Dweck et al., 1995b; Jain et al., 2009; Mathur et al., 2016). In other words, relative to a fixed mindset, a growth mindset is associated with greater elaboration on the process and thus more attention to concrete and detailed steps (oftentimes implying effort) to achieve a goal. According to Wakslak and Trope (2009), subjective probability estimation can be experienced as a function of concreteness of an event, in the way that the event seems more likely to happen when people's thinking about it is concrete (vs. abstract). So, a high level of required effort does not necessarily denote a low probability of success for growth mindset individuals. Consequently, we expect a growth mindset to attenuate the negative effect of effort level on the perceived probability of success.

**H5:** *Consumer mindsets moderate the negative effect of expected effort level on the perceived probability of success, such that the negative effect will be attenuated for growth (vs. fixed) mindset consumers.*

### 2.3.2 | Consumer mindsets and perceived value of engagement

Notwithstanding the general inclination of humans to choose the path of least effort (Fiske & Taylor, 1984; Zipf, 1949), effort does not always mean a cost. Required effort is subject to different interpretations. For example, individuals hold different lay beliefs about hard work ("good-art-takes-effort" vs. "good-art-takes-talent"), and they apply these beliefs as inference rules to make judgments ("high effort = high quality" vs. "high effort = low quality") based on required effort (Cho & Schwarz, 2008; Kruger et al., 2004). Tsay and Banaji (2011) show that people have a "naturalness bias" when evaluating sources of achievement, preferring innate ability (natural talents) over effort (hardworking strivers). Some individuals interpret their

own performance in a zero-sum manner such that high effort compensates for low ability or high ability requires minimal effort, and they even withdraw effort to protect their competence image (Jones, 1989). In contrast, some other individuals, for instance, those who subscribe to the Protestant Work Ethic (Weber, 1930), have positive appraisals of effort and consider hard work and delay of gratification as important values. Influenced by the Calvinistic doctrine, these individuals avoid idleness and waste and believe that hard work is a conduit to honoring God. In a nutshell, effort may have positive connotations and be highly valued at least in some circumstances.

These contrasting views suggest that the key to the malleability of interpretations of required effort and perceived value is how people perceive the relationship between effort and ability (zero-sum vs. positive-sum), especially in the context (e.g., co-creation of products and ads) that requires both creativity and labor that executes creative ideas. Fulfillment of competence-centered needs is of significance in determining the positive value of engagement. Brand engagement is often propelled by seeking a sense of accomplishment and an opportunity for knowledge acquisition (Franke et al., 2010; Hoyer et al., 2010). According to implicit theories (Dweck et al., 1995a, 1995b), different mindsets (fixed vs. growth) interpret the effort–ability relationship differently. Fixed mindset individuals consider ability as an unchangeable and uncontrollable quality, and they tend to signal their competence to self-enhance and withdraw effort when they are stricken by difficulties. In contrast, growth mindset individuals deem ability as a changeable and controllable trait, and they often endeavor to increase competence by learning and think of challenges as opportunities for learning new skills (Blackwell et al., 2007; Dweck & Leggett, 1988; Dweck et al., 1995a, 1995b; Mathur et al., 2016).

Relatedly, those with a fixed mindset about ability view much effort as a cue of lacking abilities (e.g., "When I work hard at my schoolwork it makes me feel like I'm not very smart."), and they tend to achieve goals with minimum effort; while their growth mindset counterparts deem effort as a path to mastery (e.g., "The harder you work at something, the better you'll be at it."), and point to the importance of effort in their goal pursuits (Blackwell et al., 2007; Dweck, 2000; Dweck & Molden, 2017, p. 137; Mathur et al., 2016; Miele & Molden, 2010; Murphy & Dweck, 2016). In summary, for fixed mindset consumers, effort is futile in enhancing ability and even compromises their positive image of competence, one critical aspect of engagement value. Conversely, for growth mindset consumers, effort is instrumental in enhancing ability and does not necessarily indicate the negative value, as expenditure of effort does not indicate a lack of competence but instead implies growth in competence.

**H6:** *Consumer mindsets moderate the negative effect of expected effort level on the perceived value of engagement, such that the negative effect will be attenuated for growth (vs. fixed) mindset consumers.*

To test the proposed hypotheses, we conducted three experiments using student and online opt-in samples. North American undergraduate students participated in Experiment 1 for course credit (educational benefit), and ordinary consumers (also called “workers”) on Prolific partook in Experiments 2 and 3 for monetary compensation (financial benefit). In a meta-analysis about consumer engagement, student versus nonstudent samples do not yield significant differences (Barari et al., 2020). These two types of samples differ in many aspects (see Goodman & Paolacci, 2017 for a brief review). Relevant to our research, student samples generally have a higher level of self-esteem, but nonstudent samples have greater internet and scientific knowledge (Goodman & Paolacci, 2017). Therefore, we controlled self-esteem in Experiment 1 and background knowledge (that was incorporated in the measures of engagement experiences) in Experiments 2 and 3. In hope of increasing representativeness and generalizability, we did not just rely on student subjects. Crowdsourcing websites such as Prolific provide participants with more diverse backgrounds (Goodman & Paolacci, 2017), and thus more heterogeneous responses may be collected. When it comes to compensation for participation, we do not expect significant differences in the effects of the two types of incentives (course credit vs. money) on the willingness to engage. The financial incentives we employed were general incentives in nature, and they do not directly pertain to the decision on engagement or the performance in engagement tasks. The use of money does not bias respondents and create demand effects when the incentive is not decision-based (Eckerd et al., 2020).

The expected effort level was manipulated in two different engagement situations: (a) designing products using firm-furnished toolkits or configurators (Experiments 1 and 2) and (b) designing ads by integrating personal ideas, thoughts, skillsets, and perspectives (Experiment 3). The moderator (consumer mindsets) was measured and primed respectively in Experiments 2 and 3. Table 1 shows an overview of the three experiments.

### 3 | EXPERIMENT 1: SERIAL MEDIATION

This experiment sought to provide initial support for the hypothesized mechanisms that underlie the effect of effort level on consumers' intention to engage. Specifically, the effect is mediated by the perceived probability of success and perceived value of engagement. Experiment 1 also included global self-esteem (Rosenberg, 1965) as a control variable to test participants' overall evaluation of themselves. It is possible that the more positive the evaluation, the more confident individuals become (Campbell, 1990). Thus, high self-esteem may boost achievement motivation that is realized through engaging in creative tasks with firms. Put differently, the higher self-esteem consumers have, the more likely they will engage.

TABLE 1 An overview of the three experiments

| Experiments | Samples and characteristics   | Purposes   | Effort manipulations                         | Control variables              | Hypotheses supported |
|-------------|---|--|--|--------------------------------|----------------------|
| 1           | <ul style="list-style-type: none"> <li>• Student sample</li> <li>• 164 North American university undergraduates for course credit</li> <li>• 59.76% women</li> <li>• <math>M_{\text{age}} = 20.81</math></li> </ul> | a. Test serial mediation   | Imagine a pen-customization task             | Global self-esteem             | H1, H2, H4           |
| 2           | <ul style="list-style-type: none"> <li>• Online opt-in sample</li> <li>• 289 Prolific workers for monetary compensation (£1.00)</li> <li>• 47.06% women</li> <li>• <math>M_{\text{age}} = 32.01</math></li> </ul>   | a. Replicate Experiment 1<br>b. Rule out an alternate explanation (negative mood)<br>c. Test moderation (measuring mindsets) | The same as Experiment 1                     | Previous engagement experience | H1, H2, H4           |
| 3           | <ul style="list-style-type: none"> <li>• Online opt-in sample</li> <li>• 474 Prolific workers for monetary compensation (£1.00)</li> <li>• 57.17% women</li> <li>• <math>M_{\text{age}} = 35.04</math></li> </ul>   | a. Replicate Experiments 2 and 3<br>b. Test moderation (priming mindsets)  | Imagine a scenario of designing creative ads | Previous engagement experience | H1, H2, H4, H6       |



### 3.1 | Method

A total of 164 undergraduates (59.76% women, three participants preferred not to disclose their gender, and one participant indicated no option that applied to them;  $M_{\text{age}} = 20.81$ ,  $SD = 1.89$ , four participants did not provide their age) at a North American university participated in exchange for course credit. As an attention check, we asked all participants to ignore 13 listed items about activities and instead type "I will pay attention" in the space next to "Other" (Yeomans, 2019). Twenty-six participants failed to pass the attention check, and their data were removed from further analysis.

Participants were randomly assigned to either the low effort or the high effort condition. Experiment 1 described a pen-customization task that was based on the simulated toolkit designed by Franke et al. (2009). To make sure that their toolkit design was realistic, Franke et al. (2009) evaluated 53 web-based toolkits as well as consulted three market experts. To manipulate the expected effort level, we asked all participants to imagine that they will customize and tailor a fountain pen to their tastes and needs from elements defined by the manufacturer. Aside from reading the description of the task, they were also presented with an informative picture to help them visualize (a) the different elements of the to-be-customized pen, such as shapes, materials, colors, texts, fonts, and the nib sizes and (b) the number of choices that should be considered for designing the feature for each element. The effort level was manipulated by varying (a) the amount of time required to complete the task and (b) the number of choices being considered. Time is a common measure of effort (Sitzmann & Ely, 2011) but insufficient to capture the intensity that tasks bring to participants (Fisher & Ford, 1998; Gielnik et al., 2015; Kanfer & Ackerman, 1989). Varying the size of the choice set is another widely used way to manipulate effort (e.g., Iyengar & Lepper, 2000) through changing the cognitive resources required. In our manipulation of effort level, we integrated the components about both time and choice set. Participants in the low effort condition read: "Only a small amount of time is required to complete the customization process, as you do not need to choose the features for each element from a large set of choices or overcome complex challenges in this process." Those in the high effort condition read: "A considerable amount of time is required to complete the customization process, as you need to choose the features for each element from a large set of choices or overcome complex challenges in this process."

The effectiveness of effort level manipulation was checked through the measure of effort level that was rewritten based on Franke and Schreier (2010): "This design task requires much effort," and "This design task is exhausting." Responses were made on 5-point scales, 1 = "strongly disagree," and 5 = "strongly agree" ( $\alpha = 0.77$ ). The scores for these two items were averaged to form a measure of effort level. On a scale from 1 = "not at all" to 7 = "very much," participants indicated their perceived probability of completing the task successfully. They responded to three items ( $\alpha = 0.78$ ) that tested perceived value of engagement: "The extent to which engaging in this task would be enjoyable," "The extent to

which engaging in this task would provide you with a sense of competence," and "The extent to which you think engaging in this task is valuable." Each item was followed by a 7-point scale with the anchors: 1 = "definitely not," 7 = "definitely." On a 7-point scale (1 = "definitely not," 7 = "definitely will"), participants indicated their willingness to engage, answering the question: "Would you like to engage in this task?"

Additionally, participants completed Rosenberg's (1965) 5-point self-esteem scale that is a well-validated measure of global self-esteem ( $\alpha = 0.90$ ; 1 = "strongly agree," 5 = "strongly disagree"). Global self-esteem (Rosenberg, 1965) served as a covariate to increase the accuracy of our analysis results. Participants responded to the degree to which they agreed with 10 statements. Five of them were positively described, and five other statements were negatively framed and responses were reverse-coded. Some sample questions are (a) "On the whole, I am satisfied with myself," (b) "I am able to do things as well as most other people," (c) "I certainly feel useless at times," and (d) "All in all, I am inclined to feel that I am a failure." Representing a chronic trait (that should thus not be affected by the effort level manipulation), the global self-esteem scale (Rosenberg, 1965) helped detect one's overall evaluation of the self in terms of good qualities such as abilities or competencies. Such evaluation may affect the results of Experiment 1 in that those individuals with high global self-esteem are generally confident and tend to engage with firms. At the end of Experiment 1, participants were asked to provide their demographic information including age and gender.

### 3.2 | Results and discussion

#### 3.2.1 | Effort level manipulation check

A one-way analysis of variance (ANOVA) revealed that participants in the low effort condition perceived less effort ( $M_{\text{low}} = 3.00$ ,  $SD = 0.93$ ) than did those in the high effort condition ( $M_{\text{high}} = 3.61$ ,  $SD = 0.10$ ),  $F(1, 162) = 18.19$ ,  $p < 0.001$ ,  $\eta^2 = 0.101$ . Therefore, the effort manipulation in this experiment was effective.

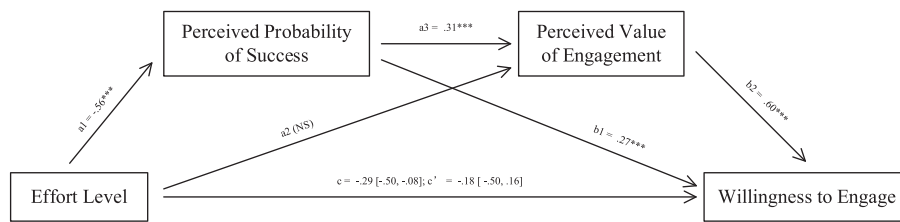
#### 3.2.2 | Perceived probability of success

An ANOVA revealed a significant effect of effort level on perceived probability of success. Participants in the low effort condition reported a significantly lower probability of success ( $M_{\text{low}} = 5.94$ ,  $SD = 0.97$ ) than did participants in the high effort condition ( $M_{\text{high}} = 5.23$ ,  $SD = 1.42$ ),  $F(1, 162) = 13.91$ ,  $p < 0.001$ ,  $\eta^2 = 0.079$ .

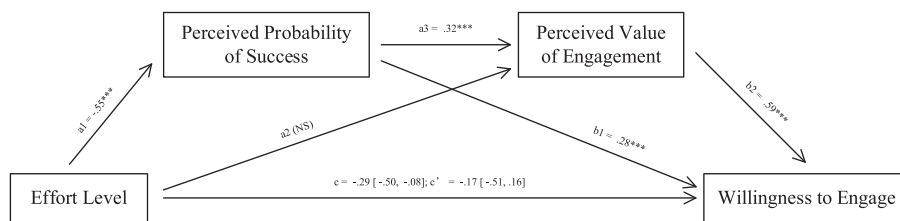
#### 3.2.3 | Perceived value of engagement

An ANOVA revealed that there was no significant difference in perceived value of engagement between the low ( $M_{\text{low}} = 4.50$ ,  $SD = 1.11$ ) and high effort conditions ( $M_{\text{high}} = 4.20$ ,  $SD = 1.42$ ),  $F(1, 162) = 2.22$ , NS.

(a) Results without global self-esteem as a covariate



(b) Results with global self-esteem as a covariate



**FIGURE 1** Mediation results with estimated coefficients (Experiment 1). (a) Results without global self-esteem as a covariate. (b) Results with global self-esteem as a covariate. Note: The low (high) effort level was coded as 0 (1);  $a_1$  and  $a_2$  are the effects of the independent variable on mediators;  $a_3$  is the effect of the perceived probability of success on the perceived value of engagement;  $b_1$  and  $b_2$  represent the effects of mediators on the dependent variable;  $c$  ( $c'$ ) is the total (direct) effect of the independent variable on the dependent variable. The path coefficients are partially standardized  $\beta$ s, as the independent variable effort level is dichotomous. NS indicates a nonsignificant result. The asterisk \* denotes  $p < 0.05$ , \*\* means  $p < 0.01$ , and \*\*\* indicates  $p < 0.001$ . The numbers in the square brackets represent 95% CIs. CI, confidence interval

### 3.2.4 | Willingness to engage

An ANOVA revealed a significant effect of effort level on willingness to engage. Participants in the low effort condition were significantly less likely to engage ( $M_{\text{low}} = 4.53$ ,  $SD = 1.31$ ) than were participants in the high effort condition ( $M_{\text{high}} = 3.91$ ,  $SD = 1.66$ ),  $F(1, 162) = 7.03$ ,  $p < 0.01$ ,  $\eta^2 = 0.042$ . An analysis of covariance (ANCOVA) with global self-esteem (Rosenberg, 1965) as a covariate yielded almost the same result ( $M_{\text{low}} = 4.52$ ,  $M_{\text{high}} = 3.91$ ;  $F(1, 161) = 6.93$ ,  $p \leq 0.01$ ,  $\eta_p^2 = 0.041$ ), where the means have been adjusted for the covariate that was not significant (effect =  $-0.06$ ,  $SE = 0.24$ ,  $t = -0.25$ , NS). Age and gender as control variables did not reveal significant effects,  $p_s > 0.18$ .

### 3.2.5 | Mediation analyses

As explained above in our reasoning of Hypothesis 4, we expect serial (rather than parallel) mediation. We conducted two serial mediation analyses (using the macro PROCESS, model 6; Hayes, 2018), one with and one without controlling for global self-esteem (Rosenberg, 1965) as a covariate. The 95% Monte Carlo confidence intervals (CIs) were generated based on 10,000 bootstrap iterations. The dependent variable was willingness to engage. Two mediators included perceived probability of success and perceived value of engagement. The effect of

effort level on willingness to engage went through these two mediators. The independent variable was a dummy variable, with low (high) effort being coded as 0 (1). As demonstrated Figure 1a,b, the results for both analyses without and with global self-esteem (Rosenberg, 1965) as the covariate were almost the same, except for the slight differences regarding the effect of the perceived probability of success (i.e., the first mediator in the model) on the perceived value of engagement (i.e., the second mediator). The covariate was not significant except for the effect of effort level on perceived probability of success (effect<sup>1</sup> =  $-0.19$ ,  $SE = 0.20$ ,  $t = -2.52$ ,  $p = 0.01$ ). We thus only report below the results for the serial mediation analysis without the covariate. (Figure 1b provides more details about the situation when the covariate was included.)

There was a significant negative effect of the effort level (low vs. high) on willingness to engage (total effect  $c = -0.29$ ,  $SE = 0.11$ ,  $CI_{95} = [-0.50, -0.08]$ ), but this effect became nonsignificant (direct effect  $c' = -0.18$ ,  $SE = 0.17$ ,  $CI_{95} = [-0.50, 0.16]$ ) after we included two mediators, perceived probability of success and perceived value of engagement. Therefore, the first hypothesis was supported, which predicts a negative impact of effort level on consumers' willingness to engage. The analysis results also confirmed the proposed mechanisms underlying the effect of effort level on the engagement

<sup>1</sup>All coefficients reported in this paper were standardized. Since the independent variable (effort level) is dichotomous, the standardized coefficients are in a partially standardized form.

intention. Specifically, the effort level significantly decreased perceived probability of success ( $a1 = -0.56, p < 0.001$ ) but did not directly affect perceived value of engagement ( $a2 = -0.06, NS$ ). That is, the second hypothesis was supported, but the third one was not supported. The effect of effort level on perceived probability of success was reduced to  $-0.55$  when global self-esteem (Rosenberg, 1965) was considered. Perceiving a higher probability of success, participants tended to assign more value to the engagement task ( $a3 = 0.31, p < 0.001$ ). As perceived probability and perceived value increased ( $b1 = 0.27, p < 0.001$ ;  $b2 = 0.60, p < 0.001$ ), participants were more willing to perform the task.

The 95% CI for the indirect effects suggested two routes of mediation: Effort Level  $\rightarrow$  Perceived Probability  $\rightarrow$  Willingness to Engage (indirect effect =  $-0.15, SE = 0.06$ ;  $CI_{95} = [-0.28, -0.06]$ ); Effort Level  $\rightarrow$  Perceived Probability  $\rightarrow$  Perceived Value  $\rightarrow$  Willingness to Engage (indirect effect =  $-0.11, SE = 0.04$ ; 95%  $CI_{95} = [-0.20, -0.04]$ ). We also conducted another serial mediation analysis by changing the order of two mediators, that is, perceived value as the first mediator and perceived probability as the second one. This analysis did not support the route: Effort Level  $\rightarrow$  Perceived Value  $\rightarrow$  Perceived Probability  $\rightarrow$  Willingness to Engage (indirect effect =  $-0.02, SE = 0.01$ ;  $CI_{95} = [-0.05, 0.01]$ ).

The results from the mediation analyses indicate that only perceived probability served as an independent mediator. The mediating role of perceived value depended on perceived probability (Hypothesis 4). The higher effort led to lower perceived probability, which then resulted in lower perceived value and consequently lower willingness to engage.

In closing, the results from serial mediation analyses supported Hypotheses 1, 2, and 4, but not Hypothesis 3. The negative effect of effort level took place solely through perceived probability or serially through perceived probability and perceived value.

## 4 | EXPERIMENT 2: MODERATED MEDIATION WITH MINDSETS BEING MEASURED

Experiment 2 first replicated Experiment 1 to offer additional support for the proposed serial mediation model and then tested the moderating role of consumer mindsets. It was hypothesized that mindsets moderate the effect of effort level on two mediators, which are perceived probability of success and perceived value of engagement. We manipulated the independent variable (effort level) and measured the two mediators, the moderator (consumer mindsets), and the dependent variable (willingness to engage). Unlike Experiment 1, this experiment recruited participants from ordinary consumers. In Experiment 2, we measured negative mood to ensure that it was not an alternate explanation for the effect of effort level on consumers' willingness to engage. Blut et al. (2020) uncover that consumers experience negative feelings when the effort level is increased in consumer participation in service co-development. Similarly, an onerous to-do engagement task would make consumers

upset and nervous and induce their aversive feelings. One may speculate about the negative impact of negative moods on engagement intention. We also measured previous experience as a covariate. If consumers have experience in customizing products, they may be more familiar with the process and become more likely to endorse another customization task.

### 4.1 | Method

Two hundred eighty-nine Prolific workers (47.06% women, two participants preferred not to disclose their gender;  $M_{age} = 32.01, SD = 10.44$ ) completed this experiment for monetary compensation (£1.00). We initially recruited 300 participants, but 11 participants were excluded because they failed to pass the attention check. Instead of checking participants' attention at the beginning (as we did in Experiment 1), Experiment 2 checked their attention after the dependent variable measure. Aside from the instructional manipulation check question that was adopted in Experiment 1 (see Oppenheimer et al., 2009; Yeomans, 2019), we asked participants to answer "How serious were you in completing this questionnaire?" (1 = "not at all serious," 7 = "very serious"). Those participants with scores on seriousness less than four were excluded. This experiment employed a single-factor (i.e., effort level) between-subjects design. To manipulate the level of effort, we followed the same procedure as in Experiment 1, and randomly assigned participants to two effort conditions (low vs. high).

Participants responded to an eight-item questionnaire measuring their beliefs about the changeability of intelligence. There are many versions of mindset measures to detect beliefs about diverse human attributes such as morality and intelligence. Since engaging in creative tasks requires creativity that is germane to lay beliefs about intelligence, we adopted Dweck's (2000) measure regarding mindsets (originally labeled as "naive theories of intelligence" and indicating chronic mindsets). More details about the reliability and validity of this measure are discussed by Levy et al. (1998). Dweck's (2000) measure includes eight statements, such as "You have a certain amount of intelligence, and you can't really do much to change it," and "No matter who you are, you can significantly change your intelligence level" (reverse scored). Participants rated their agreement with these statements on a 6-point Likert scale, 1 = "strongly disagree," 6 = "strongly agree." The ratings on four items measuring a growth mindset were reverse-coded. All ratings were averaged to construct an index of each participant's beliefs about the malleability of intelligence ( $\alpha = 0.95$ ). Higher (lower) averaged scores represent greater subscription of fixed (growth) mindsets.

As an effort manipulation check, participants indicated their agreement over two statements ( $\alpha = 0.83$ ): "This design task requires much effort," and "This design task is exhausting." (1 = "strongly disagree," and 5 = "strongly agree"). The measures of (a) perceived probability of success (1 = "very unlikely," 7 = "very likely"), (b) perceived value of engagement (1 = "definitely not," 7 = "definitely will";  $\alpha = 0.77$ ), and (c) willingness to engage (1 = "definitely not," 7 = "definitely") were the same as those used in Experiment 1.



The second experiment tested the potential confounding factor, which is negative mood. Perceiving high effort required by engagement tasks may make consumers have negative feelings such as frustration. We examined this confounder by presenting to participants five negative words such as “upset” and “nervous.” These words were adapted from the Positive Affect Negative Affect Schedule (PANAS; Watson et al., 1988). Participants indicated the extent to which they felt the way as the words described at the moment when they completed the questionnaire. One index was created by averaging scores on negative feelings ( $\alpha = 0.83$ ). According to Crawford and Henry (2004), the PANAS is reliable and not greatly influenced by demographic variables.

In the first experiment, we did not take into consideration participants' past experiences in engaging in customizing products. To examine whether this factor affected our findings, we measured a control variable by asking participants “How much experience do you have in customizing products by using the items provided by companies?” (1 = “none,” 10 = “extremely much”). In the end, participants provided their demographic information such as age, gender, and spoken language.

## 4.2 | Results and discussion

### 4.2.1 | Effort level manipulation check

The manipulation was effective. Participants in the low effort condition ( $M_{\text{low}} = 2.46$ ,  $SD = 1.08$ ) perceived less effort than did those in the high effort condition ( $M_{\text{high}} = 3.20$ ,  $SD = 1.04$ ),  $F(1, 287) = 35.62$ ,  $p < 0.001$ ,  $\eta^2 = 0.110$ .

### 4.2.2 | Perceived probability of success

There was a significant negative effect of effort level on perceived probability of success. Participants in the low effort condition reported a significantly lower probability of success ( $M_{\text{low}} = 6.43$ ,  $SD = 1.00$ ) than did participants in the high effort condition ( $M_{\text{high}} = 6.18$ ,  $SD = 1.11$ ),  $F(1, 287) = 4.02$ ,  $p = 0.046$ ,  $\eta^2 = 0.014$ .

### 4.2.3 | Perceived value of engagement

A significant negative effect of effort level on perceived value of engagement was found ( $M_{\text{low}} = 4.22$ ,  $SD_{\text{low}} = 1.30$ ;  $M_{\text{high}} = 3.91$ ,  $SD_{\text{high}} = 1.29$ ),  $F(1, 287) = 4.15$ ,  $p = 0.043$ ,  $\eta^2 = 0.043$ .

### 4.2.4 | Willingness to engage

We identified a significant negative effect of effort level on willingness to engage ( $M_{\text{low}} = 4.41$ ,  $SD_{\text{low}} = 1.84$ ;  $M_{\text{high}} = 3.84$ ,  $SD_{\text{high}} = 1.92$ ),  $F(1, 287) = 6.73$ ,  $p = 0.01$ ,  $\eta^2 = 0.023$ . A one-way ANCOVA, with one's experience in customizing products as a covariate, revealed the

same significant pattern,  $F(1, 286) = 6.87$ ,  $p = 0.009 < 0.01$ ,  $\eta_p^2 = 0.023$ . This covariate was significant in the model, effect = 0.19,  $SE = 0.04$ ,  $t = 4.51$ ,  $p < 0.001$ ,  $\eta_p^2 = 0.066$ . Age and gender as control variables did not reveal significant effects,  $ps > 0.35$ .

Next, we conducted several mediation analyses. Monte Carlo confidence intervals (CIs) were generated based on 10,000 bootstrap iterations. Below are the relevant results.

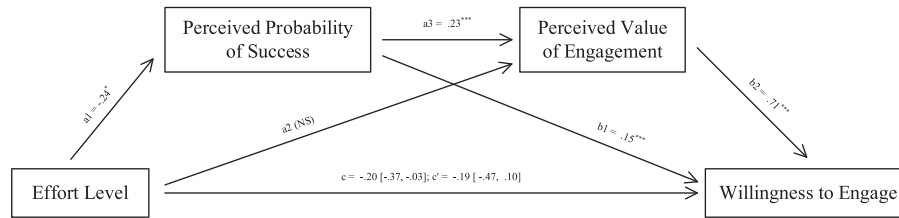
### 4.2.5 | Mediation analyses

We ran two serial mediation analyses (PROCESS model 6; Hayes, 2018)—with and without controlling for experience in customizing products as a covariate—to examine the mediating effects of perceived probability of success and perceived value of engagement between effort level and willingness to engage. The results of mediation analyses in both situations are demonstrated in Figure 2a,b. The independent variable, effort level, was dummy coded with the low (high) effort being coded as 0 (1). For comparison purposes, we report the results of the serial mediation analysis without the covariate (Figure 2a) and then the results with it (Figure 2). In general, the patterns in these results without and with the covariate replicated the patterns in Experiment 1.

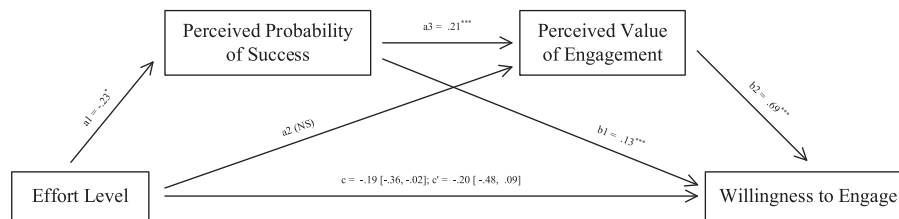
When the covariate was excluded, the total effect model reconfirmed a significant negative effect of the effort level (low vs. high) on willingness to engage (Hypothesis 1),  $c = -0.20$ ,  $SE = 0.09$ ,  $CI_{95} = [-0.37, -0.03]$ , but the direct effect model found that this negative effect was not significant ( $c' = -0.19$ ,  $SE = 0.15$ ,  $CI_{95} = [-0.47, 0.10]$ ) once we took into account two mediators. The effort level significantly decreased perceived probability of success ( $a1 = -0.24$ ,  $p = 0.046$ ), but did not exert a significant impact on perceived value of engagement ( $a2 = -0.18$ ,  $p = 0.111$ ). Perceived probability of success had a significant positive influence on perceived value of engagement ( $a3 = 0.23$ ,  $p < 0.001$ ). Both of them affected willingness to engage ( $b1 = 0.15$ ,  $p < 0.001$ ;  $b2 = 0.71$ ,  $p < 0.001$ ). The 95% CI for the indirect effects suggested two routes of mediation: Effort Level  $\rightarrow$  Perceived Probability  $\rightarrow$  Willingness to Engage (indirect effect =  $-0.04$ ,  $SE = 0.02$ ;  $CI_{95} = [-0.081, -0.001]$ ); Effort Level  $\rightarrow$  Perceived Probability  $\rightarrow$  Perceived Value  $\rightarrow$  Willingness to Engage (indirect effect =  $-0.04$ ,  $SE = 0.02$ ;  $CI_{95} = [-0.082, -0.001]$ ). To check causality, we then switched the order of two mediators in another serial mediation analysis. Perceived value of engagement was put before perceived probability of success. This analysis did not support the route: Effort Level  $\rightarrow$  Perceived Value  $\rightarrow$  Perceived Probability  $\rightarrow$  Willingness to Engage (indirect effect =  $-0.01$ ,  $SE = 0.01$ ;  $CI_{95} = [-0.021, 0]$ ).

When the covariate (one's experience in customizing products) was included, effort level (low vs. high) had a significant negative effect on willingness to engage (Hypothesis 1), total effect  $c = -0.19$ ,  $SE = 0.09$ ,  $CI_{95} = [-0.36, -0.02]$ . This negative effect was nonsignificant (direct effect  $c' = -0.20$ ,  $SE = 0.14$ ,

(a) Results without experience in customizing products as a covariate



(b) Results with experience in customizing products as a covariate



**FIGURE 2** Mediation results with estimated coefficients (Experiment 2). (a) Results without experience in customizing products as a covariate. (b) Results with experience in customizing products as a covariate. Note: The low (high) effort level was coded as 0 (1);  $a_1$  and  $a_2$  are the effects of the independent variable on mediators;  $a_3$  is the effect of the perceived probability of success on the perceived value of engagement;  $b_1$  and  $b_2$  represent the effects of mediators on the dependent variable;  $c$  ( $c'$ ) is the total (direct) effect of the independent variable on the dependent variable. The path coefficients are partially standardized  $\beta$ s, as the independent variable effort level is dichotomous. NS indicates a nonsignificant result. The asterisk \* denotes  $p < 0.05$ , \*\* means  $p < 0.01$ , and \*\*\* indicates  $p < 0.001$ . The numbers in the square brackets represent 95% CIs. CI, confidence interval

$CI_{95} = [-0.48, 0.09]$ ) after two mediators came into play. So, our proposed mediators explained the mechanisms underlying the effect of effort level on consumers' willingness to engage. The negative impact of effort level on perceived probability of success was significant,  $a_1 = -0.23$ ,  $p = 0.047$ ; the effect of one's experience in customizing products on perceived probability of success was significant, effect = 0.19,  $SE = 0.02$ ,  $t = 3.33$ ,  $p < 0.001$ . However, the effect of effort level on perceived value of engagement was not significant ( $a_2 = -0.19$ , NS), and perceived probability of success had a positive influence on perceived value of engagement ( $a_3 = 0.21$ ,  $p < 0.001$ ). For both impacts, the influence of the covariate on perceived value of engagement was significant, effect = 0.14,  $SE = 0.03$ ,  $t = 2.36$ ,  $p = 0.019$ . Both of these two mediators affected willingness to engage ( $b_1 = 0.13$ ,  $p < 0.001$ ;  $b_2 = 0.69$ ,  $p < 0.001$ ), and the covariate significantly influenced engagement intention, effect = 0.11,  $SE = 0.03$ ,  $t = 2.78$ ,  $p = 0.006 < 0.01$ . Note that with controlling product-customization experience, the 95% CI for the indirect effects did not support any routes of mediation: Effort Level  $\rightarrow$  Perceived Probability  $\rightarrow$  Willingness to Engage (indirect effect = -0.03,  $SE = 0.02$ ;  $CI_{95} = [-0.073, 0]$ ); Effort Level  $\rightarrow$  Perceived Value  $\rightarrow$  Willingness to Engage (indirect effect = -0.13,  $SE = 0.08$ ;  $CI_{95} = [-0.284, 0.028]$ ); Effort Level  $\rightarrow$  Perceived Probability  $\rightarrow$  Perceived Value  $\rightarrow$  Willingness to Engage (indirect effect = -0.03,  $SE = 0.02$ ; 95%  $CI_{95} = [-0.073, 0]$ ).

In addition to supporting Hypothesis 1, the results above also indicated that perceived probability of success can independently mediate the effect of effort level on consumers' intention to create (i.e., supporting Hypothesis 2). However, the mediating role of perceived value of engagement was not independent (i.e., not supporting Hypothesis 3) but relied on perceived probability of success (i.e., supporting Hypothesis 4).

#### 4.2.6 | Moderation and moderated mediation analyses

Next, we performed two moderation analyses (PROCESS model 1; Hayes, 2018) and a moderated mediation analysis (PROCESS model 84; Hayes, 2018) based on 10,000 bootstrapped samples. The results did not support a significant moderating effect of consumer mindsets on the effect of effort level (a) on perceived probability of success (effect = -0.19,  $SE = 0.11$ ,  $t = -1.82$ , NS) and (b) on perceived engagement value (effect = -0.07,  $SE = 0.13$ ,  $t = -0.56$ , NS). The results of moderated mediation analysis were not significant regarding the moderating effect of consumer mindsets on (a) the mediating effect of perceived probability of success on willingness to engage (index = -0.05,  $SE = 0.04$ ,  $CI_{95} = [-0.131, 0.008]$ ), (b) the mediating effect of perceived engagement value on willingness to engage (index = -0.02,  $SE = 0.13$ ,  $CI_{95} = [-0.279, 0.236]$ ), and (c) the serial mediating

effects of perceived probability and engagement value (index =  $-0.06$ ,  $SE = 0.04$ ,  $CI_{95} [-0.144, 0.008]$ )<sup>2</sup>. Therefore, in the case of the chronic type of consumer mindsets, we did not find support for Hypotheses 5 and 6 that argue the moderating effect of mindsets.

#### 4.2.7 | Alternative explanation

A simple mediation analysis (PROCESS model 4; 10,000 bootstrapped samples; Hayes, 2018) did not identify negative mood as a potential mediator, indirect effect =  $-0.01$ ,  $SE = 0.01$ ;  $CI_{95} [-0.037, 0.017]$ .

### 5 | EXPERIMENT 3: MODERATED MEDIATION WITH MINDSETS BEING PRIMED

The third experiment further tested the moderating role of consumer mindsets. Unlike the second experiment that measured consumer mindsets (i.e., chronic mindsets), this experiment primed consumer mindsets (i.e., situational mindsets). Granting that mindsets are relatively stable, previous research has shown that mindsets can be situationally induced (see Dweck et al., 1995a, 1995b; Jain et al., 2009) by external stimuli such as scientifically proven persuasive materials (Levy et al., 1998; Plaks & Stecher, 2007). Experiment 3 controlled for participants' previous ad-related experience because the engagement task used to manipulate the effort level involved designing a creative ad. The covariate was measured through two items ( $\alpha = 0.79$ ) that captured participants' experience in advertising and designing restaurant-themed ads: "How much experience do you have in advertising?" (1 = no experience, 10 = extensive experience) and "How much experience do you have in designing ads related to restaurants?" (1 = no experience, 10 = extensive experience).

#### 5.1 | Method

Through Prolific, we recruited 474 participants (57.17% women, one participant preferred not to disclose their gender, and four participants indicated no option that applied to them;  $M_{age} = 35.04$ ,  $SD = 11.92$ , one participant wrongly keyboarded "97006"). On average, Experiment 3 took approximately 8 min of participants' time. They received £1.00 to compensate them for their participation. We initially recruited 510 participants but excluded 36 participants who dropped out (7), completed the study within 3 min (7), failed to pass

attention checks (14), and/or came from repeated IP addresses that imply individual replications (8).

All participants were randomly assigned to a 2 (effort level: low vs. high)  $\times$  2 (mindset: fixed vs. growth) between-subjects design. They were told that the study was interested in understanding intelligence and collaboration. To prime mindsets,<sup>3</sup> we requested them to carefully read hypothetical science articles about the development of people's intelligence. The articles were developed based on Kim et al. (2018) and Plaks and Stecher (2007). The participants in the fixed mindset condition read the article that highlighted the following arguments: "intelligence seems to be rather fixed," and "neither environmental factors nor intense willpower appears to change this basic stability of intelligence." Those in the growth mindset condition read the article that emphasized the arguments: "intelligence seems to be rather malleable," and "intelligence is a product of willpower...as people age and develop, so does their intelligence." A measure of manipulation check was included to examine the extent to which participants believed that intellectual abilities are fixed and cannot be changed (1 = "not at all," 7 = "very much"). On a 7-point scale, they also responded to how attentive they were while reading the article (1 = "not at all attentive," 7 = "very attentive"). This question served as an attention check.

Different from the first and second experiments, Experiment 3 manipulated effort level by asking all participants to read a scenario<sup>4</sup> that described an engagement task. The task required them to come up with ideas for designing creative ads for a hypothetical restaurant called Go Big Bites. We varied effort level by differing (a) the number of ideas that participants were asked to provide and (b) the general description of the task. Participants in the low effort condition read: "Research shows that most people have *little difficulty* coming up with *only one idea*... *This task is relatively simple, requires no or little energy, and is relatively effortless. You do not become tired after performing this task.*" In contrast, those in the high effort condition read: "Research shows that most people have *difficulty* coming up with *five different ideas*... *This task is difficult, requires a substantial amount of energy, and is relatively effortful. You become tired after performing this task.*"

<sup>2</sup>In all of our statistical tests, we only interpreted "significance" based on our preset 95% CI and  $\alpha$  of 0.05, although a 90% CI (significance  $\alpha = 0.10$ ) supported significant moderating effects of consumer mindsets. Given the general difficulty in obtaining a significant moderating effect (Podsakoff et al., 1995), Malhotra et al. (2017) contend that "even at  $p \leq 0.10$ , empirical support for a moderating relationship may be quite important for theory building" (p. 23).

<sup>3</sup>To empirically confirm the effectiveness of mindsets manipulation, we conducted a pretest on 163 undergraduate students (58.3% women,  $M_{age} = 20.9$ ) at a North American university. Participants in the fixed (vs. growth) mindset condition had higher scores on the belief in unchangeable intelligence ( $M_{fixed} = 4.47$ ,  $SD_{fixed} = 1.46$ ;  $M_{growth} = 2.43$ ,  $SD_{growth} = 1.42$ ),  $F(1, 161) = 80.75$ ,  $p < 0.001$ ,  $\eta^2 = 0.334$ , indicating that the mindsets manipulation used in Experiment 3 was effective.

<sup>4</sup>The effectiveness of this new effort manipulation was examined in a pretest of 98 participants (44.9% women,  $M_{age} = 38.7$ ) on MTurk. We chose 99% approval rate and 5000 approved Human Intelligence Tasks (HITS) as selection criteria. Over a 9-point scale, participants in the low effort condition perceived less effort than those in the high effort condition ( $M_{low} = 4.58$ ,  $SD_{low} = 2.21$ ;  $M_{high} = 6.45$ ,  $SD_{high} = 2.04$ ),  $F(1, 96) = 18.931$ ,  $p < 0.001$ ,  $\eta^2 = 0.165$ . Although the examination of mediating effects was not its main purpose, this pretest did offer additional support for the mediation patterns revealed in all of the three main experiments. Based on mediation analyses (PROCESS model 6; Hayes, 2018; 10,000 samples), two paths of mediation were found: Effort Level  $\rightarrow$  Perceived Probability  $\rightarrow$  Willingness to Engage (indirect effect =  $-0.15$ ,  $SE = 0.09$ ;  $CI_{95} [-0.334, -0.003]$ ); Effort Level  $\rightarrow$  Perceived Probability  $\rightarrow$  Perceived Value  $\rightarrow$  Willingness to Engage (indirect effect =  $-0.10$ ,  $SE = 0.05$ ;  $CI_{95} [-0.199, -0.002]$ ).

All participants responded to a set of items regarding the scenario, which were different from those used in the first two experiments. For example, we changed the measure of perceived probability to a double-item measure. These items aimed to capture (a) the effectiveness of effort manipulation ("How difficult do you expect this task to be?" 1 = not at all difficult, 9 = very difficult; "How exhausting do you expect this task to be?" 1 = not at all exhausting, 9 = very exhausting;  $\alpha = 0.91$ ), (b) perceived probability of success ("How likely is it that you could successfully complete this task?" "How likely is it that you could provide more creative ideas than other consumers?" 1 = very unlikely, 7 = very likely;  $\alpha = 0.75$ ), (c) perceived value of engagement ("To what extent do you think this task would provide you with personal feelings of enjoyment?" "To what extent do you think this task would provide you with personal feelings of satisfaction?" 1 = not at all, 7 = very much;  $\alpha = 0.90$ ), and (d) willingness to engage ("Would you participate if you had a choice?" 1 = definitely not, 7 = definitely yes; "How likely would you be to participate?" 1 = very unlikely, 7 = very likely;  $\alpha = 0.97$ ). Participants next answered background questions about their age and gender.

## 5.2 | Results and discussion

### 5.2.1 | Manipulation check

The manipulations of both mindsets and effort level were effective. Participants in the fixed mindset condition indicated a stronger belief in unchangeability of intellectual abilities than did those in the growth mindset condition ( $M_{\text{fixed}} = 4.79$ ,  $SD_{\text{fixed}} = 1.50$ ;  $M_{\text{growth}} = 2.36$ ,  $SD_{\text{growth}} = 1.47$ ),  $F(1, 472) = 314.25$ ,  $p < 0.001$ ,  $\eta^2 = 0.400$ . Participants in the low effort condition perceived less effort than those in the high effort condition ( $M_{\text{low}} = 3.52$ ,  $SD_{\text{low}} = 2.03$ ;  $M_{\text{high}} = 6.55$ ;  $M_{\text{high}} = 1.80$ ),  $F(1, 472) = 296.36$ ,  $p < .001$ ,  $\eta^2 = 0.386$ . The manipulation of mindsets was implemented before that of effort level. This created the possibility that the mindset manipulation affected participants' assessment of the level of effort. We tested this possibility, and did not find a significant result,  $F(1, 470) = 0.718$ , NS. In addition, we found a nonsignificant effort and mindset interaction effect on their effort scores,  $F(1, 470) = 1.31$ , NS.

### 5.2.2 | Perceived probability of success

There was a significant negative effect of effort level on perceived probability of success ( $M_{\text{low}} = 4.73$ ,  $SD_{\text{low}} = 1.33$ ;  $M_{\text{high}} = 4.30$ ,  $SD_{\text{high}} = 1.55$ ),  $F(1, 472) = 10.52$ ,  $p = 0.001$ ,  $\eta^2 = 0.022$ .

### 5.2.3 | Perceived value of engagement

A nonsignificant negative effect of effort level on perceived value of engagement was found ( $M_{\text{low}} = 3.97$ ,  $SD_{\text{low}} = 1.58$ ;  $M_{\text{high}} = 3.85$ ,  $SD_{\text{high}} = 1.71$ ),  $F(1, 472) = 0.67$ , NS.

### 5.2.4 | Willingness to engage

We identified a significant negative effect of effort level on willingness to engage ( $M_{\text{low}} = 4.02$ ,  $SD_{\text{low}} = 1.94$ ;  $M_{\text{high}} = 3.53$ ,  $SD_{\text{high}} = 1.98$ ),  $F(1, 472) = 7.26$ ,  $p = 0.007$ ,  $\eta^2 = 0.015$ . A one-way ANCOVA, with one's ad-related experience as a covariate, revealed the same significant pattern,  $F(1, 471) = 9.25$ ,  $p = 0.002$ ,  $\eta_p^2 = 0.019$ . This covariate was significant in the model, effect = 0.32,  $SE = 0.05$ ,  $t = 6.80$ ,  $p < 0.001$ ,  $\eta_p^2 = 0.089$ . Age and gender as control variables did not reveal significant effects,  $ps > 0.42$ .

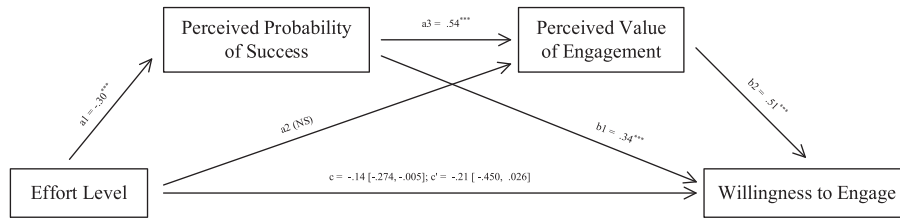
### 5.2.5 | Mediation analyses

We ran two serial mediation analyses (PROCESS model 6; Hayes, 2018; 10,000 bootstrap iterations) with and without ad-related experience as a covariate. The effort level was dummy coded with the low (high) effort being coded as 0 (1). Regarding these two situations, there were no differences in the general patterns of the results. Figure 3a,b demonstrates the results of the mediation analyses.

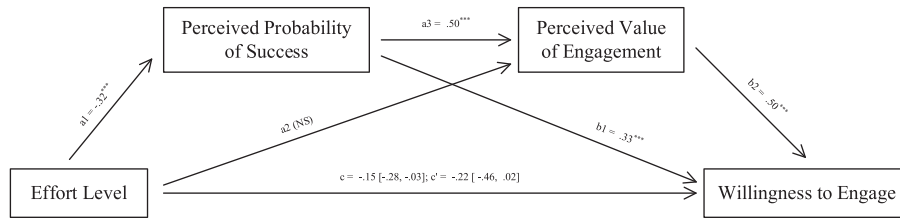
In the situation without the covariate (ad-related experience), the total effect model reconfirmed a significant negative effect of the effort level (low vs. high) on willingness to engage (Hypothesis 1), total effect  $c = -0.14$ ,  $SE = 0.07$ ,  $CI_{95} = [-0.274, -0.005]$ . This effect became nonsignificant (direct effect  $c' = -0.21$ ,  $SE = 0.12$ ,  $CI_{95} = [-0.450, 0.026]$ ) after we introduced two mediators, perceived probability of success and perceived value of engagement. This difference supported the proposed mechanisms underlying the effect of effort level on consumers' willingness to engage. The effort level significantly decreased perceived probability of success ( $a1 = -0.30$ ,  $p = 0.001$ ), but did not significantly influence perceived value of engagement ( $a2 = 0.09$ , NS). Perceived probability of success had a significant positive influence on perceived value of engagement ( $a3 = 0.54$ ,  $p < 0.001$ ). Both mediators affected willingness to engage ( $b1 = 0.34$ ,  $p < 0.001$ ;  $b2 = 0.51$ ,  $p < 0.001$ ). Two routes of mediation were supported: Effort Level  $\rightarrow$  Perceived Probability  $\rightarrow$  Willingness to Engage (indirect effect =  $-0.10$ ,  $SE = 0.04$ ;  $CI_{95} = [-0.173, -0.038]$ ); Effort Level  $\rightarrow$  Perceived Probability  $\rightarrow$  Perceived Value  $\rightarrow$  Willingness to Engage (indirect effect =  $-0.08$ ,  $SE = 0.03$ ;  $CI_{95} = [-0.134, -0.033]$ ). We ran another serial mediation analysis to examine causality, with the order of two mediators being switched, but did not find a significant path for Effort Level  $\rightarrow$  Perceived Value  $\rightarrow$  Perceived Probability  $\rightarrow$  Willingness to Engage (indirect effect =  $-0.01$ ,  $SE = 0.02$ ;  $CI_{95} = [-0.047, 0.020]$ ).

In the situation with the covariate, ad-related experience, effort level (low vs. high) significantly negatively affected consumers' propensity for engagement, total effect  $c = -0.15$ ,  $SE = 0.06$ ,  $CI_{95} = [-0.28, -0.03]$ . This effect was not significant (direct effect  $c' = -0.22$ ,  $SE = 0.12$ ,  $CI_{95} = [-0.46, 0.02]$ ) with two mediators being included. These results altogether supported our proposed mechanisms regarding the effect of effort level on engagement inclination. Effort level had a significant negative effect on perceived probability of success,  $a1 = -0.32$ ,  $p < 0.001$ ; the covariate had a significant effect,

(a) Results without ad-related experience as a covariate



(b) Results with ad-related experience as a covariate



**FIGURE 3** Mediation results with estimated coefficients (Experiment 3). (a) Results without ad-related experience as a covariate. (b) Results with ad-related experience as a covariate. Note: The low (high) effort level was coded as 0 (1);  $a1$  and  $a2$  are the effects of the independent variable on mediators;  $a3$  is the effect of the perceived probability of success on the perceived value of engagement;  $b1$  and  $b2$  represent the effects of mediators on the dependent variable;  $c$  ( $c'$ ) is the total (direct) effect of the independent variable on the dependent variable. The path coefficients are partially standardized betas, as the independent variable effort level is dichotomous. NS indicates a nonsignificant result. The asterisk \* denotes  $p < 0.05$ , \*\* means  $p < 0.01$ , and \*\*\* indicates  $p < 0.001$ . The numbers in the square brackets represent 95% CIs. CI, confidence interval

effect = 0.32,  $SE = 0.03$ ,  $t = 7.43$ ,  $p < 0.001$ . However, effort level had a nonsignificant effect on perceived value of engagement,  $a2 = 0.06$ , NS. Perceived probability of success exerted a significant positive influence on perceived value of engagement ( $a3 = 0.50$ ,  $p < 0.001$ ). For both effects, the covariate had a significant impact, effect = 0.15,  $SE = 0.04$ ,  $t = 3.69$ ,  $p < 0.001$ . Both mediators significantly influenced willingness to engage ( $b1 = 0.33$ ,  $p < 0.001$ ;  $b2 = 0.50$ ,  $p < 0.001$ ), and the effect of the covariate was not significant (effect = 0.04,  $SE = 0.04$ ,  $t = 1.10$ , NS). Two routes of mediation were significant. The first route supported Hypothesis 2: Effort Level  $\rightarrow$  Perceived Probability  $\rightarrow$  Willingness to Engage (indirect effect =  $-0.11$ ,  $SE = 0.03$ ;  $CI_{95} = [-0.18, -0.05]$ ). The second route supported Hypothesis 4: Effort Level  $\rightarrow$  Perceived Probability  $\rightarrow$  Perceived Value  $\rightarrow$  Willingness to Engage (indirect effect =  $-0.08$ ,  $SE = 0.02$ ;  $CI_{95} = [-0.12, -0.04]$ ). Hypothesis 3 was not supported.

## 5.2.6 | Moderation analyses

A two-way ANOVA produced a nonsignificant moderating effect of consumer mindsets on the impact of effort level on (a) willingness to engage,  $F(1, 470) = 0.057$ , NS and (b) perceived probability of success,  $F(1, 470) = 0$ , NS. Therefore, Hypothesis 5 was not supported, which posits the moderating role of consumer mindsets in the effect of effort level on perceived probability of success. Analysis of

perceived engagement value showed a significant two-way interaction of effort level and consumer mindsets,  $F(1, 470) = 4.15$ ,  $p = 0.042$ ,  $\eta_p^2 = 0.009$ . Based on follow-up tests using a Bonferroni correction, fixed mindset individuals derived a higher value of engagement when effort level is low ( $M_{low} = 4.14$ ,  $SD = 1.57$ ) versus high ( $M_{high} = 3.72$ ,  $SD = 1.65$ ),  $F(1, 470) = 3.94$ ,  $p = 0.048$ ,  $\eta_p^2 = 0.008$ . However, growth mindset ones did not show a significant difference in low ( $M_{low} = 3.78$ ,  $SD = 1.57$ ) versus high effort conditions ( $M_{high} = 3.99$ ,  $SD = 1.78$ ),  $F(1, 470) = 0.87$ , NS.

## 5.2.7 | Moderated serial mediation analysis

In this analysis (PROCESS model 84; Hayes, 2018; 10,000 bootstrapped samples), effort level was included as the independent variable (0 = low, 1 = high), mindsets as the moderator (0 = fixed, 1 = growth), perceived probability of success and perceived value of engagement as two mediators, and engagement intention as the dependent variable. The results revealed nonsignificant moderated mediation for the routes Effort Level  $\rightarrow$  Perceived Probability  $\rightarrow$  Willingness to Engage (index = 0.001,  $SE = 0.12$ ,  $CI_{95} = [-0.241, 0.248]$ ) and Effort Level  $\rightarrow$  Perceived Probability  $\rightarrow$  Perceived Value  $\rightarrow$  Willingness to Engage (index = 0.001,  $SE = 0.10$ ,  $CI_{95} = [-0.200, 0.195]$ ). However, when the mediator perceived probability was not included, moderated mediation was significant for the route Effort Level  $\rightarrow$



Perceived Value  $\rightarrow$  Willingness to Engage (index = 0.38,  $SE = 0.18$ ,  $CI_{95} [0.022, 0.737]$ ). Follow-up analyses of conditional indirect effects demonstrated that the negative effect of effort level through perceived value was significant for the fixed mindset individuals (effect =  $-0.25$ ,  $SE = 0.13$ ,  $CI_{95} [-0.503, -0.009]$ ) but not for the growth mindset ones (effect =  $0.13$ ,  $SE = 0.14$ ,  $CI_{95} [-0.138, 0.394]$ ). When the covariate (ad-related experience) was included, the moderated mediation effect was not significant (index =  $0.30$ ,  $SE = 0.18$ ,  $CI_{95} [-0.048, 0.646]$ ).

## 6 | SUMMARY OF FINDINGS AND EXPLANATIONS

### 6.1 | Two routes of mediation

The perceived probability of success and perceived value of engagement are two mechanisms that underlie the effect of effort level on consumers' willingness to engage with firms. The second experiment revealed that the confounding factor, negative mood, could not explain this effect. Three experiments ( $N = 927$ ), as well as the pretest ( $N = 98$ ) about the effectiveness of effort manipulation used in Experiment 3, provided convergent evidence for two routes of mediation: Effort Level  $\rightarrow$  Perceived Probability of Success  $\rightarrow$  Willingness to Engage; Effort Level  $\rightarrow$  Perceived Probability of Success  $\rightarrow$  Perceived Value of Engagement  $\rightarrow$  Willingness to Engage. Of note, the mediating role of the perceived value of engagement depends on the perceived probability of success. Controlling for global self-esteem (Experiment 1), experience in co-creating products (Experiment 2), and ad-related experience (Experiment 3) did not change the patterns regarding two routes of mediation, albeit significant effects of these control variables in some situations. All of the three covariates significantly influenced the impact of effort level on the perceived probability of success; product-customization experience (Experiment 2) and ad-related experience (Experiment 3) exerted significant effects on the impact of effort level on the perceived value of engagement as well as engagement intention. To summarize, Hypotheses 1, 2, and 4 were supported, but Hypothesis 3 was not. The perceived value of engagement was not an independent mediator. Its mediating effect on the effort-willingness link hinges on the perceived probability of success.

### 6.2 | The moderating effect of consumer mindsets

In testing this effect, we measured and primed consumer mindsets in Experiments 2 and 3, respectively. Experiment 2 did not support the moderating effect of chronic consumer mindsets. However, the results of Experiment 3 indicated that this effect was present in the relationship between effort level and perceived value of engagement when mindsets were situationally induced. Moreover, primed consumer mindsets moderated the effect of perceived engagement value in mediating the impact of effort level on engagement propensity.

However, this moderated mediation disappeared when the ad-related experience was controlled. In particular, the effort level had a negative effect on fixed mindset individuals' propensity through perceived engagement value. The influence of effort level did not hold for growth mindset individuals. In conclusion, Experiments 2 and 3 did not support Hypothesis 5 that consumer mindsets moderate the negative effect of effort level on the perceived probability of success, in the way that the negative effect is attenuated for growth (vs. fixed) mindset consumers. Experiment 3 supported Hypothesis 6 that consumer mindsets moderate the negative effect of effort level on the perceived value of engagement, such that the negative effect is attenuated for growth (vs. fixed) mindset consumers. The negative effect of effort level was weakened and became nonsignificant for growth mindset consumers. Taken together, fixed (vs. growth) mindset consumers are more susceptible to the effect of effort level.

### 6.3 | Speculations regarding two questions about the moderating effect of mindsets

The first question is why Hypothesis 5 was not supported. In hypothesizing the moderating role of consumer mindsets in the effect of effort level on the perceived probability of success, our rationale is largely based on the outcome (process) focus that fixed (growth) mindset consumers have. The outcome versus process focus leads to different subjective probability estimations that Wakslak and Trope (2009) believe are a function of perceived abstractness or concreteness of an event (e.g., success in completing an engagement task). Compared to fixed mindset individuals, growth mindset ones put more emphasis on the process (vs. outcome) of completing the task (Butler, 2000; Dweck et al., 1995a; Jain et al., 2009; Mathur et al., 2016), and estimate a higher likelihood of success because of a seemingly concrete outcome. However, it is possible that the difference in perceived likelihood of success is dependent on the temporal distance between the time of the estimation and the estimated outcome. That is, growth mindset individuals may perceive a greater likelihood of success than fixed mindset individuals only when the temporal distance is sufficiently large. Neither Experiment 2 nor Experiment 3 was designed to test for this possibility. Future research could tap into the role of temporal distance in affecting how consumers evaluate probability based on required effort.

The second question is why Hypothesis 6 was supported by Experiment 3, not Experiment 2. There might be two explanations for the inconsistent findings. First, the variance of measured mindsets lacks in Experiment 2. A number of individuals may exist who do not belong to the fixed or growth mindset groups but fall in the middle of the fixed-growth continuum (Dweck et al., 1995a). In Experiment 2 that measured mindsets, we did find this type of participants (about 40%). This may lead to inadequate variance in consumer mindsets. According to Podsakoff et al. (1995), inadequate variance in moderator variables is an important contributor to nonsignificant moderating effects. Second, engagement tasks may

matter. When it comes to the impact of effort level on the perceived value of engagement, the moderating effect of consumer mindsets was established essentially on the ground of different interpretations about the relationship between effort and competence. Experiment 2, which did not find support for this moderating effect, involved a hypothetical task about customizing an innovative fountain pen. Although we emphasized “innovative,” the pen is generally supposed to satisfy utilitarian needs and may not have sufficiently activated a sense of competence. Participants may not realize that pen customization could require and reflect many abilities. The creative nature is relatively more salient in the third experiment that asked participants to provide ideas about creative ads for a stylish restaurant and sports bar. The two tasks in Experiments 2 and 3 are comparable to Blut et al.'s (2020) closed versus open tasks, which vary in the intensity of required creativity and cognitive effort. This is because a closed task (such as configuring products based on firm-supplied toolkits) consists of pre-determined elements whereas an open task (such as submitting ideas to Starbucks) does not impose many restrictions on consumers (Blut et al., 2020).

## 7 | IMPLICATIONS AND LIMITATIONS

It is a rapidly growing trend that consumers as creative agents engage with brands to co-create value (Kozinets et al., 2008). Firms embrace this trend, as it brings consumers closer to brands. Because of the “I designed it myself” effect (Franke et al., 2010), much value is attached to the products by consumers that they jointly created. Engagement takes consumer effort (Blut et al., 2020; Hoyer et al., 2010). While being empowered, consumers inevitably need to put effort into creative engagement tasks. Moreover, greater effort is expected when firms attempt to make their engagement programs meaningful and expect consumers to be actively and deeply engaged. The value and positive impact of exerted effort have been well documented and accepted by consumer researchers (e.g., Franke et al., 2010; Norton et al., 2012). However, given that effort is unavoidable, marketers should first think about whether and how to communicate the required effort in their engagement programs. If such information is hidden, consumers may feel that they were cheated and blame firms for a lack of information transparency. They may be regretful for participation in challenging tasks and would not repeat their participation in the future. Paradoxically, firms may get themselves in a fix by informing consumers of the considerable effort needed. It is a big concern whether explicitly communicating required effort would backfire and frighten consumers. Much evidence suggests that they become disheartened if they are flooded with overwhelming information and an assortment of choices and confront higher levels of sophistication in tasks (Broniarczyk & Griffin, 2014; Teichmann et al., 2016). Thus, it is practically and theoretically important to understand how required effort affects engagement intention. This section discusses the implications and limitations of our work and points out potential research avenues.

### 7.1 | Practical implications

Based on the expectancy-value theory (Eccles & Wigfield, 2002; Mazis et al., 1975; Weiner, 1974), we found that the effect of the “value” component cannot be independent of the “expectancy” component when the required effort is explicit. More to the point, consumers perceive value in an indirect way from the effort anticipated for their engagement with firms. The experimental results indicated that the mediating role of the perceived value of engagement is contingent on the perceived probability of success. For the most part, this finding suggests that marketers could inform consumers of the effort needed but should make salient their likelihood of success in engagement tasks. This provides some clue for marketers to beat off the challenge of how to convince consumers to engage despite that the consumers have been cognizant of much effort expected from them. It is not sufficient and efficient by simply communicating engagement benefits for consumers. Firms could design engagement procedures, which include aids, clear guidelines, and necessary training in addition to the description of the task itself. In so doing, potential participants could “visualize” their good chance of success, and even those who have insufficient skills are confident that they can smoothly navigate the engagement process and harvest much value from it.

Furthermore, we identified the significant moderating effect of situationally induced consumer mindsets on the impact of effort level on the perceived value of engagement. The moderating influence also takes place in terms of the effect of perceived engagement value in mediating the impact of effort level on willingness to engage. It appears that the disclosure of required effort does not matter too much for growth mindset individuals. This finding encourages marketers to cultivate (even temporarily) a growth mindset among consumers. Researchers have developed valid ways to prime mindsets by exposing consumers to ads, movies, etc. (Mathur et al., 2016). These interventions are not so straightforward to be used in firms' engagement programs. Perhaps, the programs could highlight how engagement provides to participants learning benefits and opportunities for personal growth. Some growth mindset brands such as the Virgin Group (Murphy & Dweck, 2016) can leverage their good record of constantly innovating products, and use their brand stories as stimuli to foster a growth mindset.

### 7.2 | Theoretical implications

First, this article provides insight into the broader research about consumer brand engagement. In this continuously developing area, scholars explore engagement from various aspects (see Barari et al., 2020 for a review). However, scant empirical research exists, and as to the antecedents of engagement willingness, much of prior research pays unbalanced attention to firm-level variables (Barari et al., 2020). Based on the expectancy-value theory (Mazis et al., 1975; Wigfield & Eccles, 2000), the present research sheds light on the mechanisms regulating the effect of effort level on

engagement tendency and empirically tests them across samples using different incentives. As for consumer engagement in creative tasks, this effect comes about through two mechanisms, that is, the perceived probability of success and the perceived value of engagement. Second, our exploration responds to Inzlicht et al.'s (2018) suggestion and enriches the research regarding expected effort. Relative to the retrospective effort–value associations that have gained lots of attention (e.g., Franke & Schreier, 2010; Kruger et al., 2004; Norton et al., 2012), the concurrent or prospective effort–value relationships deserve more research (Inzlicht et al., 2018). The present research studies effort that consumers expect to devote in their engagement in creative tasks. It offers insights into how people interpret required effort as well as how this interpretation influences their willingness to perform engagement tasks. Third, the current research extends implicit theories (Dweck et al., 1995a, 1995b) by proposing a moderating role of consumer mindsets (fixed vs. growth) in affecting the impact of effort level on the perceived probability of success and perceived value of engagement. Implicit theories (Dweck et al., 1995a, 1995b) were originally developed in the psychological and educational disciplines, and have been widely applied in consumer research to address issues about brand perceptions and transgressions, persuasion and marketing appeals, and consumption behavior (see Jain & Weiten, 2020 for a recent review of implicit theories). We apply implicit theories to the domain of consumer engagement.

### 7.3 | Limitations and future research

In spite of the theoretical and practical contributions, this study has some limitations. First, both effort level and mindsets manipulations were implemented based on hypothetical scenarios. Even though they were effective and well established in prior research, participants may not fully immerse themselves in the scenarios. One research avenue could thus be to conduct field studies in real business situations. Second, we did not use branded items in our experiments because we hope to just focus on required effort and tease out unwanted factors. Consumer engagement research delves into brand relationship quality, including brand satisfaction, trust, and commitment (Barari et al., 2020), but does not attend to how the interaction of these variables with effort affects the tendency of engagement. As explained earlier, by default consumers need some basic brand knowledge to engage in creative tasks (e.g., design an ad). According to Hoyer and Brown (1990), the level of brand knowledge—ranging from “simple recognition of the brand name to a highly developed cognitive structure based on detailed information”—speaks to the concept of brand awareness. In the future, scholars could examine brand-related variables such as brand awareness. We propound that the negative effect of effort level would be diminished by a high level of brand awareness.

Additionally, our probe into effort serves as a basis to open up other important research questions that are of interest to marketers. An unprecedented surge of brand communities adds upside

momentum for consumer engagement. Consumers provide their insights on firm-operated communities such as the Threadless Community or professional innovation platforms such as Brightidea. Marketing practitioners see brand communities as a fertile field for gleaning new ideas. Another intriguing research avenue could be how consumers convey information about their effort when their peers are present. With respect to others' effort, laypeople generally make two inferences that go in opposite directions: low effort → high competence (Jones, 1989) and high effort → high commitment to goals (Dik & Aarts, 2008). With the presence of others, consumers are motivated to display positive images and care about the information they can display to signal their qualities to others. This impression management concern even exists when individuals do not have direct interactions with others (Puntoni & Tavassoli, 2007). One signal that can be sent is effort expended in performing engagement tasks in brand communities. Which effort information (low vs. high effort) consumers choose to communicate may depend on which favorable image they intend to demonstrate. If they want to be perceived as capable (committed) by others, they may hide (confess) how effortful they are.

### DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

### ORCID

Xianfang Zeng  <http://orcid.org/0000-0002-0667-8651>

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