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The high-end bias - A decision-maker preference for premium over economy innovations

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ABSTRACT

Deciding which new product concepts to develop is an important strategic management decision. One part of it is to decide whether to develop "premium" products, priced above the average product on the market, or "economy" products, priced lower than the average product on the market. We hypothesize that, ceteris paribus, firms and individual decision makers prefer premium over economy innovation projects. Building on implicit attitude and status discrimination theories, we argue that the origin of the bias lies in the implicit decision-making system of the mind, such that decision-makers inherently prefer premium innovations and that this implicit high-end bias affects their explicit preferences. We use the results from one longitudinal set of archival sales data covering 2312 new product introductions and three experimental studies with decision makers, including practicing managers, to provide evidence for the high-end bias. With these findings, we extend status theory as well as discrimination theory from well researched personnel decisions to managerial decisions about inanimate objects such as product concepts. We further augment literature on low-end innovation by identifying an important constraint for managers and researchers who work on inclusive innovation, frugal innovation, social responsibility, and Base of the Pyramid innovation.

1. Introduction

Innovation and new product development (NPD) are critical activities that influence firm value (e.g., Rubera and Kirca, 2012; Sood and Tellis, 2009; Zuo et al., 2019) and also determine the potential contribution of the company in solving Grand Challenges of our society (e.g., George et al., 2012; Snihur and Bocken, 2022). Product positioning decisions, in particular, are among the most fundamental strategic decisions that managers make (Porter, 1980). Will the firm develop "premium" products (priced above the average product in the marketplace and targeting consumer segments seeking more differentiated attributes) or "economy" products (priced lower than the average product and targeting consumer segments seeking lower price points)? From a firm perspective, these decisions entail substantial and often irreversible resource commitments (Reinhardt et al., 2018; Varadarajan, 2010). From a customer

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perspective, these decisions determine whether the product will create value for a relatively small target group with abundant resources or a larger target group facing stronger resource constraints.

Market potential, evidence of unmet consumer needs, and the desire to solve social problems all support the importance of developing economy innovations (e.g., Asakawa et al., 2019; Prahalad, 2010). The 2022 report by the Oxford Poverty and Human Development Initiative claimed that 24% of the world's population live in multidimensional poverty (UNDP 2022) and a recent analysis by EUROSTAT revealed that one in five people in the EU is at risk of poverty or social exclusion (Eurostat, 2021). Even in the U.S., 43 million citizens lived below the per capita income poverty line of $12,082 in 2015 (Proctor et al., 2016). In addition, numerous examples across industries suggest that economy innovation strategies are viable or even necessary. The recent COVID19 pandemic showed that the solutions for global challenges need to address the many and need to be affordable to individuals and the society as a whole (Harris et al., 2020). Firms such as Southwest, Ryanair, Walmart, Aldi, or Renault/Dacia follow those principles and demonstrate that an economy innovation strategy can go hand in hand with building strong brands and achieving high operating margins and profitability. Providing products that are affordable to Bottom-of-the-Pyramid consumers can also allow the firm to be more socially responsible and provide social value in addition to economic value (de la Fuente et al., 2022; Nonaka and Takeuchi, 2021; Snihur and Bocken, 2022). However, despite their demonstrated relevance, established firms appear hesitant to develop economy innovations (Christensen and Bower, 1996; Prahalad, 2010; Reinhardt et al., 2018; Sood and Tellis, 2011). There is an interesting apparent disconnect between market demand in economy segments and the willingness of many firms to fulfill these seemingly underserved needs.

Beyond other known biases in management decision situations (e.g., Busenitz and Barney, 1997; Galasso and Simcoe, 2011; Simon and Houghton, 2002; Zhang and Cueto, 2017), we suggest that a previously unconsidered bias, which we term the "high-end bias", plays a pivotal role in product concept selection decisions that may affect downstream product commercialization and availability in economy segments. While decision makers should always employ a strategic perspective, humans are not perfectly rational (e.g., Evans, 2008; Simon, 1957; Tversky and Kahneman, 1974). Instead, decision-makers frequently make biased decisions. A high-end bias, as we conceive of and propose it, is a managerial tendency to favor premium (high-end) over economy (low-end) products, all else being equal.

The following anecdotes illustrate this potential managerial tendency. Volkswagen introduced the Phaeton, a $100,000 flagship sedan extending VW's product line at the high-end. However, the car never reached sales targets and during the model's 15 years in production VW reportedly lost $30,000 per vehicle sold (Karius, 2015). On the other hand, VW hesitated to introduce economy cars (Hucko, 2014), despite the market and financial success of Renault/Dacia in this low-price segment (Attwood, 2017). Similarly, an August 2018 Washington Post article documented a particularly fascinating paradox in regard to housing developments in major U.S. cities (Stein, 2018). At the time of the article, year-on-year rents were rising rapidly for low-to-moderately priced units in the housing market, yet were falling for the luxury market in numerous cities, including San Francisco, Chicago, Portland, Denver and Washington, D.C. As perhaps an extreme example, more than 95 percent of private new housing construction in Portland, OR from 2010 to 2014 was for the luxury market. While firms were highly attracted to developing luxury housing throughout the 2010's, the faster rent growth rates in other portions of the market suggests that investment was possibly overly skewed towards the high-end. This attraction to invest in the luxury segment of the market has not slowed in recent years (Parker, 2020).

We engage with this phenomenon and contribute to theory and practice in two ways. First, we explore the concept and processes of a relevant, but so far unconsidered bias. Second, we provide first insights about its origin and potential irrationality in terms of firm strategy and outcome. We investigate this issue in the context of product concept selection decisions that are made by experienced managers. We hypothesize that there is a high-end bias in product concept selection, which results from positive implicit human attitudes towards "premium". For example, consumers (justifiably) associate "premium" with positive attributes including high quality and high status. While these positive implicit attitudes can originate in consumer decision-making contexts, we posit that they can and do transfer to managerial decision contexts due to an overgeneralization process.

We test our hypotheses using sales data on consumer-packaged goods (CPG) new products and with experimental data on decision makers' explicit and implicit preferences for premium versus economy product concepts. This dual approach overcomes trade-offs scholars face between external validity when analyzing sales data and internal validity and process insights when relying on experiments (Landwehr et al., 2013). It thus offsets the weaknesses of each method, while simultaneously providing insights into managerial decision making during different stages of the new product development process (i.e., product concept selection and commercialization), increasing the validity of the results.

2. Theory and hypotheses

2.1. Premium vs. economy product concepts

A product concept describes the basic attributes of a new product idea, including its price positioning. We define *premium* and *economy* product concepts from a market perspective – the set of products or services that are similar in the functions they perform or ways they are used (e.g., cars, restaurants, diapers) (Day, 1981). Premium concepts are new products or services that include a bundle of more favorable product attributes and are accordingly priced higher than the market average, thus targeting consumers with above average willingness (and ability) to pay. Economy concepts are the opposite: priced below the market average, these product concepts typically have a more modest offering of product attributes to keep costs low to enable the targeting of consumers with below average willingness (and ability) to pay. These definitions build on previous research investigating premium to economy vertical product line extensions (Randall et al., 1998), new technologies priced above or below a dominant technology (Sood and Tellis, 2011), and high-

and low-end innovations (Reinhardt et al., 2018).

On the one hand, longitudinal, multi-category research on premium versus economy products suggests that neither has an inherent revenue advantage (Ailawadi et al., 2003). However, disruptive innovation research suggests that managers allocate more resources to expensive, high-end projects than to low-end, disruptive projects, inherently favoring premium over economy innovation projects:

> *"The engineers showed their prototypes to marketing personnel, asking whether a market for the smaller, less expensive (and lower performance) drives existed […] Seagate managers made an explicit decision not to pursue the disruptive technology. In other cases, managers did approve resources for pursuing a disruptive product—but, in the day-to-day decisions about how time and money would actually be allocated, engineers and marketers […] consciously and unconsciously starved the disruptive project of resources."* (Christensen, 1997, p. 49, p. 49)

More recently, Sood and Tellis (2011) find that new technologies priced below the dominant technology are of substantial strategic importance because they are more likely to disrupt existing technologies than new technologies priced above the current standard. Clearly, there is a risk to ignoring low-end markets just in favor of high-end ones (King and Baatartogtokh, 2015; Sood and Tellis, 2011).

In addition to purely economic value considerations, low-end innovations have the potential to contribute to solving some of the Grand Challenges of our society (George et al., 2012) by bringing economically, ecologically and socially beneficial solutions to those in need. According to the United Nations Human Development Reports, 1.9 billion people in 111 countries live in multidimensional poverty (UNDP 2022), and it is those members of society that are excluded from the value created by premium innovations. Firms that intend to create positive social impact and address the UN Sustainable Development Goals can leverage the potential of economy innovations because their product positioning creates access for otherwise disenfranchised populations (Reinhardt et al., 2018). Besides awareness, acceptability and physical accessibility, affordability – the key attribute of economy innovations – is known as an important dimension of access creation for Bottom of the Pyramid consumers and is therefore a main driver of inclusion (Mortazavi et al., 2021; Prahalad, 2012). The question we turn to next is why decision-makers, despite the economic and social relevance of affordable innovation, might still be predisposed to choose premium over economy product concepts.

2.2. Bias and discrimination in decision making processes

Research demonstrates that most individuals have inherent biases and thus discriminate against some people based on observable characteristics such as race, gender and status. For example, white founders receive more funding on crowdsourcing platforms than black founders for similar projects (Younkin and Kuppuswamy, 2018), investors are much more likely to invest in start-ups pitched by male entrepreneurs as opposed to female entrepreneurs (Brooks et al., 2014) and irrespective of actual quality, baseball umpires evaluate pitches from high-status pitchers (i.e., All-Star pitchers) more positively than pitches from low-status pitchers (Kim and King, 2014).

Theories explaining this discrimination fall into two categories: statistical and status-based (Correll and Benard, 2006). Statistical discrimination posits that individuals use observable attributes such as race as a rough but inexpensive proxy to infer unobservable attributes such as future business success (Correll and Benard, 2006). This theory assumes that the two groups actually have unequal qualities, and that decision-makers make perfectly rational decisions. In contrast, status-based discrimination argues that decision makers are not rational, but rather that implicit and explicit stereotypes influence their decisions (Correll and Benard, 2006). In contrast to statistical discrimination, status-based discrimination is attributed to "non-functional" cognitive biases, in that they do not have the potential to lead to better outcomes (Kim and King, 2014). Empirical evidence strongly suggests that status-based discrimination is more likely to contribute to discriminatory outcomes than statistical discrimination (Correll and Benard, 2006; Younkin and Kuppuswamy, 2018). Consequently, we theorize (and subsequently empirically investigate) from a status-based discrimination perspective. While ample previous research has conclusively documented how status-based discrimination and cognitive biases against *people* shape evaluations and decisions, this manuscript builds on an emerging set of research (i.e., Garbuio and Lin, 2021; Henike et al., 2020; Liedtka, 2015; Magnusson et al., 2014; Stock et al., 2019; Talke and Heidenreich, 2014) that considers how cognitive status-based biases affect *product concept* evaluations and decisions. Researchers in the fields of strategic management, project management, entrepreneurship and innovation often study well known biases such as overconfidence (Gu, 2023; Huffman et al., 2022; Lee et al., 2023), escalation of commitment (Hietschold and Voegtlin, 2022; Sarangee et al., 2019; Weeth et al., 2020), and illusion of control (Meissner and Wulf, 2017; Riaz and Iqbal, 2015). There are many more biases known (e.g., see Flyvbjerg, 2021 for biases in project management) to influence strategic decisions. Despite ample research on managerial decision making and respective biases, what we know from extant literature about status-based biases cannot fully explain why decision-makers prefer premium concepts over economy concepts. Instead, their preference could be caused by a new bias that has not been explored.

2.3. Mental processes in complex decision making

Cognitive biases and status-based discrimination result from specific mental structures. In the extensively validated dual-process theory of cognition (e.g., Bar-Anan and Vianello, 2018), System 1 thinking is unconscious, associative, and universal (Evans, 2008). Individuals use this system to decide on issues such as whether they like an article of clothing. In contrast, System 2 relies on conscious, rule-based analytical processes to solve problems and make decisions (Evans, 2008). The math problem "483 plus 379" requires System 2 thinking.

System 1 thinking and its conceptual sister "intuition" are especially relevant for complex decisions like product concept selection

(Eling et al., 2014). Intuition is a "(1) non-conscious process (2) involving holistic associations (3) that are produced rapidly, which (4) result in affectively charged judgments" (Dane and Pratt, 2007, p. 36). System 1 or intuitive decisions thus rely on implicit attitudes: "introspectively unidentified (or inaccurately identified) traces of past experience that mediate favorable or unfavorable feeling, thought, or action toward social objects" (Greenwald and Banaji, 1995, p. 8). Implicit attitudes affect individuals without their awareness of "why" (Greenwald et al., 1998).

In contrast to intuitive System 1 decision making, analytical System 2 decision making is less susceptible to biases (Evans, 2008). However, System 2 decisions are not independent of System 1 processes. System 1 can influence System 2 when the decision contains affectively charged elements. Affective input information can create a System 1 response, which changes the System 2 input, leading to a distorted mental representation of the decision aspects and biased decision making (Mishra et al., 2007). For example, if premium and economy innovations are affectively associated with "good" and "bad" respectively, product concept evaluations may be biased, even if the decision maker relies on the analytical System 2.

Product concept selection is a complex decision characterized by high uncertainty levels (Krishnan and Ulrich, 2001). While decision makers may attempt to follow a rational decision-making process, high levels of uncertainty and complexity prevents them from doing so. Instead, they heavily use intuitive System 1 processes (Eling et al., 2014). Pricing decisions in particular are often "armchair judgements" susceptible to heuristics and biases (Rusetski et al., 2014).

2.4. Product concept selection and the high-end bias: hypotheses development

Introducing premium over economy products would be a rational strategy and thus not represent a bias if they generated higher revenue and profit. However, according to economic theory, premium products should not have a long-term advantage over economy products because competitors have strong profit incentives to eliminate market disequilibria. Premium products may not generate higher total revenue because higher prices typically mean lower volumes. Indeed, the correlation between premium price (focal brand minus private label brand price) and revenue premium (focal brand minus private label brand revenue) is exactly zero in a 5-year, 17 category CPG analysis (Ailawadi et al., 2003). Analytical models also provide no support for the idea that a pioneering firm should always choose a high-end strategy to maximize profits (Amaldoss and Shin, 2011). The airline industry especially illustrates that low-end does not necessarily mean low margin or profit: low-cost carriers such as Southwest consistently have maintained higher operating margins since 2000 than high-priced carriers such as United (Stalnaker et al., 2016).

The evidence for indirect effects beyond revenue and profits also do not support the notion that one product positioning strategy is inherently superior to the other independent of the specific context. The introduction of new products to a brand's product line can increase brand equity, which may indirectly improve sales for economy products in the brand's line (Randall et al., 1998). However, it is also possible for the newly introduced premium products to make the brand's existing products look inferior, which may damage overall sales (Caldieraro et al., 2015). Other studies also report mixed success rates for introducing economy and premium private label brands (Geyskens et al., 2010). Established firms also can grow profitably by adding new economy brands. Again, Renault's "Dacia" low-end cars constitute over 40 % of Renault's 2013 sales with profit margins above the company's average (Radjou and Prabhu, 2014). Taken together, there is no clear theory or empirical consensus suggesting that economy positioned products should be or are categorically less successful than premium ones.

However, we posit that status discrimination and implicit attitude theory, neither of which relies on economic rationality assumptions, may jointly combine to produce a high-end bias. Substantial previous research has demonstrated that many higher order and interrelated cognitive biases work in concert to produce more specific biases of note (Hilbert, 2012; Willard and Norenzayan, 2013). More than a century ago, Veblen (1899/1994) noted that individuals consume conspicuous, high-priced products to demonstrate wealth and thereby attain higher status. Indeed, consumers still associate high price with positive attributes like quality (Völckner and Hofmann, 2007) and prestige (Brucks et al., 2000). Premium products have higher emotional value and create higher event-related electroencephalography potentials in the presence of others, indicating a higher motivational significance (Pozharliev et al., 2015). Taken together, this suggests that premium products are repeatedly paired with positive attributes in daily life by consumers. Because implicit attitudes result from repeated object pairings with positive or negative stimuli (Gawronski and Bodenhausen, 2006), "premium" and "high-end" implicitly will be cognitively associated with positive attributes. We suggest that managers may incorrectly assign value to these cues.

Implicit attitude theory proposes that positive cognitive associations created in one context may affect evaluations in an entirely different context where they may not be valid or even relevant (Gawronski and Bodenhausen, 2006). Brain imaging suggests that the hippocampus spontaneously transfers values from previously rewarded options to never-before-experienced contexts (Wimmer and Shohamy, 2012), potentially creating a bias for analogous options in situations where no preference should exist. Thus, existing implicit attitudes can affect evaluations in a situation where they normatively should not have any effect.

While in some contexts it may be rational to associate premium with positive attributes, it may hinder objective decision making when irrelevant implicit attitudes are activated. In our context, we posit that a priori held implicit consumer attitudes toward premium products create an implicit bias for premium product concepts that are new to the managerial decision maker because the implicit System 1 cannot clearly distinguish between consumer and managerial decision contexts. Therefore, even if both product concepts have identical expected investments and returns, we theorize:

H1. Ceteris paribus, managerial decision makers have an implicit preference towards premium positioned new product concepts.

An implicit bias would be unimportant if it did not influence decision outcomes. But implicit process influences frequently are not successfully countermanded by rational reasoning and therefore have significant effects on explicit preferences. For example,

pediatricians' implicit attitudes about race affect patient treatment (Sabin and Greenwald, 2012) and recruiters' implicit associations about foreigners influence the likelihood of interview invitations (Rooth, 2010). More generally, meta-analytic results suggest that implicit attitudes and explicit preferences are statistically significantly related (Greenwald et al., 2009; Hofmann et al., 2005).

Neuroscience and marketing research has uncovered how implicit attitudes link to explicit decisions. The emotion-processing amygdala interacts with brain regions responsible for cognition and awareness, suggesting that human reasoning relies on input from emotional processes (Phelps, 2006). For example, individuals are reluctant to consume sugar from a container they themselves labeled "sodium cyanide" (Rozin et al., 1986) – indicating that System 2 reasoning cannot always overrule System 1. Further, affectively charged information from System 1 can cause improper information integration in System 2, biasing a problem's mental representation and leading to suboptimal choices despite using analytical System 2 processes (Mishra et al., 2007).

Thus, System 1 associations create affective reactions (positive for premium, negative for economy) that feed into System 2. Because individuals base their System 2 evaluative judgments on System 1 automatic affective reactions (Gawronski and Bodenhausen, 2006), we predict that:

H2. Managerial decision makers' implicit attitudes towards premium and economy positioned product concepts affect their explicit preferences.

Following H_1 and H_2 as well as basic psychological processes, the logical conclusion is that, all else being equal (or unknown), decision makers will explicitly prefer premium over economy positioned product concepts. Several processes likely contribute to this outcome. For example, status discrimination theory indicates that "double standards" exist: quality standards are stricter for low-than for high-status groups (Correll and Benard, 2006). Thus, an unconscious confirmation bias may lead to an explicitly held belief. High status leads evaluators to perceive quality differently, especially in ambiguous situations (Kim and King, 2014). For example, women are held to stricter standards than men in collaborative tasks (Foschi, 1996) and law firm partners find more mistakes in a memo when the author's race is specified as black versus white (Reeves, 2014). Analogously, an implicit high-end bias may lead decision makers to apply stricter standards to economy positioned product concepts and search for evidence that confirms their implicitly held positive premium versus negative economy concept beliefs. For example, decision makers may implicitly focus on margins and neglect total profits to evaluate new projects (Shapira and Shaver, 2014) or search more intensely for shortcomings in an economy concept. Selectively searching for and incorporating evidence into memory supports the conclusion that premium concepts are in fact better than economy ones.

These individually held high-end biases may also affect firm-level decision making because the micro-foundations for organizational decision-making lie in the structure of individual decision-making systems (Kaplan, 2008). Thus, firm-level decisions often reflect human values and idiosyncrasies. For example, CEOs' personal values affect their firm's innovativeness (Kashmiri & Mahajan, 2017). Further, individual-level status considerations affect firm-level outcomes (Chen et al., 2012). For example, prestigious projects such as ones with sophisticated technology or a high-end target market are more attractive to engineers, likely to be prioritized in day-to-day work and more easily pass through decision gates (Engwall, 2003). Because status considerations are integral to a manager's organizational standing (Chen et al., 2012), individual perceptions of project prestige may affect firm behavior. Taken together, if decision makers have an implicit high-end bias and if this implicit bias affects explicit preferences, we hypothesize that:

H3. Ceteris paribus, managerial decision makers prefer premium over economy positioned product concepts.

3. Study 1

Study 1 uses archival CPG (consumer-packaged goods) data to test whether firms introduce more premium than economy products and whether a preference for one over the other can be justified by higher sales. Thus, Study 1 investigates whether real-world consequences for our hypotheses about individual decision-makers hold. If there are no firm-level preferences, then individual biases for premium positioned products are moot. Thus, Study 1 tests whether firms' structured decision-making processes are able to overcome possible individual-level biases. Consequently, Study 1 analyzes whether individual-level investigations are necessary.

3.1. Empirical setting and data

To test firm bias toward premium positioned new products, we utilize the IRI (Information Resources, Inc.) dataset composed of store sales, pricing, and promotion data for 30 consumer product categories in 50 U.S. markets (for a detailed description, see Bronnenberg et al., 2008). This dataset is of high quality and relevance and has been sourced in over 200 peer-reviewed publications to date across a number of substantive topics and research inquiries (Kruger, 2020). While the IRI data set starts in 2001, we include data only from the 2008 to 2011 period due to abnormalities in reported new product introduction activity during 2006 and 2007 (possibly due to advances in tracking systems).

Empirical CPG research typically identifies a new product as a unique Stock Keeping Unit (SKU) (Draganska and Jain, 2006). However, while they are empirically simple to count, a new SKU could simply be a different size or package type of a product. Diet Coke has a large array of SKUs across various package sizes, each of which would be considered a "product" under this counting scheme. We purposely identify new products more conservatively. We only count new products as being new brands and brand extensions, not new sizes or flavors of current products. Pepsi Maxx thus is a new product in Pepsi's product assortment; the various sizes of Pepsi Maxx are not counted as additional new products. Using text analysis, similar permutations of a product brand name (e.g. "Pepsi Maxx" or "Pepsi Max") were coded as the same product.

Each new product was identified by its first sale at any store across the national dataset. Data from 2008 were used solely for calibration. All products with no sales activity through the end of 2008 but with a first sale on or after January 1, 2009 were considered new products. Because new product performance is total first-year sales, new products launched in 2011 also were excluded from the analysis to avoid right side data censoring. Therefore, the final dataset consists of new products launched between January 1, 2009 and December 31, 2010. In total, 2312 new products were identified.

While price-related sales outcomes for this time-period may be a concern because of the 2008–2009 recession, extensive analyses by Dubé et al. (2018) indicate that market share of private label products only increased by 1 % and this increase can be largely explained by a long-term trend that pre- and post-dates this recession. In addition, the amount of product introductions by national brands (who mainly introduced premium products) and private label brands (who mainly introduced economy products) are stable between 2006 and 2010 (Dubé et al., 2018). Thus, product positioning strategies appear not to be markedly impacted by the recession.

3.2. Premium positioned product preferences among brand managers

Supporting H_3, the data show a managerial preference for premium positioned products, (priced above the market average). Overall, 81.7 % of the products introduced were priced above the category average, which is significantly higher than a 50 % probability ($t(2311) = 39.3, p < .001, d = 0.82$). Among the subsample of new products introduced by brands with existing products in the category of interest, 61.0 % were priced above the brand's own average price, which is also significantly higher than the 50 % probability ($t(1253) = 8.0, p < .001, d = 0.23$). Moreover, the overwhelming preference is to launch products that are priced more than 50 % above the category average (Fig. 1). Managerial preference for launching products priced higher than category average persists in 25 of 30 categories (83.3 %).

3.3. Evaluating new product performance

A managerial preference for launching new premium products could be justified if it leads to improved performance. We use CPG new product sales performance to empirically test whether premium positioned products are more successful than economy ones.

Dependent variable Total first-year national sales (millions of dollars) is the dependent variable (*Sales*). A one-year period allows sufficient time for the product to roll out and meet its distribution potential (Bronnenberg and Mela, 2004), covers multiple purchase cycles for prospective consumers (Bronnenberg et al., 2008) and avoids seasonality issues (Moorman et al., 2012). Volume (measured in units or sales) is the most widely used metric in a new product context; it is used more often than all other metrics including net profit and return on investment (Mintz and Currim, 2013). Likely because revenues are a key strategic outcome for many firms (Liu, 2006) and a firm's focus on expanding revenues is a key driver of overall profitability (Rust et al., 2002). Thus, while profitability metrics (provided in Studies 2–3) are better indicators of violations from normative theory, *Sales* is a suitable dependent variable to measure whether firms align decisions according to their decision makers' most important success outcome.

Independent variable The independent variable of interest is *Premium CPG*. Following both our premium/economy conceptualization and the Sood and Tellis (2011) precedent, we code a new product as premium if it was priced above the category average during its first week on the market and as economy if priced below the category average. Using the introduction price best reflects management's ingoing perception of the innovation's premium vs. economy positioning. Later price points will be directly affected by sales in week 1, therefore already incorporating partial success or failure. Furthermore, market pricing (i.e., setting the launch introduction price at market level and subsequently changing it according to market price changes) dominates in practice, while other tactics like skimming and penetration are less prevalent and these tactics typically only lead to a price increase for above-average

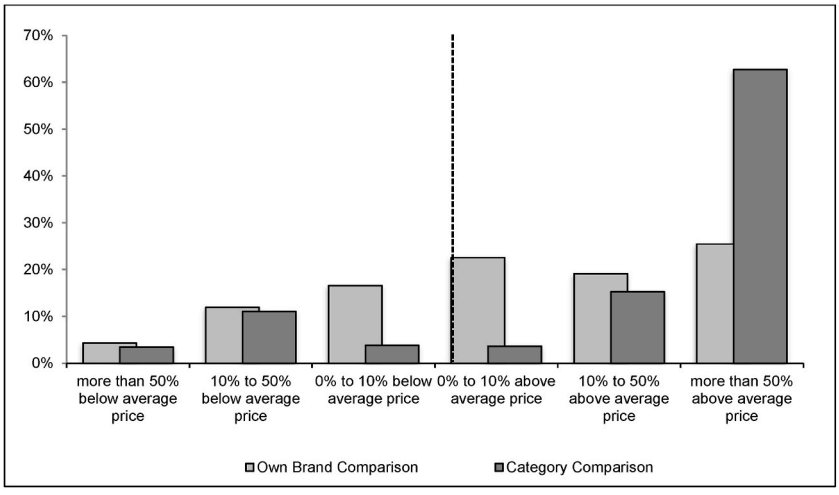

Fig. 1. Cpg managers' preference for launching new products.

priced products and a price reduction for below-average priced products (Spann et al., 2014).

Control variables We include control variables associated with marketing mix and competitive conditions known to impact sales performance. For distribution effects, the maximum number of stores stocking the new product (divided by 100 for scaling and ease of interpretation) during any week in its first year on the market (*Stores*) is included (Bronnenberg and Mela, 2004). We control for promotional activity via the percentage of sales made on some form of in-store displays and/or store print advertising (*Promotion*). In terms of additional product influences on sales, we account for the number of flavor and size variations offered (*SKUs*), due to its ability to drive sales. We include product size (*Product Size*) to account for potential outcomes associated with bulk packaging and control for the size of the brand's portfolio of existing product offerings (*Brand Products*) in the category. Lastly, we account for category competitive conditions by including total category sales in tens of millions of $'s (*Category Sales*) and the total number of category brands (*Category Brands*). Descriptive statistics and raw correlations are reported in Table 1.

Models and estimation We use multiple approaches to determine whether the managerial preference for launching premium products is justified by improved outcomes. First, we test for non-inferiority of economy CPGs, a test typically used to compare new superior or lower-cost medical treatments to established treatments (Walker and Nowacki, 2011). A non-inferiority test is a one-sided equivalence test that seeks to reject the null hypothesis that economy CPG sales are worse by at least a managerially meaningful δ than premium CPG sales.

Second, we use a cross-sectional regression on new product sales performance. As the variable *Stores* is likely endogenous, because *Stores* not only influences *Sales*, but anticipated sales can also influence the number of stores stocking a product, we move to an instrumental variables regression (Phillips and Hansen, 1990) with *New Brand* as the instrument of choice and with *Stores* as the instrumented variable. *New Brand* is coded as 1 if the new product is launched as a completely new brand in the category and is 0 if the new product is launched by an existing brand in the category. We chose *New Brand* as the instrument because it is a major retail stocking decision deterrent due to trade coverage areas and existing distribution agreements (Bronnenberg and Mela, 2004). New brands tend to lack distribution agreements that existing brands possess and are thus less likely to achieve distribution across a large number of stores. In addition, it is much less likely that sales or anticipated sales influence whether a new product is developed by an existing or a new brand. Both existing and new brands have the same incentives to develop new products that maximize sales. The instrumental variable analyses allows us to account for potential endogeneity concerns and also enables us to investigate whether retail managers display a similar preference for premium innovations.

Results Economy positioned CPGs are not inferior to premium positioned CPGs, even for the most conservative case assuming that any difference in sales is managerially meaningful ($\delta = 0$, $t(2311) = 59.13$, $p < .001$). In fact, economy CPGs exhibit substantially higher – more than double – average first-year sales ($372,902) over premium CPGs ($142,896). The regression results (Table 2), also indicate that a high-end preference is not driven by superior performance. While managers largely launch products priced above both category and own-brand averages, these premium products experience lower sales performance. This effect persists when firm strategy and competitive control variables are included.

The endogeneity-corrected instrumental variable regression (Model M1c) shows the same pattern of results as the OLS regression (Model M1a). However, this analysis also demonstrates that the premium product preference is shared by retail managers (Model M1b). New premium products enjoy an advantage in the number of stores carrying them. This advantage arises despite lower total sales performance. In fact, premium products ($534.81) experience significantly lower per store sales than economy products ($808.29) ($t(2310) = 2.69$, $p = .007$).

The instrumental variable regression test statistics indicate a strong model fit. The Anderson (1951) test of underidentification yields a χ^2 of 56.95 ($df = 1$, $p < .001$). The Cragg-Donald F-statistic (Cragg and Donald, 1993) of weak identification also is significant ($F = 58.16$, $p < .001$). The Sargan statistic (0.000) indicates the equation is exactly identified. Lastly, the Stock-Wright LM Statistic (Stock and Wright, 2000) is also significant ($\chi^2 = 6.55$, $df = 1$, $p < .05$), indicating that endogeneity is present and that the instrumental variables technique is warranted to yield non-biased results.

Robustness checks One concern with our approach could be that products priced close to the category average might be considered parity rather than premium or economy products. Removing products priced within ± 5 % of the category average reduces

Table 1
Descriptive statistics and correlations (study 1).

	Mean	SD	Sales	High-end CPG	Stores	SKUs	Promotion	Product Size	Brand Products	Category Sales	Category Brands
Sales	0.19	1.51	1								
Premium CPG	0.82	0.39	**−.06**	1							
Stores	1.93	4.14	**.34**	**−.04**	1						
SKUs	1.65	1.33	**.30**	**−.04**	**.22**	1					
Promotion	0.01	0.02	−.04	−.02	**−.14**	**−.09**	1				
Product Size	1.26	4.37	**.06**	**−.21**	**.11**	**.15**	−.04	1			
Brand Products	3.85	5.20	**.14**	.02	**.51**	.01	**−.12**	−.04	1		
Category Sales	0.05	0.11	**.29**	**−.06**	**.36**	**.14**	**−.07**	**−.04**	**.15**	1	
Category Brands	96.43	60.76	**−.09**	**.27**	**−.32**	**−.22**	.04	**−.23**	**−.12**	**−.07**	1
New Brand	0.42	0.49	**−.08**	−.02	**−.31**	**.16**	**.17**	**.08**	**−.45**	**−.17**	**−.09**

Correlations in bold are statistically significant ($p < .05$).

Table 2
CPGs new product sales performance (Study 1).

Model	M1a	M1b	M1c
N	2312	2312	2312
Adj. R^2 DV	0.196	0.441	0.178
Estimation	Sales OLS	Stores IVREG	Sales IVREG
Premium CPG	**−0.157** * (0.077)	**0.486** ** (0.176)	**−0.185** * (0.082)
Stores	**0.087** *** (0.009)	–	**0.150** * (0.058)
Promotion	2.306 (1.552)	−5.567 (3.576)	**2.910** + (1.662)
SKUs	**0.261** *** (0.022)	**0.452** *** (0.052)	**0.237** *** (0.031)
Product Size	0.005 (0.007)	**0.074** *** (0.016)	0.001 (0.008)
Brand Products	0.001 (0.006)	**0.305** *** (0.014)	−0.022 (0.021)
Category Sales	**2.579** *** (0.289)	**9.629** *** (0.631)	**1.930** ** (0.659)
Category Brands	**0.001** ** (0.001)	**−0.016** *** (0.001)	**0.002** * (0.001)
New Brand	–	**−1.169** *** (0.153)	–
Constant	**−0.569** *** (0.094)	**1.115** *** (0.230)	**−0.598** *** (0.099)

DV: total first year sales.
*** = $p < .001$, ** = $p < .01$, * = $p < .05$, + = $p < .1$.

the new product sample from 2312 to 2234. However, the results of this alternative specification are consistent with Table 2 (see Appendix W1).

Another valid question is whether there may be non-linear effects; very high-end and low-end products may perform differently than slightly high-end or low-end products. The raw data do show some non-linear trends (Appendix W2). New economy products appear to be most successful on average, however, there also appears to be a market penalty associated with too large a deviation from the average market price toward either end of the spectrum. To further investigate non-linearity issues, we included both the dummy variable *Premium CPG* and the absolute value of the difference between the product's price point and the category average, "*Extremism*." This alternative specification yielded more support for our core result. Even after controlling for the absolute price deviation from the market average, premium CPGs still suffer from significantly lower sales performance than economy CPGs (Appendix W3).

3.4. Motivation for subsequent experimental studies

Study 1 demonstrates that premium positioned CPG products are strongly favored by both US manufacturers and retailers, but at the same time suffer from lower first-year sales, on average, than economy products. Thus, Study 1 provides initial evidence for a real-world high-end preference that cannot be explained by higher sales performance. However, while Study 1 provides external validity, other factors such as higher profit margins, lower risks or higher brand relevance for premium products may influence the results, which cannot be tested with the IRI data. Therefore, the following studies experimentally test the bias at the individual level while controlling for alternative explanations. In addition, while Study 1 focuses on consumer products with relatively low prices, Study 2 leaves the product category unspecified and Studies 3a and 3b include more expensive product categories to rule out that the effect is specific to categories with low average prices.

4. Study 2

The objective of Study 2 is to further investigate the high-end bias existence on an individual-level (H_2) using an experimental design comparing generically described product concepts for selection.

4.1. Participants

We recruited 205 participants with leadership positions from the online research platform Prolific Academic. Most participants on this platform pay attention to instructions, read questionnaires carefully and generally provide high data quality (Peer et al., 2017). Using the Prolific screening function, we pre-screened participants for education, employment, and leadership position to obtain a sample that matches typical characteristics of firm decision makers. We eliminated 25 responses of participants who failed to follow instructions or failed an attention check.

The final sample consisted of 102 men and 78 women aged 19–66 years (M = 36.4, SD = 10.5). Ninety-six percent held at least a Bachelor's degree. Only 8 % were entry level employees; the remaining were analysts/associates (32 %), managers (42 %) or directors and CXO/Presidents (11 %). In addition, 80 % indicated that they had supervisory responsibilities with the authority to give instructions to subordinates. Participant firms were split across small (<50 employees; 29 %), medium (50–1000 employees; 36 %), and large in size (>1000 employees; 34 %) and included 19 industries. Thus, while the sample may not perfectly match innovation decision makers, it is sufficiently heterogeneous and likely reflects the population of managerial decision makers fairly well.

4.2. Procedure

Participants were asked to carefully read a scenario and answer the questions as they would as a corporate decision maker. The scenario described a situation where an employee of a multi-national company had to make a $10 million new product concept investment decision. Inspired by a standard risk elicitation method (Charness et al., 2013) and real-world innovation failure rates (Castellion and Markham, 2013), we specified that (1) the success rate of innovation projects is roughly 50 %, independent of the product's target market, (2) successful projects generate revenues of 2–3 times the invested amount, independent of the product's target market and (3) that if the product fails, the entire investment is lost. In addition, the scenario explained that the new product would be marketed under a new brand and would therefore not affect the existing business, ruling out the account that a high-end preference can be justified as a branding decision such that the new high-end product would create spillover effects for the existing products.

Following a within-subjects experimental design, we then gave participants descriptions of two generic projects: a premium and an economy positioned product concept. The generic descriptions avoided undue influence from specific product or market characteristics or associations. The two projects differed with regard to whether: the new product addressed a market with a large (small) number of potential customers; these customers were expected to have a low (high) willingness and ability to pay; and the price and the performance of the new product were below (above) the average product in the market (for the full scenario see Appendix W4). We then asked participants to invest $10 million, allocating any amount to each of the projects as long as they spent the entire amount. On the next page, we informed participants that senior management had decided to commercialize only one project and that they now had to choose between the two. Next, we asked participants to indicate the intended position for both projects regarding price and volume on slider scales anchored with "low price" – "high price" and "low volume" – "high volume" respectively as a comprehension and attention check. Finally, participants answered demographic and firmographic questions.

4.3. Results

On average, participants allocated $6.1 million (SD = 2.0) to the premium positioned product concept and $3.9 million (SD = 2.0) to the economy concept. The amount invested in the premium concept was significantly higher than the chance value of $5 million ($t(179) = 7.42$, $p < .001$, $d = 0.55$). When asked to make a choice between the premium and the economy product concept, the preference for the premium concept only increased, as 80 % chose it (significantly different from 50 %, $t(179) = 10.0$, $p < .001$, $d = 7.5$). Thus, both the allocation amount decision and the single project choice decision support H_3: decision makers explicitly prefer premium over economy product concepts. Participants invested $2.2 million more in the premium concept and were four times more likely to choose the premium over the economy concept, despite success rates and expected returns that were independent of concept type. In a robustness check, we excluded participants with an entry-level position. The results remained the same.

4.4. Motivation for studies 3a and 3b

Study 2 demonstrates decision maker preference towards premium positioned product concepts, despite equivalent objective information on risks and returns and despite the absence of any brand advantage for the firm's existing products. Thus, Study 2 results cannot be explained with alternative accounts such as differences in profit margins or risk as both were held constant across the two options. In addition, launching the product as a new brand eliminates brand image spillover considerations as the high-end preference driver. However, while Studies 1 and 2 provide evidence of the high-end bias, they do not provide an explanation for its existence. In addition, differentiating rational statistical discrimination from status-based discrimination, which typically does not lead to better outcomes, requires that implicit preferences are an inherent factor in the decision-making process.

5. Studies 3a and 3b

The objectives of Studies 3a and 3b were to test whether decision makers are *implicitly* biased toward premium positioned product concepts (H_1), whether this bias influences *explicit* investment preferences (H_2), and whether these findings are robust to decision-making styles, beliefs, and attitudes. The studies' core method is the Implicit Association Test (IAT), which analyzes relative associative strength between two constructs in an individual's mind (Greenwald et al., 1998). Study 3a uses NPD managers, while 3b uses non-professional decision makers to validate and extend the results, as more innovation-related decisions such as product concept selections are being made by non-professional crowds (Mollick and Nanda, 2016). In addition, using these two different groups further allows assessing an alternative explanation for the high-end bias. If premium product concepts are more successful than economy product concepts due to higher margins, lower risks or strategic brand considerations, it would be rational for experienced managers to implicitly prefer premium over economy concepts. However, if we observe the same effect in non-professional decision makers who do not have NPD and concept selection experience, this alternative explanation does not apply.

5.1. Pre-test

The pre-test selected the pairs of product concepts most strongly judged as truly premium/high-end versus economy/low-end. We also sought pairs where participants explicitly rated premium concepts as equal to or worse than the economy ones from a business perspective. This is an important precondition for the subsequent analyses, which we created intentionally by devising economy

concepts that are slightly better than their premium counterparts. This explicit preference does not mean that new economy products, in general, are preferred, but rather that in our specific set of product concept pairs, the economy concepts were seen as at least equal if not slightly better. An implicit positive attitude towards these premium concepts would only constitute an unwarranted bias if the economy concepts were rated as equally successful or better than the premium ones. We tested premium/economy concept pairs in seven categories (plane interiors, electric cars, hotels, mobile phones, restaurants, office software, and ophthalmologic devices). Eleven NPD practitioner and fifteen academic expert marketing and innovation management judges assessed the ideas. All participants were blind to the study's purpose.

For each pair, the survey presented both product concepts simultaneously. Participants saw the idea name, picture, brief description and the two lines "expected total profits" and "expected investment", which were identical (see Appendix W5). Participants indicated which idea they would recommend for investment, why they made this decision and rated the ideas on new product success factors of expected financial success, competitive advantage, market potential, fulfilling customer needs, and innovativeness, factors typically associated with new product success (Griffin and Page, 1996; Henard and Szymanski, 2001). In addition, participants rated whether the ideas were high-end (premium) or low-end (economy) and high-tech or low-tech. All items were measured on eleven-point bipolar scales from 1 (strongest agreement for the economy positioned concept) to 11 (strongest agreement for the premium positioned concept), with the midpoint 6 indicating indifference.

We selected the five product categories for which decision makers a) most clearly distinguished between premium and economy product concepts and b) had no clear preference toward either concept: plane interiors, electric cars, hotels, restaurants, and ophthalmologic devices. See Appendix W5 for descriptions and Appendix W6 for a screenshot.

Experts rated the premium concepts as more directed toward high-end consumers than the economy ones ($M = 9.48$, $SD = 1.52$, significantly different from the scale's midpoint of 6, $t(25) = 11.66$, $p < .001$). Importantly, the ideas were not rated differently on the high-/low-tech scale – a semantically similar but conceptually distinct construct ($M = 6.08$, $SD = 0.97$, not significantly different from the scale's midpoint, $t(25) = 0.44$, $p = .66$). While the judges slightly preferred the economy concepts ($M = 5.46$, $SD = 1.51$), the average was not significantly different from the scale's midpoint ($t(25) = 1.82$, $p = .08$). All other success measure means were between 5 and the scale midpoint of 6; however, several means were statistically significantly lower, indicating some slight preferences for some economy product concepts. The pre-test results suggest that the paired product concepts do not have inherent characteristics that would explain an implicit preference toward the premium ones. If any a priori implicit preference were expected, it would be toward the economy concepts.

5.2. General experimental procedure and IAT measures

Experiments 3a and 3b follow a four-step, single-factor within-subjects design with concept type (premium/economy) as the manipulated factor. Of these, the first three steps were identical and are thus described below for both studies.

Respondents were first instructed to take the role of a corporate decision maker and decide between recommending different new product ideas. In line with previous research (Randall et al., 1998; Shapira and Shaver, 2014), we specified that each project had similar risk profiles and would be marketed under a new brand name. Participants rated each product concept pair on three bipolar scales (1 = strongest economy concept preference; 6 = indifference; 11 = strongest premium concept preference): "I strongly favor Option A[B] for investment", "Option A[B] would be a more attractive business opportunity for the firm", and "Option A[B] is much more likely to be a financial success." (Cronbach's $\alpha > 0.89$ for all categories, each experiment). Holistic idea ratings capture multiple dimensions and are a good success predictor (Girotra et al., 2010). To avoid order effects, premium product concepts were shown randomly on the left- or right-hand side of the screen and described as Option A or B.

Next, participants answered questions about their decision-making style when deciding between these projects using existing scales (see Appendix W7).

Third, all participants completed the IAT (Greenwald et al., 1998) to measure their implicit attitude towards premium versus economy positioned product concepts. The IAT measures a person's strength of automatic association between differently-anchored categories, such as between "family/career" and "male/female" (Greenwald et al., 2009). The underlying rationale is that participants respond more quickly to strongly than to weakly or contrarily associated categories. Here, then, participants are expected to respond faster when premium concepts and successful are paired together than when premium concepts and unsuccessful are paired together. Meta-analytic results indicate that the IAT is a good predictor of judgment and actual behavior (Greenwald et al., 2009; Maison et al., 2004). Furthermore, recent research using functional MRI (fMRI) finds a robust association between IAT scores and neural signals in the expected brain regions, thus providing neural validity of the IAT (Izuma et al., 2018).

Meta-analytic findings also suggest that the order of implicit and explicit measurement does not affect their correlation (Hofmann et al., 2005). We conducted the IAT after the explicit measurement because doing so decreases the likelihood of demand effects and because participants needed to be familiar with the product concepts prior to measuring implicit attitudes.

We followed standard IAT procedures (Greenwald et al., 1998, 2003) to measure implicit association strength between the ten product concepts participants had rated for investment preference (the stimuli) and "successful" versus "unsuccessful" (the attributes). For the stimuli sorting, we asked participants to sort the concepts into "*Low-end, high-volume innovations*" or "*High-end, low-volume innovations*". We included volume-related adjective-balancing identifiers to reduce the risk of inducing a preference bias based just on the terms "high" and "low" and because firms most typically introduce economy positioned products to pursue high volume markets, while premium products typically serve smaller volume markets (Ailawadi et al., 2003; Randall et al., 1998). Participants also sorted the exemplar phrases "attractive investment", "competitive advantage", "outstanding opportunity", "superior project", and "good project" into the *successful* attribute category and the terms "unattractive investment", "no competitive advantage", "poor

opportunity", "inferior project", and "bad project" into the *unsuccessful* attribute category.

The core of the IAT consists of two "reaction" tests. Participants first sort the randomly appearing product concepts and attribute exemplars into one of two categories jointly labeled "*Low-end, high-volume innovations*" and "*Successful*" to the left and "*High-end, low-volume innovations*" and "*Unsuccessful*" to the right. Participants next repeat the first test, but combine the stimuli and attributes oppositely: "*High-end, low-volume innovations/Successful*" projects sort left, while "*Low-end, high-volume innovations/Unsuccessful*" sort right. Differences in response times and accuracy between these two tests indicate which stimuli type (premium or economy positioned concept) participants more strongly, but unconsciously, connect to which attribute category (successful or unsuccessful). The tasks were counterbalanced (Messner and Vosgerau, 2010): half categorized economy/successful first and the other half categorized premium/successful first. SoSci Survey online software (Leiner, 2014) measured response times.

We used the IAT "improved scoring algorithm" (Greenwald et al., 2003), removing trials with response times slower than 10 s and participants with more than 10 % of response times faster than 0.3 s. Response errors (e.g., categorizing an economy concept as premium) were replaced with the block's mean latency plus .6 s and the differences in response times were divided by their pooled standard deviations. Final scores range from −2 to +2, with score magnitude corresponding to Cohen's d effect size measure (Greenwald et al., 1998, 2003). Absolute IAT scores of 0.20 are considered small, values around 0.50 are moderate and 0.80 indicates strong implicit associations (Cohen, 1992; Greenwald et al., 1998).

5.3. Study 3a

Participants We recruited 204 NPD managers for a study on "Decision Making in New Product Development" by emailing personal contacts and posting links on NPD-oriented social networks (e.g., the PDMA LinkedIn group). Twenty-nine respondents were excluded for insufficient NPD experience (i.e., no involvement in selection decisions or new product development/management during the last 3 years), one declined the use of his data and the IAT scoring algorithm required excluding eleven participants for violating response speed, leaving 163 responses for analysis.

Participants' mean age was 36.4 years (SD = 9.87) and 22 % were female. They averaged 12.5 years of work experience (SD = 9.94) and 7.3 years of NPD management experience (SD = 6.84). Only 6 % were entry level employees; the remaining were analysts/associates (37 %), managers (23 %), directors or C-level executives (18 %) or CEO/Presidents (16 %). 74 % had "significant" or "final" NPD decision-making authority. Respondents came from a diversity of departments typically involved in product concept selection decisions (Marketing/Sales: 28 %; Strategy: 20 %; R&D: 20 %; Engineering/Manufacturing: 10 %; and IT, Legal, Finance, Quality Assurance and other: 22 %) in firms ranging from small (<50 employees; 38 %), medium (50–1000 employees; 22 %), to large (>1000 employees; 40 %) in 18 different industries. The US accounted for 25 respondents while 138 were European. Although not entirely representative, the sample is considerably heterogeneous and thus likely reflects the population of concept selection decision makers fairly well.

Procedure After completing the general experimental procedure, managers answered questions regarding their personal beliefs, attitudes, and demographics and their firm's characteristics. We used existing scales or combined existing scales to measure beliefs and attitudes (see Appendix W7).

Results We first validated the pre-test results to confirm that respondents perceived premium concepts as equal to or worse than economy ones. The average explicit investment score of 5.64 (SD = 1.20) was significantly below the scale's midpoint (t(162) = 3.81,

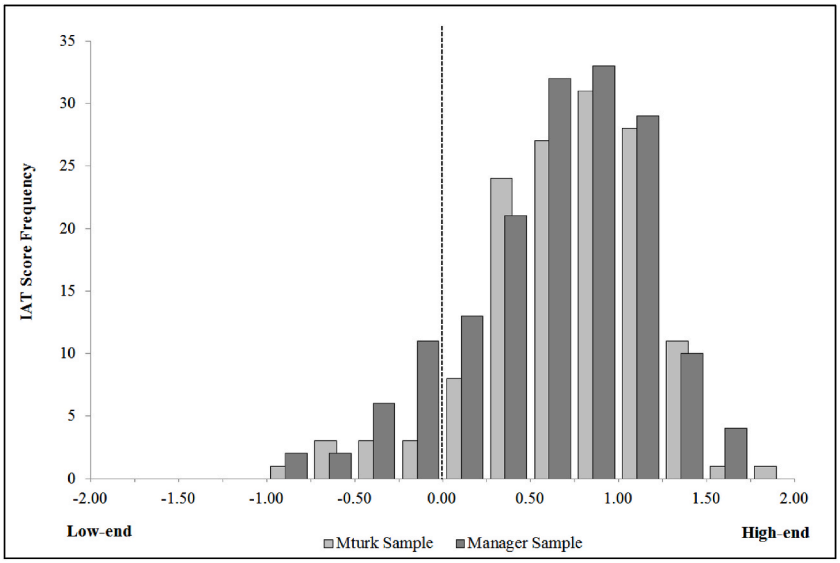

Fig. 2. Iat score histogram for studies 3a and 3b.

$p < .001$), indicating a slight preference for economy concepts over premium ones. As before, there appear to be no inherent project characteristics that would justify an implicit high-end bias.

The IAT score (Fig. 2) is statistically significantly biased towards the premium concepts (d = 0.65, SD = 0.50, t(162) = 16.47, $p < .001$) with a moderate to strong effect size of 0.65 (Cohen, 1992; Greenwald et al., 1998). The average premium concept/successful category response time was 1187 ms, compared to 1745 ms for economy concept/successful (t(161) = 11.87, $p < .001$; we eliminated one outlier with an average economy concept/successful response latency of >10s). These results support H_1: corporate decision makers involved in innovation exhibit an implicit bias towards premium concepts.

As a robustness check, we analyzed whether categorization order affected IAT scores. A one-way ANOVA (F(1,161) = 0.42, $p = .84$) suggests it did not. However, we still corrected for this effect in subsequent analyses where the IAT score serves as a predictor variable to eliminate any possible distortion of the results. We added half of the average order effect to IAT scores for respondents categorizing "economy concepts/successful" first and subtracted half of the average order effect from IAT scores for those categorizing "premium concepts/successful" first (Messner and Vosgerau, 2010). All results are robust to this correction.

We also tested whether personal attributes affect the IAT score. Only age was significantly correlated with the IAT score (r = −0.173, $p = .029$); younger respondents held a stronger high-end bias. However, even the oldest quintile (n = 35, M_{age} = 52.0, SD = 5.66) exhibits a statistically significant high-end bias (d = 0.47, SD = 0.54, t(34) = 5.16, $p < .001$). No other demographic variable was significantly correlated with the IAT score ($p > .27$).

Of the firm-specific variables such as market strategy (high-end vs. low-end) or product type (B2B vs. B2C and goods vs. services), only firm size was positively correlated with the IAT score (r = 0.174, $p = .027$). However, regression analysis suggested a u-shaped relationship, with individuals in small and large firms having stronger implicit high-end biases. However, even those in mid-size firms (50–249 employees) exhibited a significant, albeit smaller, high-end bias (n = 22, d = 0.42, SD = 0.57, t(21) = 3.45, $p = .002$).

Finally, neither individual characteristics such as NPD management experience or decision authority ($p > .43$), nor personal beliefs or decision-making styles (price-quality association, altruism, risk attitude, or rational, intuitive or empathic decision-making style; $p > .12$) affect a person's implicit bias, whether tested through correlation or regression. The results remained stable, when we excluded participants with entry-level positions.

Taken together, these results suggest the presence of an implicit high-end bias is largely independent of a decision maker's demographics, personal beliefs, attitudes, decision-making style or firm background, producing a robust finding.

To test Hypothesis 2, whether decision makers' implicit attitudes affect explicit decisions, we hierarchically regressed the explicit investment preference on control variables and IAT score. IAT score significantly improves the overall model (Table 3) beyond control variable effects, supporting H_2. Thus, our five economy positioned product concepts would have been preferred even more strongly if participants had not had a high-end bias. The fact that IAT scores are generally hard to manipulate involuntarily (Kim, 2003) and that participants conducted the IAT after the explicit decision indicates that the results are not driven by demand effects or other methodological idiosyncrasies, such as participants adjusting their explicit rating after they experienced different reaction times and error rates during the IAT.

Table 3
Results of Hierarchical Regression Analysis for Study 3a (NPD managers): Variables Predicting Explicit Preference.

Model	Control 1		Control 2		Full Model	
R^2	0.101		0.149		0.194	
Adj. R^2	0.065		0.079		0.122	
ΔR^2			0.048		0.045	
F	F(6,153) = 2.85*		F(12,147) = 2.14*		F(13,146) = 2.70**	
ΔF			ΔF(6,147) = 1.39		ΔF(1,146) = 8.20**	
	b	SE	b	SE	b	SE
Female	−0.225	(0.232)	−0.397	(0.249)	−0.339	(0.243)
Education	**−0.143***	**(0.072)**	−0.143+	(0.073)	−0.136+	(0.071)
Income	−0.120+	(0.064)	**−0.144***	**(0.066)**	**−0.140***	**(0.064)**
NPD Experience	0.006	(0.014)	0.006	(0.015)	0.008	(0.014)
Firm High-end Strategy	**0.127***	**(0.049)**	**0.153****	**(0.051)**	**0.150****	**(0.050)**
Firm Size	0.042	(0.054)	0.030	(0.055)	0.006	(0.054)
Price-Quality Association			−0.212	(0.178)	−0.261	(0.175)
Altruism			−0.138	(0.164)	−0.145	(0.160)
Risk Attitude			−0.188+	(0.104)	−0.166	(0.101)
Intuitive DM Style			0.057	(0.127)	−0.035	(0.125)
Rational DM Style			0.252	(0.170)	0.227	(0.166)
Emphatic DM Style			0.081	(0.165)	0.109	(0.161)
IAT score[a]					**0.543****	**(0.189)**
Constant Term	**5.913*****	**(0.603)**	**6.278*****	**(1.349)**	**6.129*****	**(1.318)**

DV = Explicit High-end Preference; n = 160; *** = $p < .001$, ** = $p < .01$, * = $p < .05$, + = $p < .1$.
[a] IAT score adjusted for order effect.

5.4. Study 3b

As more innovation decisions, such as product concept selection decisions, now are made by crowds of interested stakeholders or consumers rather than internal experts, and as recent research indicates that neither group generates substantially different ideas or makes structurally different decisions (Mollick and Nanda, 2016), Study 3b extends 3a to test whether the results hold for non-professional decision makers. Relying on participants without NPD decision-making experience also allows ruling out rational managerial considerations as the cause for the implicit preference. After the three tasks identical to Study 3a, participants answered personal attitude and behavior questions, but not questions related to firm characteristics.

Participants We recruited 158 participants through Amazon Mechanical Turk for a study on "Decision Making in New Product Development". All participants were instructed to take the perspective of a company decision maker. Eight respondents were rejected for either failing an attention check or speeding. IAT scoring algorithm violations eliminated nine more, leaving 141 respondents (M_{age} = 35.9 years, SD_{Age} = 9.88, 55 % female).

Results Again, we first checked whether respondents perceived premium positioned concepts as inherently better than economy ones. The 5.51 average explicit investment score (SD = 1.85, significantly below the scale's midpoint; t(140) = 3.13, p = .002) suggests that participants slightly explicitly preferred the economy concepts, again demonstrating the absence of objective reasons for an implicit premium positioned concept preference.

In support of H_1, IAT scores (Fig. 2) show a significant high-end bias (d = 0.71, SD = 0.47, t(140) = 17.83, p < .001), with a moderate to strong effect size (Cohen, 1992; Greenwald et al., 1998). Average response time for premium concepts/successful was 866 ms, compared to 1178 ms for economy concepts/successful (t(139) = 11.58, p < .001, one outlier eliminated with an average economy concept/successful response latency of >10 s).

Different from Study 3a, but in line with previous research (Messner and Vosgerau, 2010), we found a significant categorization order effect. IAT scores are higher for participants who first categorized premium concepts/successful (d = 0.85, SD = 0.42, n = 67) than for those who first categorized economy concepts/successful (d = 0.58, SD = 0.48, n = 74; one-way ANOVA: F(1,138) = 13.23, p < .001). However, both groups still exhibit a significant high-end bias (p < .001). We used the same correction approach from Study 3a for all subsequent analyses when IAT score is used as a predictor variable.

No demographic or decision style variable affected the IAT score (p > .10). Attitudinally, only price-quality associations correlated significantly with the IAT score (r = 0.164, p = .03) even though "materialism" did not. A linear regression including all demographic, decision style and attitudinal variables was not significant (F(12,128) = 0.943, p = .51), although the price-quality coefficient was (b = 0.133, p = .03). Finally, we tested whether the high-end bias is stronger for managers or non-professional decision makers but found no significant difference ($d_{managers}$ = 0.65, $SD_{managers}$ = 0.50, $d_{non\text{-}professionals}$ = .71, $SD_{non\text{-}professionals}$ = .47, t(302) = 1.07, p = .28). Overall, these results show comparability across samples and a lack of attitudinal impact on IAT scores. Thus, despite exploring a range of different variables, the results do not lend support to any moderation or mediation effect for the implicit preference.

To test H_2, we again hierarchically regressed "Explicit High-end Preference" on control variables and the IAT score (Table 4). The IAT score again improves the model, significantly affecting explicit preferences for non-professional decision makers, supporting H_2.

Table 4
Results of hierarchical regression analysis for study 3b (mTurk): Variables predicting explicit preference.

Model	Control 1		Control 2		Full Model	
R^2	0.041		0.229		0.272	
Adj. R^2	0.013		0.164		0.204	
ΔR^2			0.189		0.043	
F	F(4,136) = 1.45		F(11,129) = 3.49***		F(12,128) = 3.99***	
ΔF			ΔF(7,129) = 4.51***		ΔF(1,128) = 7.52**	
	b	SE	b	SE	b	SE
Female	**−0.638***	**(0.312)**	−0.234	(0.317)	−0.364	(0.313)
Education	−0.060	(0.116)	−0.173	(0.111)	−0.155	(0.109)
Income	−0.091	(0.113)	0.105	(0.108)	−0.059	(0.107)
Age	0.015	(0.016)	0.002	(0.015)	0.000	(0.015)
Price-Quality Association			0.239	(0.214)	0.131	(0.213)
Materialism			0.221	(0.203)	0.218	(0.199)
Altruism			−0.230	(0.224)	−0.242	(0.219)
Risk Attitude			0.255	(0.173)	0.217	(0.169)
Intuitive DM Style			−0.132	(0.205)	−0.125	(0.200)
Rational DM Style			−0.427	(0.264)	−0.420	(0.257)
Emphatic DM Style			**−0.659***	**(0.286)**	**−0.665***	**(0.279)**
IAT score[a]					**0.894****	**(0.326)**
Constant Term	**6.301*****	**(0.750)**	**9.725*****	**(1.686)**	**10.126*****	**(1.651)**

DV = Explicit High-end Preference; n = 141; *** = p < .001, ** = p < .01, * = p < .05, + = p < .1.
[a] IAT score adjusted for order effect.

6. General discussion

We investigate the concept and processes of a relevant, but so far unconsidered bias – the High-end Bias. We provide first insights about its origin and potential irrationality in terms of firm strategy and outcome.

The results provide evidence that decision makers are indeed biased when deciding between premium and economy concepts, implicitly and explicitly associating premium products with success – irrespective of objective success indicators. This implicit high-end bias is present across different geographies and age groups; it is largely independent of personal characteristics including decision-making styles, risk attitudes, materialism and altruism. Even individuals who claim to be rational decision makers were not completely immune to their implicit attitudes. The implicit bias is also unrelated to any conscious considerations like higher margins, lower risks or brand advantages. The high-end bias appears inherently ingrained into human decision-making systems, which we theorize arises from status theory.

In addition, our experiments demonstrate that the implicit high-end bias affects explicit individual preferences. Thus, the result of a reaction test has predictive power on conscious decisions, lending support to the existence of a bias and not the presence of purely rational arguments for premium product concepts. Thus, the results reveal an unconsidered bias beyond overpricing propensities (Rusetski et al., 2014).

These individual-level preferences are also reflected in archival data, demonstrating that the high-end bias percolates up to firm-level actions. The majority of new CPG products identified in the IRI data were premium products priced above the category average. Not only did supplier firms (e.g., P&G) introduce substantially more premium products, but retailers (grocery stores) also were more likely to stock new premium products – despite no proven sales advantage.

Thus, we find a significant high-end preference on different levels using different methods and measurements. The bias is present both on a firm- and an individual level, when analyzing sales or profits, when using primary and secondary data, when focusing on implicit and explicit judgements. This increases our confidence in the findings.

6.1. Theoretical implications

The results influence theory in several different directions:

(1) We augment literature on low-end innovation by identifying an important constraint for managers and researchers who work on inclusive innovation, frugal innovation, social responsibility and the Base of the Pyramid;
(2) we extend status theory by moving beyond biases that occur independent of context in any decision process to considering a specific managerial product concept selection bias;
(3) we broaden the scope of extant discrimination theory from the more traditional personnel decisions to managerial decisions about inanimate objects (product concepts).

We elaborate on these theoretical implications below.

First, the findings highlight the significance of examining individual-level characteristics to understand organizational-level outcomes. Decisions characterized by uncertainty, such as product concept selection decisions, are particularly vulnerable to managers' cognitive idiosyncrasies (Kaplan, 2008). The high-end bias appears to be a fundamental element in individuals' cognitive systems affecting organizational processes and outcomes. Thus, these individual imperfections may be essential for understanding firm behavior and performance. If most decision-making individuals have a high-end bias, attention may be directed primarily to premium product concepts. Consequently, the high-end bias can lead to over-engineering, misjudgment of product necessities, and increasing costs. Over time, high-end biased decisions may form patterns, routines, and simple rules that become ingrained in organizational processes and capabilities. These insights contribute to answering recent calls for research into micro-level institutional constraints and their influence on the new product development process of economy related innovation concepts such as frugal innovations (Dabić et al., 2022). For companies planning to extend product offerings at the low-end, the high-end bias and its organizational level consequences thus represent an important constraint.

These considerations also give reason to believe that a firm's strategy, which usually builds on the evaluation of internal capabilities and market opportunities, can to some extent be driven by the high-end bias of its managers. A combination of an inherent high-end strategy based on high-end preferences, with other individual biases such as escalation of commitment (McCarthy et al., 1993) towards high-end projects, as well as meso-concepts like high-end path-dependency (Thietart, 2016) might lead to self-enforcing processes that stifle economy projects. As such, the high-end bias may explain several findings in the low-end innovation literature. The Base of the Pyramid (Prahalad, 2010), frugal innovation (Hossain, 2018), inclusive innovation (George et al., 2012; Mair et al., 2012) and corporate social responsibility (Wang et al., 2016) emphasize the importance of firms as entities responsible for addressing social issues such as poverty and access to affordable health care. Even if companies have the explicit goal to create ecological or social value, in addition to economic value, their strategic approaches might be hindered by managers with a strong high-end bias. The high-end bias findings suggest an important constraint for managers working within these frameworks – the implicit associations of "high-end" and "successful" within the majority of decision makers independent of their altruistic tendencies. Thus, even projects initiated to serve the low-end might fail because of the implicit high-end bias of those who execute the projects. Previous research on social aspects of innovation has focused on organizational and market perspectives. However, the high-end bias research may be a starting point for a more granular, individual-level theorizing on this topic.

Second, our research contributes to status theory, by complementing existing literature on cognitive biases in new product selection

decisions. Recent literature advanced the field by showing how managers decisions are subject to well-known cognitive biases such as escalation of commitment (Biyalogorsky et al., 2006), unrealistic optimism (DeRosia and Elder, 2019), and the false consensus effect (Hattula et al., 2015; Herzog et al., 2021). While most of these biases are of a higher order in the sense that they are independent of the context and relate to the process of decision making itself, the high-end bias adds a new layer as it represents a bias that is specific to a choice between different product types. These new insights on the supply side perspective also complement the existing demand side perspective, which studies consumer decision making, to provide a more holistic understanding of firm and market outcomes and to enable firms to respond more effectively to existing market conditions. For example, while existing bias research explains how the price presentation (e.g., price framing using a reference price) affects consumer evaluations (Krishna et al., 2002), our research explains why some firms may be hesitant to develop new products using an economy positioning strategy.

Finally, we extend existing theory focusing on managerial discrimination by moving from traditionally observed "people biases" for race, gender, age or ethnicity to "product biases" for premium and economy positioned products. This supports a growing base of literature making this type of important connection (i.e., Garbuio and Lin, 2021; Henike et al., 2020; Liedtka, 2015; Stock et al., 2019; Talke and Heidenreich, 2014). Our findings demonstrate that implicit attitudes can significantly affect managerial decisions not only in the social domain of judging other people but also in the (presumably) more objective domain of judging product concepts. Even when there is no obvious relationship to success, decision makers have significant implicit and explicit preferences for certain product types. Thus, their prejudices against product concept types may affect vulnerable groups like low-end consumers. For example, in our sample of 2312 new product introductions, consumers willing and able to pay above product average price could choose from 1888 new products whereas consumers unwilling or unable to pay above product average price had only 424 new products to choose from.

6.2. Managerial implications

In addition to identifying the potentially unfavorable decision-making tendency to prefer high-end product concepts, a central concern from a practitioner point of view is which intervention(s) might effectively reduce or eliminate this high-end bias to support revenue-, profit-, or social value-maximizing outcomes. Possible interventions to suppress or de-bias implicit attitudes exist at two different levels: the individual and the organizational level.

Several individual-level strategies have been tested. Unfortunately, recent results on racial bias suggest that implicit attitudes are unlikely to change in the long-term for a number of interventions (Lai et al., 2016). On the positive side, however, bias awareness (Pope et al., 2018) and proactive control techniques (Amodio and Swencionis, 2018) can counteract implicitly held associations to a degree. For example, showcasing successful black founders virtually eliminates bias in crowdfunding investment decisions (Younkin and Kuppuswamy, 2018). Thus, corporate decision makers need to learn about previous successful economy products.

At an organizational level, de-biasing decision making may be difficult because decision makers must rely on intuition in many situations, especially in concept selection at the front end of innovation (Eling et al., 2014). One way to organizationally alleviate the bias could be to provide additional data about each project, as decision-making comprehensiveness has positive effects on NPD outcomes (Slotegraaf and Atuahene-Gima, 2011). The famous case of the Oakland A's, who used a data-driven approach to identify under-the-radar players that were often subject to perceptual biases (e.g., smaller players), exemplifies how data-driven decision making can overcome cognitive biases and create above average success rates (Bazerman and Moore, 2012). Fortunately, recent technological developments allow using more and better data for decisions in uncertain environments, enabling decision makers to move away from purely intuitive decisions. Because the magnitude of the high-end bias differs between individuals, firms could also try to manage the composition of selection panels. By including decision makers without a high-end bias, implicit biases may be less likely to translate into explicit decisions.

Previous research has also found that low-end innovation requires a specific culture and management commitment (Reinhardt et al., 2018). Implementing these may be necessary to counteract decision makers' high-end bias. For example, firms focusing on the economy market may need to attract employees with a pronounced low-end bias or suppress the high-end bias through specific decision-making rules and routines or by disintegrating the association between premium and successful. For example, Ryanair's CEO Michael O'Leary constantly reinforces his organization's low-cost goal and culture, likely reducing the association between premium and high status within the organization. Perhaps counterbalancing biases could even be strategically invoked, such as a savior bias (Sørensen, 2008), by internally emphasizing the firm's commitment towards social responsibility by producing products that are accessible and inclusive to a wider base of economy segment buyers.

While our work has explicitly focused on economic value dimensions, it is also possible that some managers may prioritize social value outcomes as well. There are increasing calls from managers and from scholars to prioritize social value objectives (de la Fuente et al., 2022; Nonaka and Takeuchi, 2021; Snihur and Bocken, 2022). Perhaps efforts to emphasize these social goals during the decision-making process can help to overcome the high-end bias which may lead to neglect of the Bottom-of-the-Pyramid.

6.3. Limitations and further research

This research has limitations that may provide opportunities for further investigations. First, while we go beyond many studies by combining multiple methods and data, the data do not causally demonstrate that the high-end bias causes organizational- or market-level outcomes. Future investigation of this link could examine how exactly the high-end bias explicitly and implicitly influences organizational processes and routines.

Second, in contrast to the experimental conditions, managers in real world concept selection situations usually have days to decide, may conduct additional analyses and may make decisions as a group. However, recent evidence suggests that real-world group

decisions suffer from similar biases (Criscuolo et al., 2017), especially when high complexity and high loads of information lead managers to use heuristics that might result in unfavorable decisions such as is found in product selection decisions (Sparrow, 1999). In addition, our samples are not entirely representative, and the associated problems with this approach could have affected our results.

While the experiments used a broad set of product categories to increase generalizability, the choice may negate the role of domain expertise in overcoming bias (Dane and Pratt, 2007). On the other hand, even experts such as experienced physicians exhibit biases in decision making (Bornstein and Emler, 2001). Future work to unpack some of these competing predictions and nuances is warranted.

Third, despite the robustness checks, Study 1 fundamentally relies upon product-level revenue outcomes. However, while "sales" is the most commonly used metric (Mintz and Currim, 2013), managers may (and should) care about a variety of outcomes including total profit, profit margin, and market share. They may also care about strategic outcomes above and beyond new product performance for which the new product may serve as a tactic (Pauwels et al., 2004). This may include managing the brand's quality image, which may impact the success of future product launches (Parry and Kawakami, 2017; Zhang et al., 2021). Future research could also retest the findings with newer data or in different product categories.

Fourth, we have tested the high-end preference for developed markets. While we suspect that managers in developing and emerging markets make decisions that are influenced by the same psychologically mechanisms, our research cannot make any empirical claims in this regard. Further research is needed to investigate moderating factors and boundary conditions. While our research focuses explicitly on positioning of products in economy (low-price) versus premium (high-price) market segments, future studies could also consider other dimensions of access creation and inclusive innovation such as product availability, acceptability and awareness (Mortazavi et al., 2021; Prahalad, 2012).

Finally, we have not empirically tested interventions to eliminate high-end biased decision making and we did not investigate the origin and formation process of the implicit high-end bias. These areas also provide avenues for further research. In conclusion, we hope this research can be a basis for further investigating the high-end bias to assist marketers in making better decisions.

Author statement regarding use of AI

The authors did not use generative AI to write this manuscript.

Data availability

The authors are unable or have chosen not to specify which data has been used.

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Appendix A. Supplementary data

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References

Ailawadi, K.L., Lehmann, D.R., Neslin, S.A., 2003. Revenue premium as an outcome measure of brand equity. J. Market. 67 (4), 1–17.
Amaldoss, W., Shin, W., 2011. Competing for low-end markets. Market. Sci. 30 (5), 776–788.
Amodio, D.M., Swencionis, J.K., 2018. Proactive control of implicit bias: a theoretical model and implications for behavior change. J. Pers. Soc. Psychol. 115 (2), 255–275.
Anderson, T.W., 1951. Estimating linear restrictions on regression coefficients for multivariate normal distributions. Ann. Math. Stat. 22 (3), 327–351.
Asakawa, K., Cuervo-Cazurra, A., Un, C.A., 2019. Frugality-based advantage. Long. Range Plan. 52 (4), 101879.
Attwood, J., 2017. Renault 'surprised' other firms haven't copied Dacia. Autocar. Retrieved December 11 from. https://www.autocar.co.uk/car-news/industry/renault-surprised-other-firms-havent-copied-dacia.
Bar-Anan, Y., Vianello, M., 2018. A multi-method multi-trait test of the dual-attitude perspective. J. Exp. Psychol. Gen. 147 (8), 1264–1272.
Bazerman, M.H., Moore, D.A., 2012. Judgment in Managerial Decision Making, eighth ed. Wiley https://books.google.de/books?id=P7kyngEACAAJ.
Biyalogorsky, E., Boulding, W., Staelin, R., 2006. Stuck in the past: why managers persist with new product failures. J. Market. 70 (2), 108–121.
Bornstein, B.H., Emler, A.C., 2001. Rationality in medical decision making: a review of the literature on doctors' decision-making biases. J. Eval. Clin. Pract. 7 (2), 97–107.
Bronnenberg, B.J., Kruger, M.W., Mela, C.F., 2008. Database paper - the IRI marketing data set. Market. Sci. 27 (4), 745–748.
Bronnenberg, B.J., Mela, C.F., 2004. Market roll-out and retailer adoption for new brands. Market. Sci. 23 (4), 500–518.
Brooks, A.W., Huang, L., Kearney, S.W., Murray, F.E., 2014. Investors prefer entrepreneurial ventures pitched by attractive men. Proc. Natl. Acad. Sci. USA 111 (12), 4427–4431.
Brucks, M., Zeithaml, V.A., Naylor, G., 2000. Price and brand name as indicators of quality dimensions for consumer durables. J. Acad. Market. Sci. 28 (3), 359–374.
Busenitz, L.W., Barney, J.B., 1997. Differences between entrepreneurs and managers in large organizations: biases and heuristics in strategic decision-making. J. Bus. Ventur. 12 (1), 9–30.

Caldieraro, F., Kao, L.-J., Cunha Jr., M., 2015. Harmful upward line extensions: can the launch of premium products result in competitive disadvantages? J. Market. 79 (6), 50–70.
Castellion, G., Markham, S.K., 2013. Perspective: new product failure rates: influence of argumentum ad populum and self-interest. J. Prod. Innovat. Manag. 30 (5), 976–979.
Charness, G., Gneezy, U., Imas, A., 2013. Experimental methods: eliciting risk preferences. J. Econ. Behav. Organ. 87, 43–51.
Chen, Y.-R., Peterson, R.S., Phillips, D.J., Podolny, J.M., Ridgeway, C.L., 2012. Introduction to the special issue: bringing status to the table—attaining, maintaining, and experiencing status in organizations and markets. Organ. Sci. 23 (2), 299–307.
Christensen, C.M., 1997. The Innovator's Dilemma: when New Technologies Cause Great Firms to Fail. Harvard Business Press.
Christensen, C.M., Bower, J.L., 1996. Customer power, strategic investment, and the failure of leading firms. Strat. Manag. J. 17 (3), 197–218.
Cohen, J., 1992. A power primer. Psychol. Bull. 112 (1), 155–159.
Correll, S.J., Benard, S., 2006. Biased estimators? Comparing status and statistical theories of gender discrimination. Adv. Group Process. 23, 89–116.
Cragg, J.G., Donald, S.G., 1993. Testing identifiability and specification in instrumental variable models. Econom. Theor. 9 (2), 222–240.
Criscuolo, P., Dahlander, L., Grohsjean, T., Salter, A., 2017. Evaluating novelty: the role of panels in the selection of R&D projects. Acad. Manag. J. 60 (2), 433–460.
Dabić, M., Obradović, T., Vlačić, B., Sahasranamam, S., Paul, J., 2022. Frugal innovations: a multidisciplinary review & agenda for future research. J. Bus. Res. 142, 914–929.
Dane, E., Pratt, M.G., 2007. Exploring intuition and its role in managerial decision making. Acad. Manag. Rev. 32 (1), 33–54.
Day, G.S., 1981. Strategic market analysis and definition: an integrated approach. Strat. Manag. J. 2 (3), 281–299.
de la Fuente, G., Ortiz, M., Velasco, P., 2022. The value of a firm's engagement in ESG practices: are we looking at the right side? Long. Range Plan. 55 (4), 102143.
DeRosia, E.D., Elder, R.S., 2019. Harmful effects of mental imagery and customer orientation during new product screening. J. Market. Res. 56 (4), 637–651.
Draganska, M., Jain, D.C., 2006. Consumer preferences and product-line pricing strategies: an empirical analysis. Market. Sci. 25 (2), 164–174.
Dubé, J.-P., Hitsch, G.J., Rossi, P.E., 2018. Income and wealth effects on private-label demand: evidence from the great recession. Market. Sci. 37 (1), 22–53.
Eling, K., Griffin, A., Langerak, F., 2014. Using intuition in fuzzy front-end decision-making: a conceptual framework. J. Prod. Innovat. Manag. 31 (5), 956–972.
Engwall, M., 2003. No project is an island: linking projects to history and context. Res. Pol. 32 (5), 789–808.
Eurostat, 2021. One in Five People in the EU at Risk of Poverty or Social Exclusion. Retrieved October 10th from. https://ec.europa.eu/eurostat/de/web/products-eurostat-news/-/edn-20211015-1.
Evans, J.S.B.T., 2008. Dual-processing accounts of reasoning, judgment, and social cognition. Annu. Rev. Psychol. 59, 255–278.
Flyvbjerg, B., 2021. Top ten behavioral biases in project management: an overview. Proj. Manag. J. 52 (6), 531–546.
Foschi, M., 1996. Double standards in the evaluation of men and women. Soc. Psychol. Q. 59 (3), 237–254.
Galasso, A., Simcoe, T.S., 2011. CEO overconfidence and innovation. Manag. Sci. 57 (8), 1469–1484.
Garbuio, M., Lin, N., 2021. Innovative idea generation in problem finding: abductive reasoning, cognitive impediments, and the promise of artificial intelligence. J. Prod. Innovat. Manag. 38 (6), 701–725.
Gawronski, B., Bodenhausen, G.V., 2006. Associative and propositional processes in evaluation: an integrative review of implicit and explicit attitude change. Psychol. Bull. 132 (5), 692–731.
George, G., McGahan, A.M., Prabhu, J., 2012. Innovation for inclusive growth: towards a theoretical framework and a research agenda. J. Manag. Stud. 49 (4), 661–683.
Geyskens, I., Gielens, K., Gijsbrechts, E., 2010. Proliferating private-label portfolios: how introducing economy and premium private labels influences brand choice. J. Market. Res. 47 (5), 791–807.
Girotra, K., Terwiesch, C., Ulrich, K.T., 2010. Idea generation and the quality of the best idea. Manag. Sci. 56 (4), 591–605.
Greenwald, A.G., Banaji, M.R., 1995. Implicit social cognition: attitudes, self-esteem, and stereotypes. Psychol. Rev. 102 (1), 4–27.
Greenwald, A.G., McGhee, D.E., Schwartz, J.L., 1998. Measuring individual differences in implicit cognition: the implicit association test. J. Pers. Soc. Psychol. 74 (6), 1464–1480.
Greenwald, A.G., Nosek, B.A., Banaji, M.R., 2003. Understanding and using the implicit association test: I. An improved scoring algorithm. J. Pers. Soc. Psychol. 85 (2), 197–216.
Greenwald, A.G., Poehlman, T.A., Uhlmann, E.L., Banaji, M.R., 2009. Understanding and using the implicit association test: III. Meta-Analysis of predictive validity. J. Pers. Soc. Psychol. 97 (1), 17–41.
Griffin, A., Page, A.L., 1996. PDMA success measurement project: recommended measures for product development success and failure. J. Prod. Innovat. Manag. 13 (6), 478–496.
Gu, W., 2023. Impact of Managers' overconfidence upon listed Firms' entrepreneurial behavior in an emerging market. J. Bus. Res. 155, 113453.
Harris, M., Bhatti, Y., Buckley, J., Sharma, D., 2020. Fast and frugal innovations in response to the COVID-19 pandemic. Nat. Med. 26 (6), 814–817.
Hattula, J.D., Herzog, W., Dahl, D.W., Reinecke, S., 2015. Managerial empathy facilitates egocentric predictions of consumer preferences. J. Market. Res. 52 (2), 235–252.
Henard, D.H., Szymanski, D.M., 2001. Why some new products are more successful than others. J. Market. Res. 38 (3), 362–375.
Henike, T., Kamprath, M., Hölzle, K., 2020. Effecting, but effective? How business model visualisations unfold cognitive impacts. Long. Range Plan. 53 (4), 101925.
Herzog, W., Hattula, J.D., Dahl, D.W., 2021. Marketers project their personal preferences onto consumers: overcoming the threat of egocentric decision making. J. Market. Res. 58 (3), 456–475.
Hietschold, N., Voegtlin, C., 2022. Blinded by a social cause? Differences in cognitive biases between social and commercial entrepreneurs. Journal of Social Entrepreneurship 13 (3), 431–452.
Hilbert, M., 2012. Toward a synthesis of cognitive biases: how noisy information processing can bias human decision making. Psychol. Bull. 138 (2), 211.
Hofmann, W., Gawronski, B., Gschwendner, T., Le, H., Schmitt, M., 2005. A meta-analysis on the correlation between the Implicit Association Test and explicit self-report measures. Pers. Soc. Psychol. Bull. 31 (10), 1369–1385.
Hossain, M., 2018. Frugal innovation: a review and research agenda. J. Clean. Prod. 182, 926–936.
Hucko, M., 2014. *Billigwagen auf dem Auto-Salon: Die Sparbüchse von Genf*. Spiegel Online. Retrieved September 8 from. http://www.spiegel.de/auto/aktuell/auto-salon-genf-suzukis-billigauto-celerio-zeigt-es-vw-a-956991.html.
Huffman, D., Raymond, C., Shvets, J., 2022. Persistent overconfidence and biased memory: evidence from managers. Am. Econ. Rev. 112 (10), 3141–3175.
Izuma, K., Kennedy, K., Fitzjohn, A., Sedikides, C., Shibata, K., 2018. Neural activity in the reward-related brain regions predicts implicit self-esteem: a novel validity test of psychological measures using neuroimaging. J. Pers. Soc. Psychol. 114 (3), 343–357.
Kaplan, S., 2008. Cognition, capabilities, and incentives: assessing firm response to the fiber-optic revolution. Acad. Manag. J. 51 (4), 672–695.
Karius, A., 2015. *Analyst: Jeder Verkaufte Phaeton Bringt VW 28.000 Euro Miese*. Automobil Produktion. Retrieved September 8 from. http://www.automobil-produktion.de/hersteller/wirtschaft/analyst-jeder-phaeton-bringt-vw-28-000-euro-miese-221.html.
Kashmiri, S., Mahajan, V., 2017. Values that shape marketing decisions: influence of chief executive officers' political ideologies on innovation propensity, shareholder value, and risk. J. Market. Res. 54 (2), 260–278.
Kim, D.-Y., 2003. Voluntary controllability of the implicit association test (IAT). Soc. Psychol. Q. 66 (1), 83–96.
Kim, J.W., King, B.G., 2014. Seeing stars: matthew effects and status bias in major league baseball umpiring. Manag. Sci. 60 (11), 2619–2644.
King, A.A., Baatartogtokh, B., 2015. How useful is the theory of disruptive innovation? MIT Sloan Manag. Rev. 57 (1), 77–90.
Krishna, A., Briesch, R., Lehmann, D.R., Yuan, H., 2002. A meta-analysis of the impact of price presentation on perceived savings. J. Retailing 78 (2), 101–118.
Krishnan, V., Ulrich, K.T., 2001. Product development decisions: a review of the literature. Manag. Sci. 47 (1), 1–21.
Kruger, M.W., 2020. Research Use of the IRI Marketing Data Set: Bibliography. *Available at SSRN 2342688*.
Lai, C.K., Skinner, A.L., Cooley, E., Murrar, S., Brauer, M., Devos, T., Calanchini, J., Xiao, Y.J., Pedram, C., Marhsburn, C.K., 2016. Reducing implicit racial preferences: II. Intervention effectiveness across time. J. Exp. Psychol. Gen. 145 (8), 1001–1016.

Landwehr, J.R., Wentzel, D., Herrmann, A., 2013. Product design for the long run: consumer responses to typical and atypical designs at different stages of exposure. J. Market. 77 (5), 92–107.
Lee, J.M., Park, J.C., Chen, G., 2023. A cognitive perspective on real options investment: CEO overconfidence. Strat. Manag. J. 44 (4), 1084–1110.
Leiner, D.J., 2014. SoSci survey (Version 2.5.00-i). Retrieved February 26 from. https://www.soscisurvey.de.
Liedtka, J., 2015. Perspective: linking design thinking with innovation outcomes through cognitive bias reduction. J. Prod. Innovat. Manag. 32 (6), 925–938.
Liu, Y., 2006. Word of mouth for movies: its dynamics and impact on box office revenue. J. Market. 70 (3), 74–89.
Magnusson, P.R., Netz, J., Wästlund, E., 2014. Exploring holistic intuitive idea screening in the light of formal criteria. Technovation 34 (5–6), 315–326.
Mair, J., Martí, I., Ventresca, M.J., 2012. Building inclusive markets in rural Bangladesh: how intermediaries work institutional voids. Acad. Manag. J. 55 (4), 819–850.
Maison, D., Greenwald, A.G., Bruin, R.H., 2004. Predictive validity of the Implicit Association Test in studies of brands, consumer attitudes, and behavior. J. Consum. Psychol. 14 (4), 405–415.
McCarthy, A.M., Schoorman, F.D., Cooper, A.C., 1993. Reinvestment decisions by entrepreneurs: rational decision-making or escalation of commitment? J. Bus. Ventur. 8 (1), 9–24.
Meissner, P., Wulf, T., 2017. The effect of cognitive diversity on the illusion of control bias in strategic decisions: an experimental investigation. Eur. Manag. J. 35 (4), 430–439.
Messner, C., Vosgerau, J., 2010. Cognitive inertia and the implicit association test. J. Market. Res. 47 (2), 374–386.
Mintz, O., Currim, I.S., 2013. What drives managerial use of marketing and financial metrics and does metric use affect performance of marketing-mix activities? J. Market. 77 (2), 17–40.
Mishra, H., Mishra, A., Nayakankuppam, D., 2007. Seeing through the heart's eye: the interference of system 1 in system 2. Market. Sci. 26 (5), 666–678.
Mollick, E., Nanda, R., 2016. Wisdom or madness? Comparing crowds with expert evaluation in funding the arts. Manag. Sci. 62 (6), 1533–1553.
Moorman, C., Wies, S., Mizik, N., Spencer, F.J., 2012. Firm innovation and the ratchet effect among consumer packaged goods firms. Market. Sci. 31 (6), 934–951.
Mortazavi, S., Eslami, M.H., Hajikhani, A., Väätänen, J., 2021. Mapping inclusive innovation: a bibliometric study and literature review. J. Bus. Res. 122, 736–750.
Nonaka, I., Takeuchi, H., 2021. Humanizing strategy. Long. Range Plan. 54 (4), 102070.
Parker, W., 2020. Aiming at wealthy renters, developers build more luxury apartments than they have in decades - new rental completion hits three-decade high, as for-sale home prices continue to climb. Wall St. J. https://www.wsj.com/articles/aiming-at-wealthy-renters-developers-build-more-luxury-apartments-than-they-have-in-decades-11579084202.
Parry, M.E., Kawakami, T., 2017. The encroachment speed of potentially disruptive innovations with indirect network externalities: the case of E-readers. J. Prod. Innovat. Manag. 34 (2), 141–158.
Pauwels, K., Silva-Risso, J., Srinivasan, S., Hanssens, D.M., 2004. New products, sales promotions, and firm value: the case of the automobile industry. J. Market. 68 (4), 142–156.
Peer, E., Brandimarte, L., Samat, S., Acquisti, A., 2017. Beyond the Turk: alternative platforms for crowdsourcing behavioral research. J. Exp. Soc. Psychol. 70, 153–163.
Phelps, E.A., 2006. Emotion and cognition: insights from studies of the human amygdala. Annu. Rev. Psychol. 57, 27–53.
Phillips, P.C.B., Hansen, B.E., 1990. Statistical inference in instrumental variables regression with I (1) processes. Rev. Econ. Stud. 57 (1), 99–125.
Pope, D.G., Price, J., Wolfers, J., 2018. Awareness reduces racial bias. Manag. Sci. 64 (11), 4967–5460.
Porter, M.E., 1980. Competitive Strategy: Techniques for Analyzing Industries and Competitors. Free Press.
Pozharliev, R., Verbeke, W.J.M.I., Van Strien, J.W., Bagozzi, R.P., 2015. Merely being with you increases my attention to luxury products: using EEG to understand consumers' emotional experience with luxury branded products. J. Market. Res. 52 (4), 546–558.
Prahalad, C.K., 2010. The Fortune at the Bottom of the Pyramid: Eradicating Poverty through Profits. Pearson Education.
Prahalad, C.K., 2012. Bottom of the pyramid as a source of breakthrough innovations. J. Prod. Innovat. Manag. 29 (1), 6–12.
Proctor, B.D., Semega, J.L., Kollar, M.A., 2016. Income and Poverty in the United States: 2015. US census bureau, current population reports, p. 14.
Radjou, N., Prabhu, J., 2014. 4 CEOs who are making frugal innovation work. Harvard Business Review. Retrieved October 5 from. https://hbr.org/2014/11/4-ceos-who-are-making-frugal-innovation-work.
Randall, T., Ulrich, K., Reibstein, D., 1998. Brand equity and vertical product line extent. Market. Sci. 17 (4), 356–379.
Reeves, A.N., 2014. Written in Black & White: Exploring Confirmation Bias in Racialized Perceptions of Writing Skills. Nextions. http://www.nextions.com/wp-content/files_mf/1397223759201404011 4WritteninBlackandWhiteYPS.pdf.
Reinhardt, R., Gurtner, S., Griffin, A., 2018. Towards an adaptive framework of low-end innovation capability–A systematic review and multiple case study analysis. Long. Range Plan. 51 (5), 770–796.
Riaz, T., Iqbal, H., 2015. Impact of overconfidence, illusion of control, self control and optimism bias on investors decision making; evidence from developing markets. Res. J. Finance Account. 6 (11), 110–116.
Rooth, D.-O., 2010. Automatic associations and discrimination in hiring: real world evidence. Lab. Econ. 17 (3), 523–534.
Rozin, P., Millman, L., Nemeroff, C., 1986. Operation of the laws of sympathetic magic in disgust and other domains. J. Pers. Soc. Psychol. 50 (4), 703–712.
Rubera, G., Kirca, A.H., 2012. Firm innovativeness and its performance outcomes: a meta-analytic review and theoretical integration. J. Market. 76 (3), 130–147.
Rusetski, A., Andrews, J., Smith, D.C., 2014. Unjustified prices: environmental drivers of managers' propensity to overprice. J. Acad. Market. Sci. 42 (4), 452–469.
Rust, R.T., Moorman, C., Dickson, P.R., 2002. Getting return on quality: revenue expansion, cost reduction, or both? J. Market. 66 (4), 7–24.
Sabin, J.A., Greenwald, A.G., 2012. The influence of implicit bias on treatment recommendations for 4 common pediatric conditions: pain, urinary tract infection, attention deficit hyperactivity disorder, and asthma. Am. J. Publ. Health 102 (5), 988–995.
Sarangee, K.R., Schmidt, J.B., Calantone, R.J., 2019. Anticipated regret and escalation of commitment to failing, new product development projects in business markets. Ind. Market. Manag. 76, 157–168.
Shapira, Z., Shaver, J.M., 2014. Confounding changes in averages with marginal effects: how anchoring can destroy economic value in strategic investment assessments. Strat. Manag. J. 35, 1414–1426.
Simon, H.A., 1957. Models of Man; Social and Rational. Wiley.
Simon, M., Houghton, S.M., 2002. The relationship among biases, misperceptions, and the introduction of pioneering products: examining differences in venture decision contexts. Entrep. Theory Pract. 27 (2), 105–124.
Slotegraaf, R.J., Atuahene-Gima, K., 2011. Product development team stability and new product advantage: the role of decision-making processes. J. Market. 75 (1), 96–108.
Snihur, Y., Bocken, N., 2022. A call for action: the impact of business model innovation on business ecosystems, society and planet. Long. Range Plan., 102182
Sood, A., Tellis, G.J., 2009. Do innovations really pay off? Total stock market returns to innovation. Market. Sci. 28 (3), 442–456.
Sood, A., Tellis, G.J., 2011. Demystifying disruption: a new model for understanding and predicting disruptive technologies. Market. Sci. 30 (2), 339–354.
Sørensen, B.M., 2008. 'Behold, I am making all things new': the entrepreneur as savior in the age of creativity. Scand. J. Manag. 24 (2), 85–93.
Spann, M., Fischer, M., Tellis, G.J., 2014. Skimming or penetration? Strategic dynamic pricing for new products. Market. Sci. 34 (2), 235–249.
Sparrow, P., 1999. Strategy and cognition: understanding the role of management knowledge structures, organizational memory and information overload. Creativ. Innovat. Manag. 8 (2), 140–148.
Stalnaker, T., Usman, K., Taylor, A., 2016. *Airline Economic Analysis*. Oliver Wyman. Retrieved August 7 from. http://www.oliverwyman.com/content/dam/oliver-wyman/global/en/2016/jan/oliver-wyman-airline-economic-analysis-2015-2016.pdf.
Stein, J., 2018. In Expensive Cities, Rents Fall for the Rich — but Rise for the Poor. Retrieved February 26 from. https://www.washingtonpost.com/business/economy/in-expensive-cities-rents-fall-for-the-rich–but-rise-for-the-poor/2018/08/05/a16e5962-96a4-11e8-80e1-00e80e1fdf43_story.html.
Stock, J.H., Wright, J.H., 2000. GMM with weak identification. Econometrica 68 (5), 1055–1096.

Stock, R., Groß, M., Xin, K.R., 2019. Will self-love take a fall? Effects of top executives' positive self-regard on firm innovativeness. J. Prod. Innovat. Manag. 36 (1), 41–65.
Talke, K., Heidenreich, S., 2014. How to overcome pro-change bias: incorporating passive and active innovation resistance in innovation decision models. J. Prod. Innovat. Manag. 31 (5), 894–907.
Thietart, R.A., 2016. Strategy dynamics: agency, path dependency, and self-organized emergence. Strat. Manag. J. 37 (4), 774–792.
Tversky, A., Kahneman, D., 1974. Judgment under uncertainty: heuristics and biases. Science 185 (4157), 1124–1131.
UNDP, O., 2022. Global Multidimensional Poverty Index (MPI). UNDP (United Nations Development Programme), p. 2022.
Varadarajan, R., 2010. Strategic marketing and marketing strategy: domain, definition, fundamental issues and foundational premises. J. Acad. Market. Sci. 38 (2), 119–140.
Völckner, F., Hofmann, J., 2007. The price-perceived quality relationship: a meta-analytic review and assessment of its determinants. Market. Lett. 18 (3), 181–196.
Walker, E., Nowacki, A.S., 2011. Understanding equivalence and noninferiority testing. J. Gen. Intern. Med. 26 (2), 192–196.
Wang, H., Tong, L., Takeuchi, R., George, G., 2016. Corporate social responsibility: an overview and new research directions thematic issue on corporate social responsibility. Acad. Manag. J. 59 (2), 534–544.
Weeth, A., Prigge, J.K., Homburg, C., 2020. The role of departmental thought worlds in shaping escalation of commitment in new product development projects. J. Prod. Innovat. Manag. 37 (1), 48–73.
Willard, A.K., Norenzayan, A., 2013. Cognitive biases explain religious belief, paranormal belief, and belief in life's purpose. Cognition 129 (2), 379–391.
Wimmer, G.E., Shohamy, D., 2012. Preference by association: how memory mechanisms in the hippocampus bias decisions. Science 338 (6104), 270–273.
Younkin, P., Kuppuswamy, V., 2018. The colorblind crowd? Founder race and performance in crowdfunding. Manag. Sci. 64 (7), 2973–3468.
Zhang, S.X., Cueto, J., 2017. The study of bias in entrepreneurship. Entrep. Theory Pract. 41 (3), 419–454.
Zhang, T., Feng, X., Wang, N., 2021. Manufacturer encroachment and product assortment under vertical differentiation. Eur. J. Oper. Res. 293 (1), 120–132.
Zuo, L., Fisher, G.J., Yang, Z., 2019. Organizational learning and technological innovation: the distinct dimensions of novelty and meaningfulness that impact firm performance. J. Acad. Market. Sci. 1–18.

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