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Multilevel optimal distinctiveness: Examining the impact of within- and between-organization distinctiveness of product design on market performance

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Abstract

Research Summary: This research develops a multilevel framework to study optimal distinctiveness (OD) at two levels. We distinguish between *within-organization distinctiveness* and *between-organization distinctiveness* of product design and examine how they independently and interactively influence performance. Analyzing a unique data set of 2,203 model-year observations for automobiles sold in the U.S. market from 2001 to 2016, we found that while within-organization distinctiveness of product design hurts market performance, between-organization distinctiveness of product design increases market performance. Moreover, when between-organization distinctiveness of product design is high, the negative impact of within-organization distinctiveness of product design on performance is weakened. These findings contribute to OD research by improving the understanding of OD as a multilevel construct and elaborating on its contextual contingency.

Managerial Summary: How should multiproduct organizations design their products to achieve better performance? This article provides a multilevel perspective that encourages managers of multiproduct organizations to consider different frames of references when

designing products. We suggest that a product's design should be consistent with the prototypical design of its organization, whereas the prototypical design of this organization should be different from the average design in the industry. We also found that an atypical design is more desirable if it is from an organization known for distinctive designs in its industry. Our findings help managers of multiproduct organizations achieve the optimal levels of design distinctiveness at both the product and organizational levels.

KEYWORDS

between-organization distinctiveness, market performance, optimal distinctiveness, product design, within-organization distinctiveness

1 | INTRODUCTION

"To be different, or to be the same" has long puzzled managers in their strategic decisions (Deephouse, 1999). Strategy scholars have emphasized how differentiation helps organizations establish competitive advantages and reduce competition (Barney, 1991; Hoopes, Madsen, & Walker, 2003; Porter, 1987), while institutional theorists have stressed how conformity enables organizations to achieve legitimacy and avoid penalties caused by deviance in behavior (DiMaggio & Powell, 1983; Durand & Kremp, 2016; Zucker, 1977). In response, a robust body of work has emerged in strategy and organization research around the notion of "optimal distinctiveness" (OD), which focuses on identifying the optimal level of distinctiveness that positively shapes stakeholder perceptions and enhances performance (Boulongne & Durand, 2021; Haans, 2019; Navis & Glynn, 2011; Semadeni, 2006; Zhao, Fisher, Lounsbury, & Miller, 2017; Zuckerman, 2016). To date, most OD research has focused on the organizational level by examining what constitutes an optimal level of distinctiveness of an organization as compared to its peers in terms of organizational level attributes such as strategies (Deephouse, 1999; McNamara, Deephouse, & Luce, 2003), innovation activities (Jennings, Jennings, & Greenwood, 2009; Roberts & Amit, 2003), business models (Zott & Amit, 2007), and organizational narratives (Haans, 2019; Taeuscher, Bouncken, & Pesch, 2021).

Although achieving OD is important in an interorganizational context, the need to balance the competing demands for differentiation and conformity has become increasingly imperative in an intraorganizational context as many organizations expand their product lines and develop a variety of products to increase competitiveness and consumer loyalty (Anand & Shachar, 2004; Li & Liu, 2019). However, little research has been devoted to understanding how organizations simultaneously balance the tensions between differentiation and conformity in interorganizational and intraorganizational contexts. Understanding OD in both contexts is important because multiproduct organizations constantly face the challenge of managing and orchestrating differentiation across different levels: First, to what extent should their products be distinct from those of other organizations? Second, to what extent should their products be

distinct from other products within their own organization? Third, how can organizations effectively orchestrate the distinctiveness at multiple levels?

To answer these questions and address recent calls for a more nuanced and comprehensive understanding of OD (Durand & Haans, 2021; Zhao, 2021; Zhao et al., 2017), this study develops a multilevel framework to study OD across two different levels. Specifically, we define and examine *within-organization distinctiveness* and *between-organization distinctiveness*. The former refers to product-level distinctiveness in how a product is distinct from the product prototype of its organization; the latter captures organization-level distinctiveness in how an organization's product prototype is distinct from that of the entire industry.[1] We propose that the extent to which distinctiveness benefits or hinders performance depends on the level at which distinctiveness is conceptualized. In particular, we focus on the distinctiveness of product design, or the visual form of a product, which is increasingly recognized as one of the most important drivers of a product's market performance (Bloch, 1995; Chan, Lee, & Jung, 2021; Chan, Mihm, & Sosa, 2018; Radford & Bloch, 2011).

According to research on categorization and competition (e.g., Cattani, Porac, & Thomas, 2017; Durand & Paolella, 2013; Rosch, 1978), the distinctiveness of product design can lead to both illegitimacy costs by impeding categorization and competitive benefits by reducing competition. Thus, the relative strengths of these two countervailing mechanisms determine the net benefit and performance impact of distinctiveness (Durand, Hawn, & Ioannou, 2019; Haans, 2019). Specifically, we argue that the illegitimacy costs overwhelm the competitive benefits when within-organization distinctiveness of product design increases. This is because the legitimacy pressure is more salient than competitive pressure within an organization. In contrast, between-organization distinctiveness of product design generates greater competitive benefits than illegitimacy costs because the competitive pressure is more important than legitimacy pressure in the interorganizational context. Therefore, within-organization distinctiveness has an overall negative impact on performance while between-organization distinctiveness exerts a positive effect on performance.

Furthermore, the impacts of within- and between-organization distinctiveness of product design on performance are not independent but interactive because a product's identity in one category (e.g., being prototypical or not) influences the perception and evaluation of its identity in another category (Crisp, Hewstone, & Rubin, 2001; Deschamps & Doise, 1978). We predict that the negative impact of within-organization distinctiveness on performance weakens when between-organization distinctiveness is high because of the "vantage-of-atypicality" mechanism (Parker, Mui, & Titus, 2020; Purdie-Vaughns & Eibach, 2008; Smith, 2011); that is, high between-organization distinctiveness of product design makes the organization nonprototypical and thus contributes to an identity of "being unconventional." As a result, high within-organization distinctiveness of product design is consistent with this unconventional identity and will cause less illegitimacy costs.

We found strong support for these predictions by analyzing 2,203 model-year observations and images of automobiles sold in the U.S. market from 2001 to 2016. Our study makes several contributions to research. First, we advance OD research by simultaneously investigating distinctiveness at both intraorganizational and interorganizational levels. Traditional OD research tends to conceptualize distinctiveness on a single level and focus primarily on organizational level distinctiveness. We extend the idea that OD is a multilevel construct (Gupta, Crilly, & Greckhamer, 2020; McKnight & Zietsma, 2018; Zhao et al., 2017) by investigating the

[1]In this study, organization refers to an organization with a distinct brand. For firms that own multiple brands, we consider each division with a unique brand name as an organization.

performance implications of distinctiveness at two levels. Second, we contribute to OD research by demonstrating the contextual contingency of OD (Gehman & Grimes, 2017; Haans, 2019; Taeuscher et al., 2021; Zhao & Glynn, 2021). Our research suggests that identifying an optimally distinct competitive positioning in product design requires simultaneous attention to multiple contexts and to the effects of their interaction. Third, our research addresses the call for a more thorough integration of visual data into organizational research (Boxenbaum, Jones, Meyer, & Svejenova, 2018; Meyer, Höllerer, Jancsary, & van Leeuwen, 2013). With the unprecedented rise in the use of visuals, we constructed the design distinctiveness variable using the morphing technology and visual data of car designs, demonstrating the potential of such novel methods in management studies. All of these contributions also have clear practical implications for competitive positioning of multiproduct organizations.

2 | THEORETICAL BACKGROUND

Integrating strategic management and institutional theories, OD research strives to find the optimal level of distinctiveness, which not only increases competitive advantage through differentiation but also reduces illegitimacy due to deviance from existing norms (Zhao et al., 2017). To balance the contrasting effects of distinctiveness on competitive benefits and illegitimacy costs, organizations are advised to adopt a moderately distinctive position to attain OD that maximizes performance (Deephouse, 1999). The proposition of strategic balance theory has been confirmed in multiple contexts. Prior research has shown that organizations achieve their highest performance when they adopt moderate strategic distinctiveness in asset strategies (Deephouse, 1999), strategic group positioning (McNamara et al., 2003), and innovative activities (Roberts & Amit, 2003). In contrast, other studies have found performance is worse with moderate distinctiveness than with strong differentiation and strong conformity strategies, leading to a U-shaped relationship between strategic distinctiveness and performance (Cennamo & Santalo, 2013; Jennings et al., 2009; Zott & Amit, 2007). These contradictory findings challenge strategic balance theory and its implications for business practice.

To address these challenges and advance OD research, Zhao et al. (2017) called for a renewed research agenda on OD. They encouraged scholars to go beyond strategic balance to embrace the ideas of (a) OD as a multidimensional construct, (b) OD as contextually contingent, and (c) OD as temporally dynamic (also see Durand & Haans, 2021; Zhao, 2021; Zhao & Glynn, 2021). Recent works have built on these ideas and significantly extended OD research. For example, rather than assuming a single point of OD, McKnight and Zietsma (2018) adopted a configurational approach and examined how firms combined various dimensions of strategies and conditions to achieve successful commercialization. Haans (2019) demonstrated that what constitutes an optimally distinctive position is contingent on whether the overarching market category is homogeneous or heterogeneous. Similarly, Gupta et al. (2020) showed that stakeholder engagement strategies associated with high performance vary according to the local institutional context and firm characteristics. Barlow, Verhaal, and Angus (2019) compared prototype- and exemplar-based strategic positioning models and found that the optimal entry into a platform market is at a high level of exemplar similarity and a low level of prototype similarity. Addressing the temporal dynamic of OD, Zhao, Ishihara, Jennings, and Lounsbury (2018) found optimally distinctive positioning shifts as the market evolves and as the strengths of legitimacy and competitive pressures change.

Despite these significant developments in recent years, blind spots that limit the understanding of OD remain. For example, OD studies in the strategy and organization literature

have primarily focused on organizational level distinctiveness and its impact on organizational outcomes (Deephouse, 1999; Haans, 2019; Taeuscher & Rothe, 2021). As such, they have overlooked the need to achieve OD within an organization. In an organization that produces multiple products, competition and legitimacy pressures exist not only with other organizations but also among different products within the same organization. Distinctiveness across products under the same brand is important to enhance each product's competitiveness, mitigate consumer satiation, and avoid being perceived as boring (Hasegawa, Terui, & Allenby, 2012; Liu, Li, Chen, & Balachander, 2017). On the other hand, distinctiveness may reduce a product's legitimacy because being different from other products within the same organization impedes consumers' recognition and thus hurt product desirability among consumers (Creusen & Schoormans, 2005; Park, Milberg, & Lawson, 1991). However, the performance implications of distinctiveness among multiple products within the same organization remain largely unexplored in OD research. To address this lacuna, this study attends to the multilevel nature of OD. Specifically, we conceptualize and distinguish between within- and between-organization distinctiveness of product design and examine how organizations can optimally manage their products' design distinctiveness at these two levels.

3 | WITHIN- AND BETWEEN-ORGANIZATION DISTINCTIVENESS OF PRODUCT DESIGN: A MULTILEVEL FRAMEWORK

A product combines elements of both function and design (Chan et al., 2018). Function refers to how a product works based on technology (Chan et al., 2018; Henderson & Clark, 1990), and design captures how a product looks visually (Bloch, 1995; Ulrich, 2011). While product function has long been considered a major determinant of a product's success, recent research has increasingly recognized design as a critical element of new product development strategy and an important source of competitive advantage (Bloch, 1995; Radford & Bloch, 2011; Xia, Singhal, & Zhang, 2016).

Similar to other strategic dimensions (e.g., business model design, innovation strategy, etc.), product design is subject to the contrasting pressures of conformity and differentiation. Research has shown that the success of a product design depends not only on its typicality with other product designs to increase consumer familiarity but also on its differentiation from other designs to enhance its novelty and uniqueness (Askin & Mauskapf, 2017; Chan et al., 2021; Liu et al., 2017; Zhao et al., 2018). Moreover, product design differs from other firm-level strategic dimensions because it faces a unique twofold challenge: first, it needs to manage the conformity–differentiation tension vis-à-vis other organizations' product design, and second, for organizations with multiple products, managing the same tension among these multiple products within the same organization is also necessary. However, a comprehensive understanding of how multiproduct organizations simultaneously manage the competing pressures in both interorganizational and intraorganizational contexts is still lacking.

In this study, we develop a multilevel framework and examine how the distinctiveness of product design at different levels influence market performance differently. We define two types of distinctiveness—*within-organization distinctiveness* and *between-organization distinctiveness*—of product design in line with the level at which distinctiveness is gauged. The simultaneous attention to two unique levels of design distinctiveness is important because these two levels entail different benchmarks for comparison and evoke different frames of references in

consumer evaluations. In the following sections, we develop theoretical arguments regarding the effects of within- and between-organization distinctiveness of product design as well as their interactions on market performance.

3.1 | Within-organization distinctiveness of product design and performance implications

Within-organization distinctiveness of product design refers to the extent to which a focal product's design is distinct from the prototypical design of all products produced by the same organization. It captures the product-level distinctiveness of design in an intraorganizational context. Applying the OD theory to the intraorganizational context, we argue that within-organization distinctiveness simultaneously exerts two opposing mechanisms on a product's competitiveness and legitimacy within its organization. As illustrated in Figure 1a, within-organization distinctiveness can generate both *competitive benefits* derived from the increase of a product's competitiveness and *illegitimacy costs* due to the loss of legitimacy. We next explain and compare the relative strengths of these two mechanisms, which determine the performance implications of within-organization distinctiveness.

Within-organization distinctiveness of product design can reduce a product's legitimacy because it impedes the process through which consumers can categorize a product into its specific brand. Categorizing a product as a member of an organization is primarily based on visual similarity and requires sophisticated visual processing (Jolicoeur, Gluck, & Kosslyn, 1984; Rosch, Mervis, Gray, Johnson, & Boyes-Braem, 1976). Prototypicality—the extent to which a product's design is similar to the typical or average design of the organization—is important to reduce the burden of information processing (Veryzer & Hutchinson, 1998; Winkielman, Halberstadt, Fazendeiro, & Catty, 2006), enable consumers to identify a product as belonging to its brand (Bloch, 1995), and transfer brand-related positive affect to the focal product (Boush & Loken, 1991; Creusen & Schoormans, 2005; Sujan, 1985). For example, the consistent exterior design of Absolut Vodka products, which all used the signature clear bottle and printed brand name in capitalized letters, invokes the brand image of being pure and high-end (Simonson & Schmitt, 1997). In contrast, distinctiveness within an organization makes the categorization process difficult and frustrating for consumers, leading to negative attitudes toward this product (Cox & Locander, 1987). For instance, a BMW car model without the iconic twin-kidney grille can hardly be recognized as a BMW and is less likely to gain consumers' favor compared to a BMW model with such attribute.

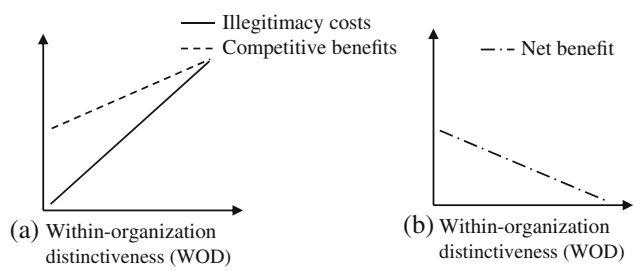

FIGURE 1 Effect of within-organization distinctiveness of product design on performance (*Note*: Figures 1–3 illustrate the general shape and slope of each mechanism. However, we are agnostic as to the absolute levels of these mechanisms and leave those to empirical analyses)

Within-organization distinctiveness of product design can also create benefits because it enhances a product's competitiveness within its organization. A distinctive position generates competitive benefits because it differentiates an organization from competitors (Taeuscher & Rothe, 2021). Similarly, a product's distinctive design can help differentiate it from other products within the same organization, thus increasing the perceived novelty and attractiveness and leading to enhanced competitiveness (Radford & Bloch, 2011; Rindova & Petkova, 2007). However, the competitive pressure of product design within an organization is lower than it is across organizations because products of the same organization tend to be endowed with different attributes to avoid cannibalization (i.e., competition within an organization's own products) (Moorthy, 1984). Given that products within an organization are partial substitutes, the sales of one product of a multiproduct organization may lead to a loss in sales of its other products (Chandy & Tellis, 1998; Mason & Milne, 1994). To reduce cannibalization, multiproduct organizations have long used quality-based segmentation to distinguish among their products (Desai, 2001; Moorthy & Png, 1992). For example, car manufacturers offer compact, mid-size, and large sedans that differ in not only size but also quality and price levels to target different market segments. Sony produces TVs in different sizes (e.g., 55-, 65-, and 75-in. models) and offers different features such as voice control, smart remotes, and phone connections for TV models in each size. Apple's MacBook products differ in display sizes, processors, memory, and storage. The widespread use of different product attributes—including quality, features, and functions—is important to differentiate products within an organization, thus alleviating competition among them.

Figure 1a illustrates the two mechanisms with the solid line representing the effect of within-organization distinctiveness on illegitimacy—expressed as the *illegitimacy costs* mechanism—and the dashed line representing the effect of within-organization distinctiveness on competitiveness—expressed as the *competitive benefits* mechanism.[2] As shown in the left side of Figure 1a, for a product with a low level of within-organization distinctiveness of product design, it does not suffer from illegitimacy because prototypicality facilitates categorization within an organization; on the other hand, this prototypical product still have a certain level of competitiveness within its organization because it is differentiated from other products of the same organization along multiple functional dimensions. More importantly, when within-organization distinctiveness shifts from the low level to the high level, the increase of illegitimacy (i.e., illegitimacy costs) outweighs the increase of competitiveness (i.e., competitive benefits). This is because the competitive pressure is lower than the legitimacy pressure within an organization. The imperfect competition within an organization alleviates the importance of distinct design in increasing a product's competitiveness because products are already differentiated by functions. For example, Absolut Vodka's products adopt consistent designs but are differentiated by flavors. Similarly, although Audi car models look alike, they have unique competitive advantage within Audi family because they are differentiated by other attributes such as powertrain, engine, comfort, and size. In contrast, the legitimacy pressure of design within an organization is strong because an organization needs to facilitate the categorization of its products as members of this organization (Rosch & Lloyd, 1978) and to develop an identity to signal alterity relative to other organizations (Czarniawska, 2008; Levinas, 1999). As such, adopting a distinct design within an organization will lead to a significant loss of legitimacy.

[2]Specifically, the solid line indicates the level of illegitimacy at each level of within-organization distinctiveness of product design, and the dashed line represents the level of competitiveness at each level of within-organization distinctiveness of product design.

Following the cost–benefit analysis used in prior research (Durand et al., 2019), we calculate the net benefit of within-organization distinctiveness as competitive benefits minus illegitimacy costs. As shown in Figure 1b, the net benefit of within-organization distinctiveness diminishes as within-organization distinctiveness increases. We argue that the performance implication of within-organization distinctiveness of design is negative because the increase of within-organization distinctiveness generates greater costs than benefits. Accordingly, we propose the following:

> **Hypothesis (H1).** *A product's within-organization distinctiveness of design has a negative impact on its market performance.*

3.2 | Between-organization distinctiveness of product design and performance implications

Between-organization distinctiveness of product design refers to the extent to which a focal organization's prototypical product design is distinct from the prototypical design of the industry. It reflects the organizational level distinctiveness of product design in an interorganizational context. Between-organization distinctiveness can enhance an organization's competitive advantage via differentiation, but it can also reduce this organization's legitimacy by impeding consumers' recognition. We next delineate the two mechanisms of how between-organization distinctiveness produces competitive benefits and illegitimacy costs and compare their relative strengths.

Between-organization distinctiveness of product design enables an organization to gain competitive advantage over competing organizations in an industry. Strategy scholars have emphasized that an organization must select a position distinct from its rivals to reduce competition (Baum & Singh, 1994; Porter, 1991) and accumulate competitive resources that are valuable, rare, non-substitutable, and inimitable (Barney, 1991). We argue that distinctive product designs represent important strategic resources that are difficult to imitate because they are protected by copyrights. As discussed earlier, products compete based on both design (i.e., how they look) and function (i.e., how they work) (Chan et al., 2018). However, organizations are increasingly capable of developing product functions similar to those of external competitors because they can acquire the underlying technologies of these functions through technology licensing (WIPO, 2015), talent mobility (Edler, Fier, & Grimpe, 2011), and innovation collaboration (Love, Roper, & Vahter, 2014). For example, smart TV technology and its related features can be offered by many TV brands, including Hisense, LG, Samsung, Sony, TCL, and so forth. Electric vehicle technology is owned not only by Tesla and other electric cars startups, but also by some traditional automakers. Therefore, distinct product design has become extremely important in differentiating organizations. Today, design is not merely the look of things, but rather the core to business success (Bloomberg, 2014). Taking Apple as an example, its unique design focused on simplicity is a key driver of its success (Segall, 2013). Similarly, Harley-Davidson's highly distinct and recognizable design based on its unique shape grammar has contributed to the competitive advantage of this established motorcycle brand (Pugliese & Cagan, 2002). As the market is filled with an increasing number of brand options in each product category, having a distinct and novel visual design is crucial to attract consumers' attention and stand out from competitors (Radford & Bloch, 2011).

Between-organization distinctiveness of product design also leads to legitimacy loss by making it difficult to categorize an organization's distinctively designed product into its industry. However, the legitimacy pressure in an interorganizational context is less salient than in an

intraorganizational context because categorization at the industry level is relatively easier than it is within an organization. This is because industry-level categorization only requires categorizing an organization's prototypical design as a member of its industry category, which can be quickly identified based on a holistic shape mechanism or an analysis of basic functions (Rosch et al., 1976; Tversky & Hemenway, 1984). First, recognizing an organization's product as a product of its industry is simple because it only requires the cognitive processing of a product's general shapes, rather than finer visual details, in comparison with the industry prototype (Collin & McMullen, 2005). For example, consumers can easily identify a product as "a car" if it has a closed body with four wheels. Second, it is straightforward to recognize the industry category of a product if its functions meet the basic consumer needs. Research suggests that audiences can categorize a product according to their needs and goals (Barsalou, 1983; Durand & Paolella, 2013). Therefore, even an ambiguous product can receive a relatively positive evaluation if it serves certain functions and fulfills the goals of consumers (Boulongne & Durand, 2021). Taking the furniture industry as an example, although furniture produced by different manufacturers has distinct design styles (e.g., modern, country, traditional, etc.), an item such as chair, bed, or table can be recognized quickly as furniture by its holistic look and basic functions, no matter which distinct design it adopts.

As illustrated in Figure 2a, an organization with a low level of between-organization distinctiveness of product design does not suffer from illegitimacy but is subject to the lack of competitiveness. When between-organization distinctiveness shifts into a higher level, the increase of competitive benefits (dashed line) exceeds the increase of illegitimacy costs (solid line). This is because the competitive pressure overwhelms the legitimacy pressure in an interorganizational context. Organizations face severe competition from other organizations that can offer similar product functions, and thus must heavily rely on distinct product designs to differentiate themselves and boost market performance (Xia et al., 2016). Therefore, distinct design is effective in increasing an organization's competitiveness. On the other hand, distinct design may not significantly reduce an organization's legitimacy because an organization's highly distinct design can still be considered appropriate and desirable as long as its general shapes and basic functions meet the expectations of the industry. The smooth categorization process at the industry level can protect organizations from triggering significant illegitimacy costs even when they adopt a design distinct from the prototypical design of the industry. Therefore, as shown in the right side of Figure 2a, the illegitimacy costs incurred by high between-organization distinctiveness are lower than the competitive benefits.

Figure 2b illustrates the net benefit of between-organization distinctiveness using competitive benefits minus illegitimacy costs. We argue that, as between-organization distinctiveness increases, the gains derived from the increase of competitiveness exceed the costs due to legitimacy loss, thus leading to an overall positive effect on performance. Therefore, we predict:

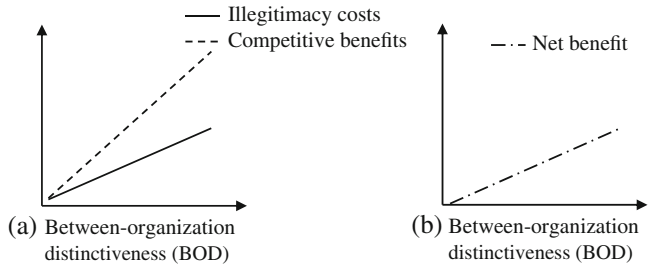

FIGURE 2 Effect of between-organization distinctiveness of product design on performance

Hypothesis (H2). *An organization's between-organization distinctiveness of design has a positive impact on its products' market performance.*

3.3 | Joint considerations of within- and between-organization distinctiveness of product design

Although within- and between-organization distinctiveness represent distinctiveness of product design at different levels, they are not mutually independent but rather interactive. The phenomenon that an object is identified by two orthogonal category dimensions is called crossed categorization (Deschamps & Doise, 1978). For example, a person can be identified by both gender (male vs. female) and race (white vs. black), which can cross to form four new crossed category groups (i.e., white male, white female, black male, and black female) (Beal, 2008; Purdie-Vaughns & Eibach, 2008; Rosette & Livingston, 2012). Research on crossed categorization suggests that two crossed categories can interact with each other in a way that an object's identity in one category influences the perceptions and evaluations of this object's identity in another category (Crisp et al., 2001).

We argue that within- and between-organization distinctiveness provide two crossed dimensions for categorization. These two dimensions are interrelated in such a way that categorization in one dimension may affect categorization in another dimension, thereby exerting a joint influence on categorizing a product. Specifically, a product's identity in between-organization distinctiveness dimension could influence the perception of this product's identity in within-organization distinctiveness dimension through the "vantage-of-atypicality" mechanism. Vantage of atypicality refers to the advantage of an entity that has intersecting atypical identities in both constituent categories. In this case, atypicality in one category, if valued by consumers as a distinct identity, can help build an image of unconventionality, which in turn shields the entity from the potential penalty associated with it being atypical in another category (Purdie-Vaughns & Eibach, 2008). Several studies have demonstrated the vantage of atypicality. For example, unconventionality has a *distancing* mechanism that weakens the prejudice against female leaders when their projects are unconventional (Parker et al., 2020). Unconventionality also has a *buffering* effect, in that unconventional funds are less severely penalized for recent poor performance (Smith, 2011).

Building on these logics, we argue that when between-organization distinctiveness is high, the illegitimacy costs of atypical design within an organization are attenuated by the vantage-of-atypicality effect, as illustrated in the red line in Figure 3a. This is because when an organization is well-known for having distinct designs that distinguish it from other organizations (i.e., high between-organization distinctiveness), consumers will identify this organization as an "organization with non-prototypical design." In this case, consumers may not be surprised when this organization develops a product that is distinct from its other products because "being unconventional" is part of the legitimacy evaluation of this organization's products. For example, BMW 2021 4 Series adopt a distinct design by reshaping the twin-kidney grilles from horizontal to vertical. For BMW brand that has distinguishable design, the distinct design of new 4 series could still be considered legitimate and desirable by BMW fans who really wanted to stand out (Bigg, 2021; Pattni, 2021).

In contrast, as illustrated in the gray line in Figure 3a, the less atypical an organization is, the more likely it will suffer from the illegitimacy costs of atypical design within an organization because prototypical organizations are not protected by the vantage-of-atypicality

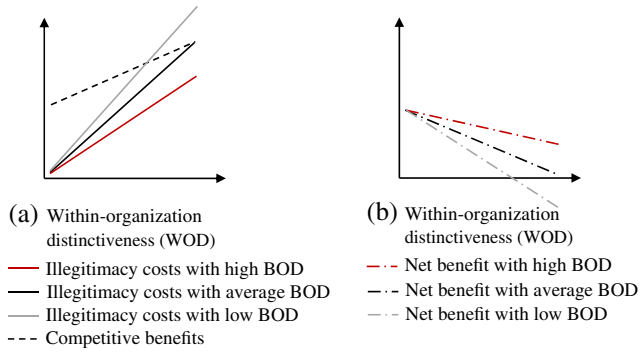

FIGURE 3 Interaction effect of within- and between-organization distinctiveness

mechanism. If an organization focuses on producing products similar in appearance to the average look of products in the industry (i.e., low between-organization distinctiveness), consumers tend to perceive this organization as prototypical and conventional. When a conventional organization provides a highly distinct design that deviates from other products within this organization (i.e., high within-organization distinctiveness), such design deviation violates this organization's identification as "being conventional." As a result, consumers will find it contradictory and frustrating to categorize an unconventional design into a conventional organization, thus reducing the desirability of this distinct design due to the inconsistencies experienced in categorization. For example, the Toyota Supra is a "halo car" with a distinct design that distinguishes it from other ordinary Toyota models. However, the Supra was discontinued in the United States in 1998 due to declining sales that were partly because of the mismatch between the distinct design of this model and the brand image of the automaker as a producer of bland products.

In summary, we argue that organizations must strategically orchestrate the two competing effects of between- and within-organization distinctiveness to benefit from the vantage of atypicality and avoid contradictions in categorization. Figure 3b illustrates the net benefit of within-organization distinctiveness after accounting for the varying illegitimacy costs moderated by between-organization distinctiveness. Overall, the negative performance implication of within-organization distinctiveness is weakened when between-organization distinctiveness is high due to the reduced illegitimacy costs, but is enhanced when between-organization distinctiveness is low because of the increased illegitimacy costs. Thus, we propose the following:

> **Hypothesis (H3).** *The negative effect of a product's within-organization distinctiveness of product design on its market performance will be weakened if its organization's between-organization distinctiveness of product design is high.*

4 | METHODS

4.1 | Data and sample

In this study, we chose the automotive industry as the research setting to test our theoretical arguments and hypotheses. Automotive industry serves as an appropriate context because automakers

must deal with design distinctiveness in both intraorganizational and interorganizational contexts. In line with prior research on the automotive industry (Haunschild & Rhee, 2004; Rhee & Haunschild, 2006; Rhee & Kim, 2015), we focused on the "automaker" (e.g., Buick, Lexus), rather than the "auto firm" (e.g., General Motors Company, Toyota Motor Corporation), as the unit of analysis. Automaker represents an organization with a unique car brand that is owned by its parent auto firm (e.g., both Lexus and Toyota are the automakers/brands of their parent auto firm—Toyota Motor Corporation). Research suggests that the automaker brand (e.g., Buick) is a more important category than the auto firm (e.g., General Motors Company) in consumers' evaluations (Rhee & Haunschild, 2006; Sullivan, 1998). Automakers produce multiple models within the same organization; for example, Toyota brand has many car models including Avalon, Camry, Corolla, Prius, and Yaris, allowing us to simultaneously study both within- and between-organization distinctiveness of product design.

We compiled a data set from multiple sources that previous studies of the automotive industry have used (Haunschild & Rhee, 2004; Landwehr, Labroo, & Herrmann, 2011; Li & Liu, 2019; Rhee & Haunschild, 2006; Rhee & Kim, 2015). For example, we downloaded from Edmunds.com pictures used to measure car design variables and gathered data on annual sales, manufacturer's suggested retail price (MSRP), and cash rebates for each car model from the *Automotive News Market Data Book* (www.autonews.com). We collected information on other car attributes such as horsepower, energy efficiency (i.e., miles per dollar), energy source (i.e., electric vs. gas-powered), length, width, height, and market segment (i.e., luxury vs. economy) from *Ward's Automotive Yearbook* (wardsauto.com/wards-automotive-yearbook) and cross-validated this information using the official website of each car model. In addition, we obtained car safety and car reliability ratings from the Insurance Institute for Highway Safety (www.iihs.org) and *Consumer Reports* (www.consumerreports.org), respectively. Finally, we obtained annual advertising expenditure data for each car model from the Ad$pender data set (www.kantarmedia.com).

According to the classifications of the U.S. Department of Transportation, light-duty vehicles can be generally classified into two groups: *passenger cars* and *light trucks* (Kockelman & Zhao, 2000; Stone & Hamilton, 2017). In this study, we focused on passenger cars and excluded light trucks, a category that includes pickup trucks as well as sport utility vehicles and minivans, because of their different designs and purposes such as hauling things in addition to people. Therefore, all vehicles in our sample belong to the passenger car category.

Our final sample consisted of 34 automakers (e.g., Audi); 246 car models (e.g., Audi A4); and 2,203 model-year observations (e.g., 2016 Audi A4) for passenger cars sold in the U.S. from 2001 to 2016. Each automaker has a unique brand (e.g., Audi) for all passenger car models it produces. The 34 automakers (e.g., Audi) in our sample belong to 16 auto firms (e.g., Volkswagen Group). Of the car models, 97 are luxury, and 149 are economy models; 61 are made by European automakers, 87 are made by Asian automakers, and 98 are made by American automakers.

4.2 | Dependent variable

We focused on the market performance of the car models as the dependent variable. Specifically, we measured *unit sales* as the number of units (in thousands of units) of each car model sold in the U.S. market in each year of the sample period. We further used *market share* and *sales revenue* as two alternative variables of market performance in robustness checks.

4.3 | Independent variables

We measured the two independent variables, *within-* and *between-organization distinctiveness* of car design, using the morphing technology (Landwehr et al., 2011; Li & Liu, 2019; Liu et al., 2017) that requires the following three steps to create the morphs.[3] First, we collected standard frontal pictures of all models in our sample. We focused on the frontal design of cars because it is the most recognizable design for consumers (Ranscombe, Hicks, Mullineux, & Singh, 2012).

Second, we used image-processing software to locate 50 design points in the frontal design of each car model.[4] Specifically, we placed each car's frontal image into the Cartesian coordinate system and set the lowest point in the middle of the car's front as the origin of the system. The image of each car was normalized by setting the width of a car as one unit without changing the relative height-to-width ratio. We then extracted the 50 most recognizable design points, such as grille, headlights, bumper, side mirrors, windshield, and body shape, to represent the key elements of a car's frontal design. We used a vector (x,y) of coordinate values to represent the locations of these 50 design points.

Third, we created the morph for each automaker (i.e., automaker morph) and the morph for the automotive industry (i.e., car morph). Specifically, the automaker morph represents the average design of all car models produced by an automaker, and the car morph represents the average design of all car models in the automotive industry. We computed the mean position of each of the 50 design points across all car models by the same automaker in each year. Thus, these 50 mean positions defined an automaker's morph. Similarly, the car morph was computed by the mean position of each design point across all car models in the automotive industry in each year.

According to our theory, *within-organization distinctiveness* is calculated as the extent to which a car model's design differs from its automaker's morph (i.e., the average design of all car models of an automaker). We adopted the Euclidean distance formula to calculate the within-organization distinctiveness, as follows:

$$\text{Within}-\text{organization distinctiveness}_{ijt}=\sum_{p=1}^{50}\sqrt{\left(x_{ijt}^{p}-x_{jt}^{p}\right)^{2}+\left(y_{ijt}^{p}-y_{jt}^{p}\right)^{2}},$$

where x_{ijt}^{p} and y_{ijt}^{p} represent the two-dimensional coordinate values of design point p (p = 1, 2, 3, ..., 50) of car model i of automaker j in year t, and x_{jt}^{p} and y_{jt}^{p} represent the corresponding coordinate values of design point p of the morph of automaker j in year t.

Using an automaker, Hyundai, as an example, Figure 4 illustrates the automaker morph of Hyundai in 2016 and the comparisons between two Hyundai models with the Hyundai morph. Specifically, the 2016 Hyundai Sonata had a lower within-organization distinctiveness than the 2016 Hyundai Accent. Compared with the Accent, the Sonata is more like the Hyundai morph.

Between-organization distinctiveness refers to the extent to which an automaker's average design is distinct from the car morph (i.e., the average design of all car models in the automotive industry). We calculated the Euclidean distance between an automaker's morph and the car morph as between-organization distinctiveness, as follows:

[3]A step-by-step guideline of the morphing technology is provided in the online Appendix S1.
[4]A detailed description of these 50 points is provided in the online Appendix S2.

(a) Hyundai morph 2016

(b) Hyundai Sonata 2016
Low within-organization distinctiveness

(c) Hyundai Accent 2016
High within-organization distinctiveness

FIGURE 4 Examples of car models with low and high within-organization distinctiveness

(a) Car morph 2016

(b) Chevrolet morph 2016
Low between-organization distinctiveness

(c) Acura morph 2016
High between-organization distinctiveness

FIGURE 5 Examples of automakers with low and high between-organization distinctiveness

$$\text{Between}-\text{organization distinctiveness}_{jt}=\sum_{p=1}^{50}\sqrt{\left(x_{jt}^{p}-x_{t}^{p}\right)^{2}+\left(y_{jt}^{p}-y_{t}^{p}\right)^{2}},$$

where x_{jt}^{p} and y_{jt}^{p} represent the two-dimensional coordinates of design point p (p = 1, 2, 3, ..., 50) of automaker j's morph in year t, and x_{t}^{p} and y_{t}^{p} represent the coordinates of design point p of the car morph in year t.

Figure 5 shows the car morph of the automotive industry in 2016 and compares two automaker morphs with the car morph. Specifically, the 2016 Chevrolet morph had a lower between-organization distinctiveness than the 2016 Acura morph; in other words, the Chevrolet automaker's design was more prototypical of the automotive industry, but the Acura automaker's design was more distinctive.

4.4 | Control variables

We controlled for various factors that could affect the market performance of car models. Price setting is an important capability that determines a firm's value creation (Dutta, Zbaracki, & Bergen, 2003). Therefore, we controlled for a model's *price* (in thousands of U.S. dollars) in a

given year by using MSRP less cash rebates (Zettelmeyer, Morton, & Silva-Risso, 2006). Because advertising intensity affects market performance (Bettis, 1981), we controlled for annual *advertising expenditures* (in millions of U.S. dollars) of each brand in a given year. Following prior research (Berry, Levinsohn, & Pakes, 1995; Sudhir, 2001), we also controlled for a set of car attributes considered important in influencing auto market performance: *horsepower-to-weight ratio*, which measures a car's power; *miles per dollar*, which measures energy efficiency; *safety ratings*, which is measured on a four-point scale by the Insurance Institute for Highway Safety rating; *reliability ratings*, which is measured on a five-point scale by Consumer Reports; and a car's *length*, *width*, and *height*, which measure a model's size. In addition, we included car classification to account for the influence of different market segments on car sales. Specifically, we controlled for whether a car falls in the luxury segment by including a dummy, *luxury segment*, coded as 1 if a car is a luxury car and 0 otherwise. We also controlled for *battery electric vehicle* to indicate if a model is a fully electric vehicle with a rechargeable battery and no gasoline engine (1 = yes, 0 = no). New car models may suffer from the "liability of newness" (Freeman, Carroll, & Hannan, 1983; Singh, Tucker, & House, 1986) and face a greater risk of failure than established models. As such, we controlled for *model age* as measured by the number of years elapsed since the year of a car model's introduction. Finally, we included the automakers' country-of-origin dummies (i.e., Europe, Japan, and Korea), auto-firm dummies, and year dummies to account for country, auto firm, and year fixed effects, respectively.

4.5 | Estimation methods

Our data are structured at two levels: The car model-level data are nested in the organizational (i.e., automaker) level. We also measured the two independent variables at two levels: within-organization distinctiveness, which is a car model-level predictor, and between-organization distinctiveness, which is an organizational level predictor. Given the multilevel structure of our data, we adopted multilevel modeling, a recommended method to increase precision in analyzing nested data structures (Peterson, Arregle, & Martin, 2012). We estimated the intraclass correlations (ICCs) at the organizational level as 0.27, accounting for 27% of the variance in unit sales. According to Hox (2010), ICCs exceeding 0.10 and 0.15 are deemed as medium and large, respectively. We therefore used a two-level random intercept model that allows the constant term (intercept) to vary randomly at the organizational level.

The multilevel model has three advantages over the traditional single-level regression analysis. First, it accounts for the nonindependence of observations within the same organization. Second, it acknowledges the existence of multiple levels of predictor variables and partitions multiple levels of variance in the outcome variable (Hofmann, Griffin, & Gavin, 2000). Third, it enables researchers to simultaneously estimate fixed coefficients and random intercept, which are parameter estimates that are allowed to vary across groups/organizations.

We reported the robust standard errors derived from the robust variance estimator (White, 1980), which produces consistent standard errors and yields asymptotically consistent estimates even when the errors are heteroscedasticity. We mean-centered the predictors in generating the interaction terms, as suggested by Aiken and West (1991). For all models, the variance inflation factor ranges from 1.13 to 2.97, indicating no threat of multicollinearity (Gujarati, 2003).

TABLE 1 Descriptive statistics and Pearson correlations

	Variables	Mean	*SD*	Min	Max	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Unit sales	49.33	73.96	0.00	473.11																	
2	Within-organization distinctiveness	1.59	0.85	0.52	12.19	−0.09																
3	Between-organization distinctiveness	1.23	0.59	0.43	4.34	−0.10	−0.01															
4	Price	33.65	22.95	9.05	224.61	−0.33	0.17	0.15														
5	Advertising expenditures	30.67	23.40	0.00	127.73	0.22	0.06	−0.24	−0.07													
6	Horsepower-to-weight ratio	0.77	0.16	0.25	1.43	0.09	0.16	0.00	−0.01	0.10												
7	Miles per dollar	25.80	5.47	15.50	64.50	0.29	−0.03	0.07	−0.50	0.15	−0.11											
8	Safety ratings	3.66	0.37	1.00	4.00	−0.01	−0.01	−0.04	0.06	−0.02	−0.03	−0.07										
9	Reliability ratings	3.16	1.07	1.00	5.00	0.11	0.04	0.00	−0.04	0.17	0.14	0.15	0.06									
10	Length	183.12	13.70	120.10	216.20	0.10	−0.22	−0.16	0.25	−0.03	0.02	−0.43	0.07	−0.08								
11	Width	71.41	3.26	50.80	84.20	−0.13	−0.10	0.08	0.46	−0.07	0.01	−0.52	0.10	−0.12	0.62							
12	Height	56.19	3.17	44.00	76.50	0.17	−0.12	−0.01	−0.35	0.15	−0.08	0.26	0.13	0.05	0.19	−0.15						
13	Luxury segment	0.44	0.50	0.00	1.00	−0.37	−0.05	0.11	0.68	−0.13	−0.10	−0.46	0.11	0.00	0.24	0.40	−0.28					
14	Battery electric vehicle	0.02	0.14	0.00	1.00	0.09	0.03	−0.02	−0.09	0.06	−0.03	0.10	0.03	0.00	−0.15	−0.09	0.12	−0.10				
15	Model age	17.51	15.87	0.00	78.00	0.23	−0.03	−0.11	0.02	0.10	−0.04	−0.07	0.03	−0.06	0.18	0.14	0.00	−0.10	0.00			
16	Europe	0.30	0.46	0.00	1.00	−0.26	−0.16	0.24	0.44	−0.20	−0.43	−0.20	0.09	−0.21	−0.06	0.19	−0.14	0.46	0.04	0.07		
17	Japan	0.31	0.46	0.00	1.00	0.15	0.05	−0.08	−0.16	0.14	0.19	0.23	0.09	0.40	−0.14	−0.27	0.03	−0.13	−0.09	−0.08	−0.43	
18	Korea	0.07	0.26	0.00	1.00	0.04	−0.08	−0.18	−0.16	0.21	0.11	0.11	−0.14	0.01	−0.04	−0.09	0.08	−0.16	0.06	−0.10	−0.18	−0.19

Note: $N = 2{,}203$. Correlation coefficients with absolute values greater than or equal to 0.04 are statistically significant at $p < .05$.

TABLE 2 Results of multilevel modeling

Dependent variable: Unit sales					
Variables	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**
Within-organization distinctiveness (X1)		−10.752 [.021]		−10.973 [.017]	−11.251 [.006]
Between-organization distinctiveness (X2)			9.227 [.011]	10.229 [.006]	10.860 [.003]
X1 × X2					13.029 [.027]
Price	−0.612 [.000]	−0.390 [.010]	−0.632 [.000]	−0.407 [.006]	−0.466 [.004]
Advertising expenditures	0.214 [.003]	0.227 [.001]	0.247 [.000]	0.263 [.000]	0.275 [.000]
Horsepower-to-weight ratio	32.402 [.231]	36.325 [.174]	32.373 [.229]	36.409 [.171]	35.495 [.188]
Miles per dollar	1.461 [.087]	1.320 [.108]	1.389 [.104]	1.237 [.134]	1.234 [.139]
Safety ratings	2.103 [.778]	3.765 [.605]	2.686 [.722]	4.434 [.550]	4.734 [.511]
Reliability ratings	−0.578 [.817]	−0.432 [.856]	−0.664 [.785]	−0.530 [.818]	−0.552 [.808]
Length	1.780 [.000]	1.566 [.000]	1.804 [.000]	1.587 [.000]	1.518 [.000]
Width	−1.514 [.090]	−1.825 [.122]	−1.677 [.060]	−2.007 [.089]	−1.768 [.102]
Height	−0.995 [.357]	−0.760 [.444]	−1.100 [.310]	−0.866 [.384]	−1.075 [.241]
Luxury segment	−37.401 [.001]	−37.268 [.000]	−37.320 [.001]	−37.149 [.000]	−35.410 [.001]
Battery electric vehicle	49.742 [.173]	49.990 [.190]	49.442 [.175]	49.630 [.193]	49.472 [.200]
Model age	0.693 [.027]	0.678 [.026]	0.689 [.027]	0.672 [.026]	0.711 [.020]
Europe	5.257 [.748]	−3.416 [.840]	0.592 [.971]	−8.890 [.603]	−5.710 [.729]
Japan	52.153 [.050]	47.632 [.089]	64.420 [.014]	61.180 [.026]	67.557 [.011]
Korea	−35.477 [.018]	−44.446 [.008]	−41.970 [.006]	−51.916 [.003]	−46.008 [.005]
Constant	−129.950 [.198]	−85.908 [.394]	−111.374 [.264]	−64.733 [.517]	−63.582 [.514]
Year fixed effects	YES	YES	YES	YES	YES
Auto firm fixed effects	YES	YES	YES	YES	YES
Number of groups	34	34	34	34	34
Log pseudolikelihood	−11,984.55	−11,966.02	−11,981.31	−11,962.00	−11,953.63
R^2	.342	.353	.344	.355	.360

Note: $N = 2{,}203$. Two-tailed tests; p-values are shown in brackets.

5 | RESULTS

5.1 | Results of hypotheses testing

Table 1 displays descriptive statistics and Pearson correlation coefficients for all the variables used in this study. Table 2 reports the results of the multilevel models in analyzing the hypothesized effects. In Table 2, Model 1 introduces all the control variables; Models 2 and 3 add the main effects of within-organization distinctiveness and between-organization distinctiveness, respectively. Model 4 includes both independent variables, and Model 5 is the full model that includes the two independent variables and their interaction term.

Hypothesis (H1) predicted within-organization distinctiveness impacts market performance negatively. In support of Hypothesis (H1), in Table 2, Model 5 shows within-organization distinctiveness has a significant and negative effect on unit sales ($\beta = -11.251$, $p = .006$). This implies that if a car model's within-organization distinctiveness of product design increases by 1 *SD*, its annual sales will decrease by 9,563 units. Models 2 and 4 also show similar results (Model 2: $\beta = -10.752$, $p = .021$; Model 4: $\beta = -10.973$, $p = .017$), lending further support to Hypothesis (H1).

Hypothesis (H2) proposed that between-organization distinctiveness positively affects market performance. We found a positive and significant effect of between-organization distinctiveness on unit sales in Model 5 ($\beta = 10.860$, $p = .003$), in support of Hypothesis (H2). This result suggests a 1 *SD* increase in between-organization distinctiveness of product design leads to the annual sale of 6,407 more units for a car model. Similarly, Models 3 and 4 also show a significant and positive coefficient of between-organization distinctiveness (Model 3: $\beta = 9.227$, $p = .011$; Model 4: $\beta = 10.229$, $p = .006$).

Hypothesis (H3) predicted between-organization distinctiveness positively moderates the effect of within-organization distinctiveness on performance by weakening the negative impact of within-organization distinctiveness. In support of Hypothesis (H3), Model 5 shows that the interaction between within-organization distinctiveness and between-organization distinctiveness is positive and significant ($\beta = 13.029$, $p = .027$), indicating the negative effect of

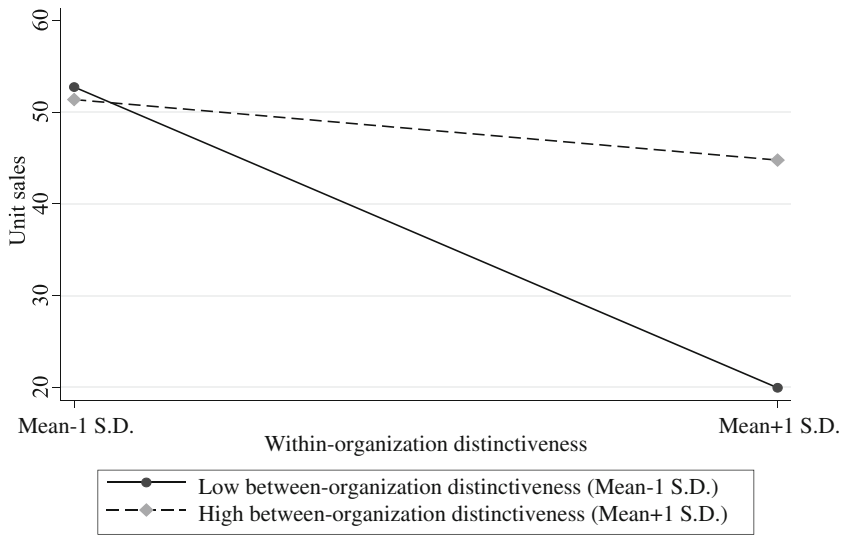

FIGURE 6 Interaction plot

within-organization distinctiveness of product design on unit sales is attenuated if an automaker's between-organization distinctiveness of product design is high.

Figure 6 plots the interaction effect of within- and between-organization distinctiveness on unit sales. In line with our predictions, within-organization distinctiveness negatively affects unit sales, and the negative slope of within-organization distinctiveness becomes less steep when between-organization distinctiveness is high. Moreover, the average level of unit sales is higher when between-organization distinctiveness is high rather than low. Overall, the interaction plot provides further support for all three proposed hypotheses.

In addition, we found that when within-organization distinctiveness is low, both high between-organization distinctiveness and low between-organization distinctiveness have similarly high levels of unit sales. However, when within-organization distinctiveness is high, the unit sales of high between-organization distinctiveness are significantly higher than those of low between-organization distinctiveness. These findings suggest that if an organization positions itself as having prototypical product design in its industry, it should avoid introducing a non-prototypical product that is significantly distinct from its other products.

5.2 | Supplementary analyses and robustness checks

We conducted a series of supplementary analyses to ensure that our results are robust and reliable. The results of all these analyses are reported in the online Appendix.

5.2.1 | Organization fixed-effects models

Organizations (i.e., automakers) may have unobserved and unmeasured factors (e.g., historical reputations) that influence their product design and market performance. To alleviate potential endogeneity concerns due to omitted variables, we included organizational level fixed effects to control for unobserved, time-invariant heterogeneity of organizations. The fixed-effects models have similar results with those of the multilevel models.

5.2.2 | Testing the mechanisms

To provide evidence that our clarified mechanisms (competitive benefits vs. illegitimacy costs) exist, we studied the influence of an event—the introduction of new car models by an automaker—which may influence both mechanisms. We argue that when an automaker introduces new model(s) in a given year, the competitive benefits derived from within-organization distinctiveness are greater because the competitive pressure within an automaker becomes higher after having new model(s). In contrast, the illegitimacy costs of within-organization distinctiveness are reduced because an automaker's newly added car model(s) are less familiar to consumers and thus blur consumers' perceptions of the average design of this automaker. Therefore, the illegitimacy costs derived from being different from an automaker's average design is reduced because the benchmark to gauge distinctiveness becomes less clear. In line with these arguments, we found that the introduction of new model(s) by an automaker in a given year indeed alleviates the negative effect of within-organization distinctiveness on market performance.

5.2.3 | Examining a fourfold typology

We classified car models into four categories based on the levels of within- and between-organization distinctiveness and used a dummy variable to represent each category.[5] We included three dummies in the models except the dummy of high within- and high between-organization distinctiveness, which serves as the baseline category. We found that car models with low within- and high between-organization distinctiveness have the highest market performance compared with car models with both low within- and low between-organization distinctiveness as well as car models with both high within- and high between-organization distinctiveness. Car models with high within- but low between-organization distinctiveness have the lowest performance. These results lend further support to the main effects of within- and between-organization distinctiveness.

5.2.4 | Accounting for the level of exposure

We further controlled for the level of exposure of each car model because higher exposure may reinforce consumers' perception of the distinctiveness of the car model. Because our sales data are only available since 2001, we constructed a subsample consisting of car models introduced in or after 2001 so that the sales data of these models are complete. According to *Ward's Automotive Yearbook*, the average life-span period of a car in the United States was about 11 years (Liu et al., 2017). We then calculated the total number of a model in circulation in the observed year as the cumulative sales of this model during the past 11 years. The results of models controlling for this variable using the subsample remained consistent.

5.2.5 | Alternative measure of independent variable

We adopted an alternative measure of between-organization distinctiveness by calculating the Euclidean distance of a focal automaker's average design from the average design of all car models produced by other automakers. This new measure avoids the possibility that the x and y averages (i.e., coordinate values of the car morph) could be biased depending on the number and typicality of the focal automaker's own car models present in the market. The results of models using this new measure remained robust.

5.2.6 | Alternative measures of dependent variable

We adopted two alternative dependent variables—*market share* and *sales revenue*—to capture the market success of each car model. Following prior research (Sudhir, 2001), we defined the potential market size in each year as the number of consumers considering a car purchase in a particular year t and calculated it using the following equation: potential market

[5]The four categories/dummies are (a) low within- and high between-organization distinctiveness, (b) low within- and low between-organization distinctiveness, (c) high within- and high between-organization distinctiveness, and (d) high within- and low between-organization distinctiveness. We define the value of within- or between-organization distinctiveness as low/high if it is less/greater than the mean of this variable.

size_t = (number of households$_t$ × average number of cars per household$_t$)/average age of car. We then used the annual unit sales of each car model divided by the potential market size in each year to obtain annual market share data in the United States. Moreover, we used the annual sales revenue data (in billions of U.S. dollars) of each car model in each given year as the second alternative variable of market performance. We found consistent results using *market share* and *sales revenue* in both the multilevel and fixed-effects models.

5.2.7 | Use a sample of automakers that have at least three car models

The number of car models within an automaker may influence the value of within-organization distinctiveness.[6] In our sample, the number of car models owned by an automaker in a year ranges from 1 to 10, with an average of 5.36. To avoid a situation in which an automaker's morph is dominated by one or two car models, we removed the automakers that had only one or two car models in a single year. As a result, 124 model-year observations were removed. The results remained consistent with our main analysis.

5.2.8 | Exemplar-based approach

In addition to the prototype-based approach adopted in our analysis, which uses the average design of each category as the benchmark to measure distinctiveness (Barsalou, 1985; Rosch et al., 1976; Veryzer & Hutchinson, 1998; Winkielman et al., 2006), we further adopted an exemplar-based approach that uses the best-selling cars as the benchmark (Cohen & Basu, 1987; Smith & Medin, 1981) because the exemplars or market leaders may influence consumers' judgments and evaluations of other car models. We found very similar results using the two new independent variables calculated based on the exemplar-based approach.[7]

5.2.9 | Split-sample analyses

We performed split-sample analyses to account for the potential influence of different subsets in our data. Specifically, we divided the sample into two groups—new car models (i.e., car models introduced in the past 3 years) and old car models (i.e., car models introduced more than 3 years ago). Compared to old models, new models are less likely to suffer from illegitimacy costs caused by design distinctiveness because their identities of "being new" make the novel and distinct design more desirable and aligned with consumers' expectations. Therefore, we expect that the negative impact of within-organization distinctiveness on performance is

[6]If an automaker has only one car model, within-organization distinctiveness of this model would be 0 because this model represents the morph of this automaker. If an automaker has two car models, within-organization distinctiveness of these two car models would be equal because the Euclidean distance from these two models' designs to their average design are the same.

[7]Using the exemplar-based approach, we measured within-organization distinctiveness as the Euclidean distance of a car model's design from the design of the best-selling car of this model's automaker, and between-organization distinctiveness as the Euclidean distance of an automaker's average design from the design of the best-selling car in the industry. Over the 16 years from 2001 through 2016, the Toyota Camry has ranked 15 times as the industry's best seller and the Honda Accord once.

weaker for new models than it is for old models. The results of split-sample analyses supported our expectations.

5.2.10 | Check on a potential curvilinear relationship

Because some prior research on organization-level distinctiveness has found a curvilinear relationship with performance (see Haans, 2019 for a review), we tested if there exists a curvilinear relationship between our organizational level predictor (i.e., between-organization distinctiveness of product design) and market performance. However, the squared term of between-organization distinctiveness of product design is not significant. The lack of empirical evidence of a curvilinear effect is probably because extremely distinctive and unrecognizable designs are lacking in our research context of a well-established industry (e.g., automotive industry). We have discussed in detail the boundary conditions of our findings in Section 6.

5.2.11 | Qualitative evidence

To complement the quantitative analyses presented above, we conducted additional analyses, including an online survey and a text analysis of car reviews, to obtain qualitative evidence that further validate our findings and confirm the underlying mechanisms. We provided the details and results of these analyses in the online Appendix.

6 | DISCUSSION AND CONCLUSION

6.1 | Theoretical contributions

In this study, we built on contemporary OD research and contributed to this conversation by advancing the notion of OD as a multilevel construct. Recent studies have identified institution- and firm-level factors that influence OD choices (Gupta et al., 2020; McKnight & Zietsma, 2018). However, this research is still focused on achieving organization-level optimal strategic positioning. Our study further extends this research by developing a multilevel framework and simultaneously investigating OD at both product- and organization-levels. We suggest that organizations can strategize the levels of distinctiveness of product design both across their different products and across organizations within the same industry. This is because consumers' evaluation of distinctiveness at the two levels entails distinct categorization processes using different benchmarks and with different information processing intensity. Moreover, producers tend to differentiate their own products among multiple features, thus alleviating competition within their organizations. As a result, the legitimacy and competitive pressures vary across the two levels. Therefore, organizations need to carefully manage their distinctiveness at both levels to be considered optimally distinct.

Recent research on OD has also increasingly recognized that what constitutes an optimally distinct positioning varies across contexts and has set out to examine different contextual contingencies of the strategic differentiation–performance relationship (see Zhao & Glynn, 2021 for a review). The contextual contingencies investigated to date are quite diverse and cover factors ranging from individual characteristics such as status (Prato, Kypraios, Ertug, & Lee, 2019), to organizational level identity (Syakhroza, Paolella, & Munir, 2019), ownership, and governance

structures (Ge & Micelotta, 2019; Miller, Le Breton-Miller, & Lester, 2013; Zhang, Wang, & Zhou, 2020), to broader structures and types of market categories (Barlow et al., 2019; Gehman & Grimes, 2017; Haans, 2019). Our study adds to this conversation by identifying OD in both intraorganizational and interorganizational contexts. Moreover, we find that the illegitimacy costs caused by distinctiveness in one context change depending on the identity the organization projects at the other context.

In terms of a theoretical foundation, our study further furnishes the theoretical grounding of OD research in the categorization literature. Zuckerman's (1999) pioneering research on market categories emerged around the same time as the strategic balance perspective (Deephouse, 1999) and has similarly influenced subsequent studies on OD. Specifically, Zuckerman proposed a two-stage valuation approach for addressing the conformity versus differentiation tension. According to the two-stage valuation model, organizations need first to exhibit certain common characteristics so as to be readily compared with others and then stand out from all legitimate competitors to gain positive evaluations. Many scholars have interpreted this two-stage model to imply that organizations need to first cross a certain legitimacy threshold and become part of the consideration set before they can benefit from differentiation. Our research expands Zuckerman's model by suggesting that this legitimacy threshold is not fixed but varies across levels. Compared with the organizational level categorization, the legitimacy threshold of the industry level categorization is lower and easier to meet, imposing less pressure to conform while leaving more room for differentiation. As such, attending to the categorization processes at both the organizational and industry levels allowed us to make divergent predictions about how strategic differentiation affects market performance.

It is also important to note that our theoretical arguments have been developed primarily based on product design in established industries (e.g., the automotive industry), which sets boundary conditions for our findings. In established industries, the legitimacy threshold of a product's exterior design is low because both producers and consumers are familiar with the core elements in terms of attributes and functions that define the product prototype at the industry level (Rosa, Porac, Runser-Spanjol, & Saxon, 1999). Therefore, a producer's novel design is still considered acceptable by consumers if this product's functions meet consumers' expectations in this industry. For example, Porsche is one of the automakers with the highest between-organization distinctiveness of product design in our sample, but its unique and iconic design serves as its competitive advantage rather than as a cause of legitimacy loss. In well-established industries such as automotive, consumers even expect automakers to promote disruptive changes in design and technologies to transform the whole industry (McKinsey, 2016).

Moreover, in an established industry setting (e.g., the automotive industry) characterized by maturity and institutionalization, product designs have been vetted over the years. Therefore, the range of distinctiveness of product design is relatively limited and extremely distinctive product designs are rare. This may explain why we did not find an inverted U-shaped relationship between between-organization distinctiveness of product design and market performance. However, researchers studying other contexts such as nascent industries may need to use our arguments with caution because there may be more experimentation with product attributes and wider ranges of differentiation among product offerings (Durand & Khaire, 2017; Zhao et al., 2018).

6.2 | Managerial implications

Our findings have important managerial implications for multiproduct organizations. In today's business world, almost no organization produces only one product (Anand & Shachar, 2004).

However, the question of how multiproduct organizations achieve OD in both within- and between-organization contexts remains largely unexplored. Our research provides evidence that the effective orchestration of distinctiveness of product design at different levels leads to superior market performance. First, organizations should increase between-organization distinctiveness to differentiate themselves in the market to gain competitive advantage. Second, they should also be careful to avoid developing a product too different from their other products. This is especially true if the organization has already adopted a prototypical design strategy. Therefore, the optimal design strategy is to create designs different from those of other brands but maintain design consistency within the same brand, while the worst scenario is to launch a design that departs too drastically from the brand's existing designs when their brand is known in the industry as having average designs.

While obtained from the U.S. automotive industry, these findings may provide insights to companies in other industries where product design plays an important role. For example, in the fashion industry, a fashion brand should consider developing a signature style that differs from other brands but is consistent throughout every fashion item of this brand to both stand out and create consistent brand awareness (Bonigala, 2018). Illustrating this, a British fashion brand, Burberry, uses the tan, black, white, and red "house check" tartan pattern as its signature design in most of its products, which are successfully differentiated from other brands. In the consumer electronics industry, the success of Apple serves as another good example, as its success could be largely attributed to its unique design that is consistently adopted by all Apple products (Belyh, 2019).

6.3 | Methodological implications

Crucial to our analysis is the introduction of the morphing technique that creates an image-based measure of product distinctiveness. The use of computerized technique of mathematically averaging images of objects was first established to generate a prototypical facial image using several individual facial images (Langlois & Roggman, 1990). Since its inception, this technique has been widely adopted in psychological research (Benson & Perrett, 1993; Steyvers, 1999), and has been recently applied to measure typicality in marketing research (Landwehr et al., 2011; Landwehr, Wentzel, & Herrmann, 2013), but to our knowledge, it has yet to be applied in organizational studies. On the other hand, scholars have made efforts to advance organizational research by leveraging the increasing availability of novel image-based data (George, Osinga, Lavie, & Scott, 2016) using computational techniques such as convolutional neural network (Choudhury, Wang, Carlson, & Khanna, 2019) and facial expression recognition software (Jiang, Yin, & Liu, 2019). We join these efforts by introducing the morphing technique as an alternative tool for image processing. Moreover, we suggest that the morphing technique—created based on the logic of mathematical average—is uniquely suited for OD research, as prototype is often regarded as the default benchmark with which a product or firm's similarity is compared (Zhao, 2021). We encourage future research to further leverage this novel technique to advance our understanding of OD.

6.4 | Limitations and future research

This study has limitations that open avenues for future research. First, although the underlying mechanisms of competitive benefits and illegitimacy costs constitute the core of our theoretical

arguments, we are not able to empirically separate these two mechanisms and test them, respectively. Instead, we theoretically compared the relative strengths of these two mechanisms and empirically tested the "net benefit" (Durand et al., 2019), which represent competitive benefits minus illegitimacy costs. We encourage future research to directly test these two mechanisms individually to further advance our understanding of the performance implications of distinctiveness. Second, although we envision our theoretical framework to be broadly applicable, our empirical analysis is situated in the well-established automotive industry, which serves as the boundary conditions of our findings. Future OD research could expand this boundary and test the external validity of our theoretical framework by contextualizing the multilevel framework in other industries or countries to find the optimal levels of strategic positioning. Finally, because OD is a temporally dynamic construct (Zhao & Glynn, 2021; Zhao et al., 2018), it is important to study how temporality influences the mechanisms of legitimacy and competitiveness, which further influence the optimal levels of distinctiveness. For instance, a recent research (Chan et al., 2021) examined how a product design's similarity to past designs versus contemporary peers influence performance in different ways. We believe it is valuable to further explore the temporality of within- and between-organization distinctiveness in future research.

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from WARDS Automotive and Automotive News. Restrictions apply to the availability of these data, which were used under license for this study. Data are available from Krista Li at https://kelley.iu.edu/faculty-research/faculty-directory/profile.html?id=KJLI with the permission of WARDS Automotive and Automotive News.

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SUPPORTING INFORMATION

Additional supporting information may be found in the online version of the article at the publisher's website.

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