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Brand response to environmental turbulence: A framework and propositions for resistance, recovery and reinvention

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ABSTRACT

As valuable assets of corporations, governments and not-for-profit organizations, brands have attracted considerable research attention. We know a lot about how brands create knowledge in their target consumers' minds, which leads to an attitude towards or relationship with the brand that translates into a number of favorable outcomes. The resultant brand equity is often associated with improved performance of the organization in reaching its objectives such as increasing market value. We know less about the dynamic nature of brand equity and, in particular, how it may interact with turbulence in the external environment in which the brand competes, both positively and negatively. We examine three key dimensions of brand equity—brands' access to their target markets, perceived differentiation, and level of brand engagement with their target consumers—that influence the effect environmental turbulence has on diminishing equity or providing future opportunities for brand equity growth. Borrowing from the strategy literature, we suggest ways in which agile and resilient firms can use brand equity to resist environmental turbulence, recover from any damage that may result from it, and reinvent themselves to leverage opportunities created by a radically altered external environment. We close with a set of propositions intended to guide managers in anticipating and responding to environmental turbulence and inform and shape future research in this area.

1. Introduction

Brands are important and valuable intangible assets, with strong and successful brands often representing a large proportion of a firm's market capitalization or market value (Mizik, 2014; Nguyen & Feng, 2021). However, the value of these assets, as measured for example by brand market value, may be subject to significant variation over time. For example, according to Interbrand's Best Global Brands valuation (Interbrand 2021), Microsoft's brand value almost tripled between 2000 and 2020, from $65B to $166B, while Apple's and Amazon's brand values skyrocketed from $5.5B to $323B, and $3.1B to $201B, respectively, reflecting the brands' ability to tolerate and adapt to and exploit change. On the other hand, iconic brands such as Coca-Cola and General Electric experienced significant declines in value during the same period, from $69B to $56B, and from

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$42B to $18B, respectively, revealing potential limits to the brands' competence to adjust to change. Finally, Nokia's fortune is even more dramatic, from a Top 5 brand valued at $35B in 2000, to exclusion from the Top 100 list in 2020, exposing the brand's inability to keep pace with competitive threats. We posit that one of the major factors that distinguishes the winners from the losers, is the brand's ability or failure to anticipate and adapt to environmental turbulence by realigning its strategy to exploit the new competitive context. To understand the organizational and brand management skills required to effectively address environmental turbulence, we briefly revisit the well-researched area of brand equity, examine the nature of environmental turbulence, identify the effects that each of the three distinct forms of turbulence have on three key dimensions of brand equity, and suggest ways in which organizations can not only ameliorate negative outcomes but realize positive gains by reinventing themselves to take advantage of the 'new normal' created by the turbulence. In this paper we focus on brands managed by for-profit organizations, but much of what we discuss also applies to not-for-profit and government organization brands.

The literature on brand equity has largely focused on the creation, maintenance, growth, extension, and leveragability of brands as assets, developing conceptual frameworks linking strategic brand investments to cash flow growth, acceleration, expansion, and reduced volatility, and thereby to investors' assessment of firm value (Srivastava, Shervani, & Fahey, 1998). However, brand assets can also be damaged or destroyed, and their value—both for the firm and to the consumer—can be significantly impaired, as noted earlier. Although firms do not purposely elect to pursue strategies that lead to impairment of their brand assets, failure to anticipate changes in the external environment before they occur, or an inability to adapt to external environment changes after they have happened, often lead to significant loss of value, or even the destruction, of the brand asset. For instance, Kodak failed to leverage technological advancements and changing consumer preferences for digital photography, despite having created the disrupting technology and associated industry, more than 45 years prior (McAlone, 2015). On the other side of the coin, turbulence may present the firm with opportunities to leapfrog their brands into new categories, markets or business models in which new conditions present them with now favorable conditions.

In this paper, we consider environmental turbulence, defined as "*the rate and unpredictability of changes in a firm's external environment*" (Boyne & Meier, 2009; Danneels & Sethi, 2011) propose it as a leading source of potential brand asset value loss or, in other cases, gain (Ha, Song, & Erickson, 2021). Whether in the form of changes in competitive intensity, market disruptions, or technological discontinuity (Chung & Low, 2017; Kohli & Jaworski, 1990; Slater & Narver, 1994), we theorize that environmental turbulence can cause the firm to (1) lose access to the customer during the discovery, evaluation, and choice process; (2) diminish the brand's differentiation on dimensions newly relevant to the customer; and/or (3) loosen its engagement with its customer base. External environmental turbulence is not the only source of discontinuity and volatility in brand equity; internal actions taken within the firm can also have a decisive effect. However, it is an important element that, unlike the direct effects the brand, the consumer, and the relationship between the two have on brand equity, has been primarily examined as either a secondary determinant or contingency of the brand's equity.

Additionally, competitive, technological and market sources of environmental turbulence may interact. For example, <u>technological turbulence</u> in distribution systems (e.g., e-commerce and now voice commerce) can change consumer search processes and behavior (i.e., <u>market turbulence</u>) and may lead to incumbents' adoption of new competitive strategies in order to resist change. In turn, these strategies may also be embraced by new entrants or less established players, ultimately resulting in <u>competitive turbulence</u>. Similarly, backward integration strategies by retailers such as Amazon and the emergence of private labels (e.g., *AmazonBasics*) have prompted the adoption of direct to customer (DTC) strategies by manufacturers such as Nike (Danziger, 2018).

Corporate ability to respond to environmental turbulence will depend in part on the strength of its brands and other assets—the latent ability to resist, recover and reinvent—but also on the adaptability of the organization to respond—i.e., agility. In turn, agility is a function of the corporate mindset, the organizational flexibility and resource fluidity (Doz & Kosonen, 2010). Here, product-market characteristics such as brand engagement (i.e., customer experiences, brand loyalty) and differentiation may enable them to resist the onslaught of turbulence-inspired challenges. Subsequently, because some brands may not survive (e.g., the weakening and ultimate demise of Motorola in the cellular industry due to troubled migration from analog to digital technologies), competitor brands that embrace newer infrastructure and technology (e.g., Nokia) can reinvent the market and surge beyond their prior market share and sales levels. Here brand access, and once again brand differentiation, play an important role.

Building on the brand equity literature, we posit that three broad dimensions of brand equity—access, differentiation, and engagement—are critical elements for brands to resist, recover, and reinvent in turbulent environments, allowing them to anticipate and react to environmental disruption, and to mitigate the loss of (and possibly even enhance) value in the brand asset. Furthermore, while brand engagement is as critical in the resistance phase, brand access is more important in the reinvention phase, whereas brand differentiation remains an important element across all phases.

In the sections that follow, we describe our conceptualization of environmental turbulence, including its outcomes and implications for the brand asset. Then we review the branding literature to describe the three proposed brand dimensions—access, differentiation, and engagement—that can be attenuated by turbulence, but can also fuel the firm to harness its brand agility and resilience to realize successful new growth opportunities. The intersection between the three brand dimensions and the three forms of turbulence helps us to understand how firms can avoid brand equity impairments in turbulent markets (i.e., resist and recover), how they can recognize new potential in the changed environment (i.e., reinvent), and most importantly, how management can balance brand equity elements with other tangible assets during disruption

Table 1
Resilience and agility across turbulence response phases.

RESILIENCE AND AGILITY ACROSS TURBULENCE RESPONSE PHASES

Brand Dimensions	Resilience & Agility: Resistance	Resilience & Agility: Recovery	Resilience & Agility: Reinvention
Engagement	**Leveraging Customer and Brand Loyalty to Resist Change** *Engagement "buys time" for the brand to improve and creates switching costs* *Gillette: Resistance vs. new business models (online, subscription)* *Marlboro: Able to resist anti-smoking legislation (brand value increased)*	**Activating Faster, Stronger and Greater Recovery Opportunities** *Through the emotional and rational customer-brand bonds (engagement, resonance, and esteem) the trust that comes from engagement enable differentiation to be re-established and access to be maintained.*	**Building Bonds for Reinvention** *Engagement yields insights to understand customers' new product-usage and new market-entry and provides trust with which to establish brand equity in new products, new markets, or by using new business models.*
Differentiation	**Ensuring Resistance Capability** *Strong, favorable, and unique brand associations create trust, buy-in, and loyalty balancing new entrants' points of difference* *Microsoft Office: Differentiated product; Loyalty; Customer Lock-in* *Nike: Strong differentiated brands able to resist retailer pressure*	**Creating Points of Difference to Enhance Reach** *Differentiated brands can be leveraged vs. competitors, channels, and supply chain to recover lost ground* *Best Buy: Focus of Service; Location (vs. Amazon, Walmart)* *Zara: Differentiation; Supply chain; Covid online move (vs. H&M, Gap)*	**Empowering Reinvention with Points of Proof** *Customers trust differentiated brands in new channels, markets, and business models. Relevant brand associations will transfer to new endeavors* *Nike: Differentiation and DTC; Leverage technology and brands* *BMW: Long-term service and buy-back contracts; New and used cars*
Access	**Insulating Brand from Disruptive Forces** *Psychological, physical, and digital availability provide competitive advantage, ensuring continuing reach for the brand defendant and limiting it for disruptors.*	**Increasing Breadth of the Accessible Market** *Brand access enhances strong customer relationships and "ownership," allowing the firm to recover a maximum share of the previously held market*	**Creating Paths to Reinvention** *Mental, physical, and digital access identify new needs, opportunities, cross-selling, and relationships* *Red Bull: Mental access, from Formula 1 to cocktails* *Jim Beam: Bourbon cocktail blends*

(see Table 1). Finally, we develop propositions as to how firms can build brand agility and resilience, to resist and recover from turbulence, and reinvent themselves to exploit potential in turbulence, and identify promising new avenues for future research.

2. Environmental turbulence

Environmental turbulence refers to the degree to which a firm's external environment is characterized by unpredictability, uncertainty, and volatility. More formally, it is defined as the rate and unpredictability of changes in a firm's external environment (Boyne & Meier, 2009; Danneels & Sethi, 2011). Turbulent environments are characterized by dynamic market conditions wherein disruptions in demand and growth rates are common, whereas less turbulent environments are more stable, with predictable demand and growth rates (Ko & Tan, 2012). The environmental turbulence concept originated from early work in the management strategy literature on industry dynamism (Lawrence & Lorsch, 1967; Miller & Friesen, 1983) and has evolved into a multidimensional construct that has received strong attention in the marketing strategy, branding, and related literatures (e.g., Nezami, Worm, & Palmatier, 2018; Swait & Erdem, 2007; Wilden & Gudergan, 2015).

Although more elaborate conceptualizations of environmental turbulence exist, there is general agreement that it may be defined along three major dimensions: competitive turbulence, technological turbulence, and market turbulence (Jaworski & Kohli, 1993; Lichtenthaler, 2009; Sethi & Iqbal, 2008). Competitive turbulence represents the degree to which competitors disrupt an industry (Tsai & Yang, 2013). In other words, it captures changes in the degree to which firms are competing for the same customers in the same space and time, including promotion competition, price competition, and new entrants/challengers (Chan, He, Chan, & Wang, 2012; Paladino, 2007). Technological turbulence refers to the pace and the level of unpredictability of change in both product and process technology within an industry (Jaworski & Kohli, 1993; Slater & Narver, 1994). Consequently, turbulent technological environments are characterized by unpredictable advances in technology and unpredictable timing of technological shifts (Augusto & Coelho, 2009; Tsai & Yang, 2013). Lastly, market turbulence concerns the extent and volatility of change in customer preferences and behaviors in an industry, as well as other radical changes in the marketplace such as regulatory or socioeconomic shifts (Jaworski & Kohli, 1993; Olson, Slater, Tomas, & Hult, 2005). In turbulent market environments, customer needs and wants are highly varied, and customer preferences are highly heterogeneous and volatile (Hanvanich, Sivakumar, Tomas, & Hult, 2006), resulting in frequent search for new products and highly variable product demand (Hult, Hurley, & Knight, 2004). Even indirect changes in the environment climate may have profound effects on the marketplace and a brand's ability to succeed within it. The global Covid crisis starting in early 2020 provides an excellent example of such a profound marketplace disruption.

Environmental turbulence provides an appropriate lens with which to examine the changing value and role of brand assets for several reasons. First, environmental turbulence references conditions that are external to the firm, which unlike firm-induced turbulence, is more challenging to predict and manage. Second, environmental turbulence is dynamic—i.e., it can vary dramatically across industries and markets, as well as over time, ranging from highly stable to highly dynamic (Lawrence & Lorsch, 1967). These persistent changes create altered competitive contexts in which a brand must fight to maintain and grow its brand equity. In terms of dynamics, the effect of environmental turbulence is adaptive; the success of the firm in coping with it depends on a path of sequential actions which we broadly classify as resistance, recovery and reinvention.

Third, environmental turbulence is a macro-construct that comprises all three turbulence forms and its interactions and ultimately determine the degree and rate of overall turbulence. The three forms of turbulence are separate, meaning that one or more of them could be relative stable whereas the others are volatile. However, these forms of turbulence are often interconnected in the sense that changes in one can and do cause changes in another. For example, market turbulence in the form of changing consumer tastes typically leads to competitive turbulence as firms strive to adjust their offerings to the transformed marketspace. Likewise, competitive turbulence can spark technological turbulence as competing firms leverage innovation to maintain and gain competitive advantage and conversely.

Finally, environmental turbulence can yield both positive and negative outcomes for the firm, depending on where it is placed and whether and how it responds. On the one hand, environmental turbulence can significantly disturb the status quo, shifting customers towards other providers or even to leave the category, pushing firms to abandon their comfort zones and compete with new capabilities and offerings. On the other hand, environmental turbulence offers opportunities for developing new offerings, embracing new technology, connecting with new customers and markets, propelling growth, developing new business models, and creating new competitive advantages by leveraging pre-existing brand assets (Bao, Chen, & Chou, 2012; Bonnin & Alfonso, 2019; Rudd, Greenley, Beatson, & Lings, 2007).

To successfully respond to environmental turbulence, firms must develop a keen discernment of the risks and opportunities in a market and build organizational momentum and innovative capabilities to mitigate risks and seize the opportunities provided (Gonzalez-Benito, Gonzalez-Benito, & Munoz-Gallego, 2009). Overall, environmental turbulence can be viewed both as a risk that can significantly impair firm and brand performance and survival (Meredith and Francis 2000) and as an opportunity to increase brand equity and broaden the scope of the firm (Moorman and Miner 1998; Flammer, 2015), with the latter view often embraced by resilient and agile firms. In adopting an environmental turbulence lens, we aim to extend strategic brand management to new contexts and gain important insights.

3. Understanding the brand asset

The AMA (2020) has defined a brand "*as a name, term, design, symbol, or any other feature that identifies one seller's good or service as distinct from those of other sellers*." While these are all elements of a brand, holistically a brand is a promise to deliver some value to its target market whether it be through functional performance or psychological benefits. The brand is a signal that the firm wishes to communicate (the brand identity) which is received in some form by the target market (the brand image) (Kapferer, 2008). Brands are at the core of marketing theory and practice, bringing marketers, collaborators, and consumers together in a market environment; providing crucial functional and symbolic information, and facilitating marketing exchanges and value-creating relationships between all parties (Oh, Keller, Neslin, Reibstein, & Lehmann, 2020; Swaminathan, Sorescu, Steenkamp, O'Guinn, & Schmitt, 2020). Brands create value for consumers by reducing search costs and perceived social and psychological risks associated with the consumption experience (Gupta & Ramachandran, 2021; Keller & Swaminathan, 2020). Likewise, brands create value for firms by encouraging repeat-purchasing behavior (Chaudhuri & Holbrook, 2001; van der Lans, van Everdingen, & Melnyk, 2016), enhancing quality perceptions (Aaker & Jacobson, 1994), reducing price sensitivity (Ailawadi, Lehmann, & Neslin, 2003), and facilitating brand extensions and introductions (Homburg, Workman, & Jensen, 2000).

To understand the effect of environmental turbulence on brands, we must first have a method of representing how brand equity creates value for customers and the firm. We summarize the association between the brand asset, value creation, and value capture below to motivate our discussion. However, the centrality of brands and brand management to marketing practice has been met with significant academic interest, yielding a substantial body of work during the past century on the relationship between the brand's activities and consumers' attitudinal and behavioral responses (please see Keller, 2020a,2020b, Keranen, Piiranen, & Salminen, 2012, Oh et al., 2020, and Swaminathan et al., 2020 for excellent reviews).

Keller (1993) foundational article on customer-based brand equity (CBBE) provides a strong conceptual foundation on which to explore customer value-creation and firm value-capture. Keller suggests that CBBE is based on what the firm "owns" in the customer's mind; brand knowledge which consists of awareness (recognition and recall) and associations (which ideally should be strong, favorable, and unique). Other scholars have built on and around this framework. For example, Aaker (1996) recognizes the importance of perceived brand quality and brand loyalty to brand equity, whereas Sprott, Czellar, and Spangenberg (2009) validate brand engagement as another significant dimension of brand equity. Both Chaudhuri and Holbrook (2001) and Delgado-Ballester (2004) establish the importance of brand trust on positive consumer behaviors and attitudes and brand equity. Finally, Mizik and Jacobson (2008) demonstrate the importance of brand knowledge, differentiation, relevance, and esteem as antecedents of brand equity.

Although the extant CBBE literature has proposed, developed, and demonstrated the value of multiple brand equity sub-dimensions, without loss of generalizability (Keller & Lehmann, 2006; Oh et al., 2020), these can be consolidated using the following brand descriptors: *awareness*, *familiarity*, *availability*, *salience*, *associations*, *knowledge*, *imagery*, *quality*, *personality*, *resonance*, *esteem*, and *trust*[1]. For this study, we consider these brand elements to develop a parsimonious representation of brand equity based on three dimensions—brand access, brand differentiation, and brand engagement— that encapsulate the sub-dimensions of brand equity while providing a useful framework with which to examine the effects of turbulence on the customer-brand experience. Overall, we build on prior literature to suggest that strong brands are available and *accessible* to consumers; create positive consumer judgments and feelings through meaningful and relevant *differentiation*; and create strong emotional and functional connections with consumers via enduring *engagement*. Next, we describe and articulate how these three brand dimensions provide a route for the creation of unique brand-customer experiences and for the brand to persist and flourish in the face of environmental turbulence.

3.1. Brand access

Before consumers can evaluate the brand and engage with it, they must be exposed to it during the discovery, evaluation, choice and post purchase processes. Therefore, they must be able to find it available, both physically and psychologically (Reinartz, Weigand, & Imschloss, 2019). It is perhaps easiest to think of brand access via the hierarchy of effects model (e.g., Lavidge & Steiner, 1961; Roberts & Lilien, 1993) or its more modern incarnation, the demand funnel (Edelman & Singer, 2015).

Psychological availability, or brand salience, refers to the probability of a consumer noticing, recognizing, and thinking of the brand, when considering a purchase in the category (Alba & Chattopadhyay, 1986). Brand salience is a distinct construct from awareness, which is merely a link to the brand name or to the product category. Salience affects the probability of retrieval from memory, yielding aided awareness (recognition) and unaided awareness (recall) (Hutchinson, Raman, & Mantrala, 1994). A brand can achieve greater psychological availability than its competitors by developing multiple memory connections in consumers' minds through distinctive and clear brand communications (Romaniuk & Sharp, 2004), thereby enhancing the brand's retrieval from a large proportion of consumers' memories. If more consumers think of a brand when considering of a specific category or need, then the brand has greater psychological availability. Another dimension of psychological availability is brand familiarity, described as the amount of time consumers spend processing brand information, regardless of the type or content of the processing that was involved. Although a basic form of consumer knowledge, familiarity drives brand accessibility and purchase decisions (Alba & Wesley Hutchinson, 1987).

A different type of brand access that is becoming increasingly constricted is logistical availability. Once brand psychological availability is established, the consumer must also be able to access the product, whether physically, digitally, or in some other form or combination of forms. Doing so requires the firm making the brand available and providing the ability for it to deliver the brand experience to the customer. A brand's availability refers to the breadth and depth of the distribution in time and space (including digital space and platforms). While for brick and mortar stores more shelf facings and positions closer to eye level enhance physical availability, in virtual and digital settings a product that appears at the top of a Google search will have superior availability.

We argue that access to brands is becoming increasingly difficult for firms to achieve. In packaged goods, more and more retailers are stocking only one or two national brands other than their own—for instance, national brands make up less than 10% of Aldi's range (Aylward 2019). In addition to these challenges in traditional forms of distribution, availability is becoming even more prevalent as a constraint in online markets. One interesting recent example of such challenges is how Amazon, and other primarily online retailers, have introduced physical stores with limited assortments and featuring their own brands (e.g., *AmazonBasics*) as the only or highest visibility choice. A virtual analog of the physical ability of bricks and mortar retailers to tilt the playing field in favor of their store brands is playing out with Amazon and other search engines in the digital environment.

Overall, psychological, tangible and digital availability comprise the macro-construct that we term *brand access*. We argue that this is a crucial brand dimension in the presence of environmental turbulence because it is susceptible to rapid change, one that can play out to either the benefit or the detriment of brands. For example, the availability of inexpensive search capabilities may make access easier for smaller brands, particularly those targeted at focused and difficult to reach niches, leading to the creation of a long tail in the marketspace where previously distribution was not cost effective (Anderson, 2006). Conversely, increasing concentration and market power of intermediaries (e.g., traditional retailers such as Walmart and Aldi, and online ones such as Amazon) may deny national brands access to customers or may allow the intermediary to migrate the customer away from them. Lastly, environmental shocks, such as the Covid-19 pandemic, can also dramatically

[1] Other often used brand equity labels include brand performance, brand value, brand preference, brand satisfaction and brand loyalty. For parsimony, we do not explicitly include these in our conceptualization of brand equity because of their communality with the other sub-dimensions we do include.

impact brand access by fundamentally modifying decision making processes (e.g., the almost instantaneous adoption of online grocery shopping further enhanced brand access for store brands at the expense of manufacturer brands).

The need for brand access continues beyond the discovery to delivery stages described above. Once a firm establishes access to a customer, it must maintain that access. That is, brand access remains critical at the post purchase stage, evidenced by a vigorous discussion in the marketing literature as to who "owns" the customer.

3.2. Brand differentiation

For an accessible brand to be other than a commodity, consumers must see an advantage to using it over other accessible alternatives. Brand differentiation is the process by which firms set their brand apart from those of their competitors, by associating superior and distinct aspects of the brand with customer benefits (Keller, 1993). Keller suggests that attributes that consumers associate with the brand should be strongly and uniquely held on dimensions that are valuable to the target market. Overall, brand differentiation is a function of the mental associations consumers hold for the brand. Keller (1993, 2003a) identifies three fundamental types of associations that generate brand equity—strong, favorable, and unique associations. These brand associations represent the knowledge structures that consumers have for the brand and are often conceptualized as the building blocks of consumers' judgements and feelings towards the brand (Angle & Forehand, 2016). Specifically, brand knowledge refers to the consumers' meanings and beliefs about all aspects of the brand (i.e., product, packaging, store, price, etc.) that are stored in memory (Keller, 2003b) and is a critical dimension of brand differentiation.

Brand image and quality are other important dimensions of brand differentiation. Whereas brand image is regularly described as the perceptions of a brand in the consumers' minds, consumers' thoughts, feelings, and expectations—i.e., what consumers judge, feel, or believe with respect to the brand (Angle & Forehand, 2016), brand quality captures consumers' perceptions of the quality delivered by the brand experience relative to an expectation standard (Aaker, 1996; Bharadwaj, Tuli, & Bonfrer, 2011). Brand equity is enhanced with the level and the alignment of brand image and brand quality.

Brand differentiation is especially valuable for brands in turbulent environments because it affords firms what they need most to weather turbulence—time. Turbulence causes rapid change, and incumbent brands that survive and prosper in turbulent markets require time to recognize and adjust to changing market conditions, absorb and adapt to technological advancements, and respond to competitors. Differentiated brands that enjoy strong, favorable, and unique brand associations are protected from sudden short term market changes (McAlister, Srinivasan, & Kim, 2007), and are less volatile and vulnerable to environmental turbulence (Ha et al., 2021). Their differentiated brand equity provides these brands with a buffer, at the least temporary, to shield them against the impending storm; a point of difference with which to offset any point of difference that external turbulence may have provided a competitor.

For instance, Zara's and Nike's differentiated brands, paired with their agile direct-to-consumer business models, allowed both brands to weather the Covid-19 pandemic and enhance their advantage vis-à-vis competitors (i.e., Gap and Adidas) and channels (i.e., physical stores and retailers). Similarly, Amazon leverages consumer insights to more effectively manage customer relationships and drive consumers through the demand funnel, enhancing its ability to anticipate, adapt and benefit from market and competitive changes.

3.3. Brand engagement

Consumers form strong psychological, tangible, and behavioral relationships with accessible and differentiated brands (Aaker, Fournier, & Adam Brasel, 2004; Fournier, 1998; Hudson, Huang, Roth, & Madden, 2016; Pansari & Kumar, 2017). Brand engagement refers to the mental process by which consumers form these emotional and rational bonds with a brand and is accomplished over time through continued customer-brand interactions. This psychological and behavioral engagement process is often characterized via brand *resonance*, *esteem*, and *trust*.

Brand resonance refers to the nature of the relationship that customers have with the brand and the extent to which they feel that they are "*in synch with the brand*" (Keller, 2001). Brand resonance describes the depth of the emotional bonds that customers develop with the brand, and the level of customer-brand loyalty that these bonds create (Keller, 2001). Brand esteem is another sub-dimension of brand engagement, representing what the brand is known for in the minds of consumers. This includes how much (or how little) the brand is respected, and what it is respected (or disrespected) for, and the level of desire consumers carry for the brand (Mizik & Jacobson, 2008). Brand esteem refers to a higher-order mental connection that consumers develop with the brand and is a function of the brand's associations and ability to deliver on its promises (Mizik & Jacobson, 2008). Finally, brand trust is the belief consumers hold that the brand will fulfill certain higher-level functions, such as authenticity, fairness, reliability, and transparency, which are indicative of trust. Brand trust also refers to consumers' willingness to depend on brand performance, even when the consumption experience is uncertain and may entail risk (Anwar, Gulzar, Sohail, & Akram, 2011; Moorman, Zaltman, & Deshpande, 1992). Brand trust represents the strongest and most intimate emotional consumer-brand connection (Belaid & Behi, 2011) and denotes deep emotional and behavioral ties between the brand and its consumers.

Overall, brand engagement is critical for establishing brand strength and in creating unique and sustainable brand equity. Brand engagement is valuable because it creates market imperfections, allowing the firm to avoid contestability, by short-cutting the decision-making process, resulting in customers who seek less brand-related information, consider only the focal brand, and persistently repurchase it (Oliver, 1997)—i.e., the brand "owns" its customers. Not surprisingly, while it may be threatened, brand engagement is extremely valuable in turbulent markets, because it allows the brand to at least temporarily withstand the rapid and uncertain changes in the marketspace, since its customers are more shielded and less exposed to these changes and perceive compensating benefits to staying with their current brand (Gupta, Pansari, & Kumar, 2018). For instance, Intel's strong customer engagement provided breathing space, allowing it to survive a potentially fatal incident when its original Pentium chips were found to be inaccurate (Williams, 1997). Similarly, Nike's customer engagement allowed it to quickly adjust and benefit from its strategic choice to bypass retailers and adopt a direct-to-consumer business model.

Having established the dimensions of brand equity that can offer protection and can be leveraged, but are nonetheless vulnerable in turbulent environments, we discuss the intersection between the brand asset and environmental turbulence, and use it to motivate organizational agility and resilience—*when* and *how* brands can, when complemented by other tangible and market-based assets, overcome challenges presented by market, technological, and competitive change.

4. The phases and dynamics of brand agility and resilience

The existing literature on brands and branding has evolved profoundly over the past 50 years, from the earlier conceptualization of brands as signals that reduce customer uncertainty and risk (Erdem and Swait, 1998; Wernerfelt, 1988) to a more elaborate conceptualization of brands as bundles of tangible and intangible attributes as critical elements of the firm/brand's value proposition (Erdem, Swait, & Valenzuela, 2006), and finally to the current conceptualization linking the customer mindset and CBBE to product-market outcomes and financial performance, viewing brands as valuable market-based assets (Ailawadi et al., 2003; Chaudhuri & Holbrook, 2001; Srivastava et al., 1998). Nonetheless, and despite the maturity of the field, less attention has been devoted to directly examining the effect of the external environment on this valuable company-customer nexus; that is, under which conditions brand value is likely persist or grow (versus erode)? We posit that radical structural changes induced by environmental turbulence (Christensen & Bower, 1996; Moorman & Miner, 1998) can dramatically impact a brand's value creation and value capture potential. Such structural changes can fundamentally reshape the marketplace, the competition, and even the customers and thus the fortunes of the firm.

Since the focus of this paper is on the link between environmental turbulence and those brand characteristics that enable it to be more agile and resilient to vulnerability, volatility, and uncertainty in the marketplace, rather than static brand perspectives (e.g., brand share, margin, and revenue premiums), we examine the elements that enable brands to manage market dynamics caused by environmental turbulence, both from defensive and offensive perspectives. Hence, we emphasize brand characteristics such as switching costs, loyalty and trust that allow firms to be less vulnerable and to resist environmental forces, thereby enhancing their resilience (Bindra, 2020). We also consider brand characteristics such as adaptability and agility of response that enable some brands to recognize and adjust to change more quickly and recover faster. Finally, we explore how brands may be positioned to pivot in the face of adversity to seize emerging scale and scope opportunities. While environmental turbulence may threaten existing competitive structures, it also provides opportunities to pivot towards new strategies, thus supporting the adage, often attributed to Winston Churchill "*never let a good crisis go to waste*".

Table 2 summarizes the extant literature on brand management and environmental turbulence and provides several significant insights. First, although the association between individual brand dimensions and environmental turbulence has been investigated, to the best of our knowledge, the interaction between all brand dimensions and all forms of turbulence, has not been studied thus far. This paper integrates the brand and environmental turbulence literatures, to develop a framework that can be applied to investigate how and when brand elements can be leveraged to resist, recover and reinvent from environmental disruption. Furthermore, the proposed framework is generalizable and applicable to any market-based asset. Second, Table 2 also reveals that most of the brand-turbulence research predominantly addresses short-term and temporary turbulence, whereas our study focusses primarily on permanent and potentially more disruptive turbulence, and on understanding how and when firms can successfully weather, and even benefit, from these radical environmental changes.

We discuss the ways in which a firm may address the effect of turbulence on its brands in three phases. First, a priori, building ***resistance*** to insulate brands from environmental turbulence; second, rebuilding and re-establishing brands' position in the new marketplace (***recovery****);* finally, leveraging off the opportunities that the new environment provides to extend its brand franchises (***reinvention***). This approach of dynamically examining how distinct dimensions of brand equity (access, differentiation, and engagement) can be leveraged to respond to environmental turbulence shares a number of similarities with the brand strength and stature framework proposed by Young & Rubicam's Brand Asset Valuator, summarized in existing work (Keller & Swaminathan, 2020). However, our approach provides a more detailed examination of the interactions between brand equity dimensions and with the forms of environmental turbulence, together with the dynamic stages of doing so.

4.1. Agile-resilient brand phases

If management is to overcome challenges presented by market, technological, and competitive turbulence by leveraging brand equity, we must understand which dimensions of the brand enable it to withstand and recover from such challenges. We begin by describing the agile-resilient brand and connect all three brand equity dimensions and forms of environmental turbulence to develop a template for examining brand (and firm) agility and resilience. Here, we note that the impact of tur-

Table 2
Representative brand & environmental turbulence literature.

REPRESENTATIVE BRAND & ENVIRONMENTAL TURBULENCE LITERATURE

Reference	Synopsis	Source of Turbulence	Brand Access	Brand Differentiation	Brand Engagement	Brand Resilience	Brand Agility
Knittel & Stango (2014)	Celebrity scandals negatively impact endorsing firms and endorsement intensive competitors. Losses correlate with Google search intensity.	Market		X	X	X	
Flammer (2015)	Domestic companies respond to tariff reductions by increasing CSR, allowing them to differentiate from foreign rivals.	Market		X		X	
Borah & Tellis (2016) *Related papers: Roehm & Tybout (2006)*	Negative spillover from recalls occurs across brands within segments, is stronger from a dominant to a less dominant brand, and apology ads and online chatter amplify the effects.	Competitive	X	X	X	X	
Chung & Low (2017) *Related papers: Steenkamp & Fang (2011)*	Managers are less likely to myopically manage marketing and R&D spending when market and technological turbulence is high respectively. Performance suffers with myopic management, in turbulent environments.	Market / Technological	X			X	
Nezami, Worm & Palmatier (2018)	Industry turbulence negatively moderates the effect of B2B services on earnings volatility.	Market			X	X	
Ha, Song & Erickson (2020) *Related papers: McAlister, Srinivasan & Kim (2007)*	Customer-based brand equity dimensions (Differentiation, Relevance, Esteem, Knowledge, and Energy) influence a firm's systematic risk during both market upturns and downturns.	Market	X	X	X	X	
Swaminathan et al. (2020)	Develops a conceptual framework for branding and brand management in a digital, hyperconnected world.	Market	X		X	X	
Glazer and Weiss (1993)	Performance depends on congruence between the level of marketplace turbulence and information processing style.	Market	X	X			X
Christensen & Bower (1996)	Established firms lead the industry in developing technologies that address existing customers' needs but fail to develop technologies that initially are only useful in emerging markets, resulting in entrant firms surpassing established companies.	Technological			X		X
Ferrier, Smith & Grimm (1999)	Market leaders are more likely to experience market share erosion when—relative to challengers—they are less competitively aggressive, carry out simpler repertoires of actions, and carry out competitive actions more slowly.	Competitive		X			X
Aaker & Jacobson (2001)	Brand attitude helps predict earnings and firm value in hi-tech markets, which are technologically and competitively turbulent.	Technological/ Competitive		X		X	X
Hewett et al. (2016)	Social media has changed how consumers and firms communicate and created an 'echoverse' of feedback loops between communication methods. Companies benefit from using social media for personalized customer responses, and online communications are becoming increasingly important.	Market	X		X	X	X
He, Rui & Whinston (2018)	During a product-harm crisis, competitors can suffer from a negative spillover effect but can also benefit from customers switching. Competitors adjust their post-crisis social media to induce purchases and to improve customer relationships.	Competitive	X	X		X	X
This Study	We focus on the role of brand engagement, differentiation, and access in navigating turbulent markets as they shift from defense and recovery (resilience) to growth and reinvention (agility) in dynamic markets beset by changes due to technological, market and competitive sources of turbulence.	Competitive/ Technological/ Market	X	X	X	X	X

bulence is dynamic, unfolding through multiple phases. Hence how brands resist, recover and reinvent in the face of such challenges must be viewed as an adaptive and path-dependent process. Nonetheless, agile and resilient brands are more likely to resist, recover and reinvent themselves in the face of turbulence.

Agility refers to the brand's capacity to recognize, create and capitalize on opportunities in turbulent and changing environments, including the speed at which the firm receives, interprets, and acts on new information (Kalaignanam, Tuli, Kushwaha, Lee, & Gal, 2021). In contrast, resilience refers to the brands' capacity to bounce back, specifically on anticipating, preparing, and effectively avoiding threats, and possibly converting turbulence-induced challenges as opportunities for growth (Conz & Magnani, 2020). While agility refers to proactive transformation, renewal, and responsiveness, aimed at exploiting new opportunities and value creation, resilience is often reactive, focused on absorption, adaptation, flexibility, and value preservation (Miceli, Hagen, Riccardi, Sotti, & Settembre-Blundo, 2021).

Consequently, agility-resilience refers to the firm's capability to reactively and proactively, as well as defensively and offensively, manage the brand's response to turbulence, through the anticipation of environmental change, the harnessing of the firm's brands and other assets to resist it, the flexibility to adapt to those changes, and the ability to improve competitiveness when faced with new environmental contexts. We discuss below the application of those qualities at each of the phases of turbulence—resistance, recovery, and reinvention.

Resistance: refers to the prevention of potential negative outcomes by anticipating and preparing for turbulence due to technology, competition, and marketplace changes (Day and Schoemaker 2016; Srivastava, 2016). The success of resistance will depend on the brand's ability to weather or withstand changes in the marketplace and maintain functional and business continuity. This ability may be in part due to advantageous positions enjoyed by strong brands such as brand differentiation, power in the distribution channel (access), and brand engagement. It may also be due to preventive measures taken to guard against volatility and vulnerability such as loyalty programs or favorable long-term contracts (Srivastava et al., 1998). Overall, brand resistance allows firms to absorb shocks, provides at least temporary immunity from market or technological threats, and reduces the impact of exogenous environmental shocks (Srivastava, Shervani, & Fahey, 1999). Resilience is relatively more important than agility during the *resistance* phase. For instance, the strong brand differentiation of Microsoft Office, product bundling and software integration, created high customer loyalty and high perceived switching costs, and allowed it to resist environmental turbulence and remain the leading contender in the category for more than 25 years (Marino, 2020).

Recovery: refers to the brand's power to persist, adapt, or transform in the face of change or disorder over time. Recovery requires flexibility of mindsets and fluidity of resources (Doz & Kosonen, 2010) and the capacity to respond and adapt to

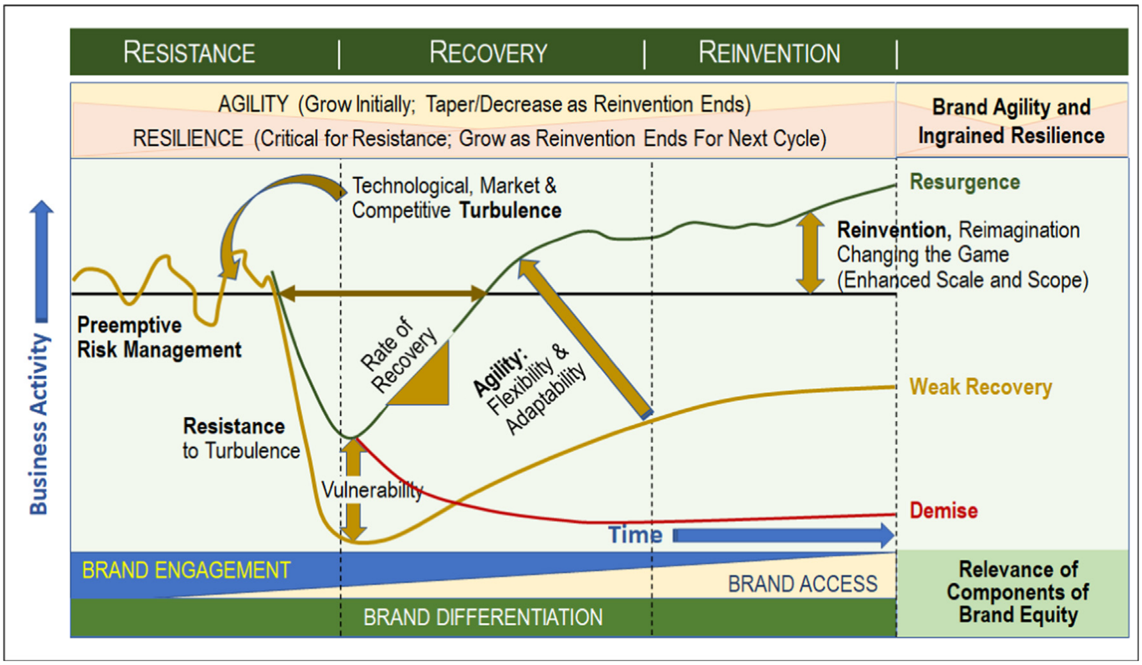

Fig. 1. The phases and dynamics of brand agility and resilience.

disruptive environmental turbulence. Additionally, recovery is related to the concepts of redundancy, robustness, flexibility, and responsiveness to external forces. Importantly, recovery may depend on a brand's differentiation as perceived by consumers and collaborators (i.e., distributors, retailers, etc.). In Keller's terms, that differentiation may be buttressed by improving points of difference over competitors or by mitigating weaknesses, by establishing points of parity with them (Keller, 2020b). For example, brands that are competitive to retailers' private labels are less likely to earn back market share lost on the shelves in post-turbulence unless they can demonstrate compensating salient brand assets. Similarly, share lost under adverse economic conditions by marginal brands that cut back on marketing investments to cash-rich competitors that maintained or increased marketing investments, is also less likely to be regained (Srinivasan, Rangaswamy, & Lilien, 2005). Collectively, recovery pertains to the brand's ability for post-turbulence revival, and the degree to which that is achieved. It is characterized by shortened recuperation periods and enhanced speed of revitalization (Conz & Magnani, 2020). In contrast with the previous phase, agility, vis-à-vis resilience, is more critical for a brand to *recover* from turbulence. For instance, Best Buy's local presence differentiation and in-store physical distribution channel allowed it to adapt its business model quickly and effectively recover fully from the disruption caused by the pandemic (Walton, 2020).

Reinvention: refers to the brand's ability to rebound, recover and advance *beyond* pre-environmental turbulence levels of performance. Reinvention requires the brand's ability to rejuvenate, or to reimagine a way forward past environmental turbulence, leading the brand into new categories, new markets, or new value chains (Aaker, 2005). Often, reinvention is also characterized by increased profitability and enhanced market presence, even past the original pre-turbulence equilibrium (Hamel & Valikangas, 2003). For example, Salesforce increased its stock price by 13% and subscriptions revenue by nearly 30% by developing new solutions for re-integrating sales staff after the pandemic (Vanian, 2020). While the relative importance of agility decreases, the significance of resilience increases throughout the *reinvention* phase, with agility and ingrained resilience required for the firm's brands to *resist* and *recover* the next wave of disruption. The key point here is to recognize that, at least in places, the brand's equity has been enhanced in the new post-turbulence external environment. For example, Amazon's "last mile" brand association relative to bricks and mortar retailers became considerably more valuable as it expanded into new categories and forms of deliver in response to the pandemic. Similarly, Uber's ubiquitous fleet of drivers became a potential liability relative to self-drive, but Uber Eats home delivery became a more valued asset relative to personal pick-up from a public place, allowing it to adapt and reinvent its business model to the pandemic induced disruption.

4.2. Agile-resilient brand dynamics

While there are many dimensions for evaluating brands, we focus on those that enable the brand to resist, recover and reinvent itself in the face of environmental turbulence—brand access, brand differentiation, and brand engagement (see Fig. 1).

Brand access is important to a brands' ability to withstand environmental turbulence and to protect its market position in early phases of disruption. Brands with strong psychological access will be less vulnerable to turbulence (i.e., will experience lower rates and levels of share losses; see Fig. 1) in part because consumers are buying products based on awareness, recall and habit rather than through active search, thereby insulating the brand. Strong psychological access can be balanced by a loss of physical access, at least in the short term, developing what has traditionally been called "pull" through the channel. However, although psychological access may "buy time" for strong incumbent brands, it may be less effective in dealing with market transitions related to technological disruption. For example, Motorola was unable to protect its position against Nokia when the cellular market moved from analog to digital (Forbes 2008). In turn, Nokia lost out to Blackberry, and then the latter to Samsung and Apple when faced with technological platform turbulence (Hessman 2013). Other brands that failed to keep up with technology innovation include eBay (losing to Amazon) and MySpace (overtaken by Facebook). Similarly, brand access can be critical in the recovery phase as new channel structures are less available to mid-tier brands. Strong brands, such as Nike, can integrate forward and develop their own omni-channel presence and direct-to-customer access (Shankar & Kushwaha, 2021), while weaker brands run the risk of progressively losing their contact with the target market, unless they can identify a niche or target market from whom their differentiation is compelling (Porter 1980). Additionally, brands can leverage value, customer experience and trust and combine it with technology, supply-chain, and media capabilities to stretch across vertical markets. Facebook, Amazon, Apple, Netflix and Google (the FAANG brands) have been particularly successful at this strategy, which can be especially effective in the face of technological turbulence, and places them well for the reinvention phase.

Brand differentiation can be especially important in technology sectors where the imagery of functional and experiential benefits is critical (Bonnin & Alfonso, 2019). Brands that were not able to adapt to technological changes (e.g., Kodak, Xerox, Compaq, Motorola, and Nokia—all Top 50 brands in 2000, according to Interbrand's ranking) have largely failed to survive. Brand differentiation is critical from two viewpoints. First, to resist and recover from turbulence and, second, to reinvent beyond pre-turbulence levels by creating new demand and capturing market share from those brands that failed to navigate the competitive landscape. As noted earlier, differentiated brands possess strong, favorable, and unique brand associations and these provide the brand with protection from short term market changes (McAlister et al., 2007), allowing brands to resist and recover faster from environmental turbulence. Additionally, strong differentiated brands provide lower risk platforms for brand extensions, allowing the firms to follow consumers through both existing and new needs, channels, markets, and business models (Aaker, 2005), which can be exceedingly valuable for the firm as it reinvents its offerings in face of environmental turbulence (Sullivan, 1992). However, differentiation can also deteriorate over time and must be refreshed when changed conditions reduce its relevance.

Finally, *brand engagement* is especially important in periods of market adjustment in the aftermath of turbulence, because higher levels of brand engagement separate market leaders from marginal players that are less likely to survive such crises.[2] Customer who are engaged with the brand are especially important for services where more of the preference or disposition is determined by experience, which in turn results in higher loyalty and greater willingness to pay to avoid uncertain outcomes (Leckie, Nyadzayo, & Johnson, 2016; Torres, Agusto, & Wallace, 2018). Also, strong positive brand engagement results in improved customer experiences, thereby increasing customer switching costs and enhancing loyalty and retention (contractual or otherwise). These multiple behavioral and psychological bonds between the brand and the consumer enhance the brand's ability to resist changes brought about through environmental turbulence. They also place the brand in a strong position to enter the reinvention phase.

The main effects of each of these brand characteristics on resilience, recovery and reinvention is expected to be positive. However, the interactions between brand dimensions and their importance to both the type and phase of environmental turbulence, from resistance to recovery to reinvention, remains unknown. As noted earlier, different sources of environmental turbulence are also likely to interact, creating a multitude of potentially distinct disruptive scenarios for the firm, and therefore, how brands resist, recover and reinvent in the face turbulence must be viewed as an adaptive and path-dependent process.

5. Agile-resilient brand case studies

To gain a better understanding of how agile and resilient brands resist, recover and reinvent themselves when faced with environmental turbulence, we begin by examining several case studies of how each of the three brand equity components—access, differentiation, and engagement—enabled brands to successfully weather competitive, technological and market turbulence. The observations from these case studies (Nike, Zara, Amazon, Microsoft and YONO) and those referenced earlier (e.g., winners such as Amazon, Apple, and Samsung and those that fell from grace such as Kodak, Xerox, Nokia, Blackberry, and eBay) are summarized in Table 3. These case studies facilitate the interpretation of Fig. 1 and provide motivation for the propositions and directions for future research developed in the next section.

[2] Our analysis largely addresses customers as a whole. A strong brand that cannot find a path by which it can leverage its brand equity post-turbulence may be able to redefine its product range or its target market, including shrinking its focus to a more niche position. For example, Blancpain Watches, in the wake of competition from Japanese quartz watches, reduced production and moved to a more upmarket target audience. The Encyclopaedia Britannica sacked its sales force and moved to an online model after price competition from Microsoft's CD-ROM Encarta. The existence of a long tail in many markets may make such specialization an attractive survival strategy for such brands.

Table 3
The role of brand access, differentiation and engagement, on resistance, recovery and reinvention.

THE ROLE OF BRAND ACCESS, DIFFERENTIATION AND ENGAGEMENT ON RESISTANCE, RECOVERY AND REINVENTION

	RESISTANCE	RECOVERY	REINVENTION
BRAND ENGAGEMENT		↑ Brand/customer engagement enables to implement product and market modifications	↑ Ability to successfully adopt omni-channel x Product portfolio (YONO, Microsoft, Google, Amazon)
		↑ Differentiation through product bundles (Microsoft)	↑ Effectiveness of voice commerce across vertical markets (Amazon Alexa)
	Customer switching costs (inter-operability and embeddedness) help incumbent brands (Microsoft)	↑ Products and services across multiple vertical markets to share the cost of technology Cost/Price/Convenience (Alipay)	↑ Increasing use of data resource availability across vertical markets (Amazon Prime)
	Customer retention programs (loyalty & rewards) help resist competitive challenges (YONO)	↑ Analytics driven targeting and marketing (Amazon)	↑ Use existing customer base to launch new products at reduced cost and lower functionality
	Retention (bundle of) banking services (YONO)	↑ Customer ownership ↑ Brand engagement (Nike vs Retailer)	↑ Leverage customer engagement to drive new product adoption (Microsoft Azure & Teams)
BRAND DIFFERENTAITION	↑ Product differentiation, especially intangible attributes, helps compete with private label/store and price-based brands	↑ Recovery is faster and greater for agile and differentiated brands which can switch quickly to new delivery formats--e.g., from traditional retail to omni-channel and DTC	↑ The demise of marginal brands plus opportunities to take advantage of marketplace vacated allow agile, adaptive brands to expand sales/shares
	↑ Strong, well-differentiated brands "buy" time for incumbents to delivery similar features to challengers	↑ Rate of innovation; Unique design (Zara, Nike)	↑ Design-to-Delivery cycle (short); Product variety (Zara)
	↑ Brand relevance, loyalty, ambassadors (Nike)	↑ Differentiation ("Fast Fashion"); Testing and developing new products; Runway→Design→Store/DTC (Zara)	↑ Use of data resources & analytics on targeted retention programs
	Technological embeddedness; Differentiation and ease of use at the Eco-System Level (Microsoft)	↑ Differentiation through product bundles (Microsoft)	↑ Speed; Convenience (Reverse) Logistics
	↑ Customer convenience (Costco/Amazon Return Policies)	↑ Customer insights--from awareness to repurchase (Amazon)	↑ Cross-product customer relationship; Brand/customer vs. Product Platforms (Amazon)
BRAND ACCESS	↑ Ability to compete with private label/store brands, via awareness and preference (Nike)	↑ Brand differentiation and engagement help established brands recover faster and reach target markets	↑ Increasing importance of omni-channel presence (Retailers now competing with national brands)
	↑ Brand salience (recall, consideration sets) are especially important in conditions such as ordering products and services online	↑ Design-to-Delivery cycle (short); Product variety (Zara)	↑ Brand access (DTC, omni-channel retailing) and brand engagement enables recovery beyond original market position
		↑ Direct shipments from manufacturer to customers (Amazon)	↑ Analytics driven targeting and marketing (Amazon)
		↑ Customer insights--from awareness to repurchase (Amazon)	↑ Cross-product customer platforms (Amazon, Microsoft, Google, YONO)
		↑ Fully integrated mass-customization; 48-hour delivery; Low inventory (Zara)	↑ Use existing customer base to launch new products at reduced cost

Note: The symbol ↑ denotes improved/increased.

A classic example of a strong brand using the time and advantages that its equity provided is that of *Nike*, which has leveraged the turbulence unleashed by the pandemic to enhance brand access by accelerating the development of its own omni-channel brand access using firm-owned stores and direct-to-customer channels (Stein, 2021). It has restricted or cast off retailers such as Dillard's, Foot Locker and Zappos. It has been able to do so because it has enhanced customer connectivity through "experiential retailing" and differentiated innovation (unique design, continuous improvements) and engagement (resonance, esteem and trust, and the subsequent commitment and loyalty). Nike's consumer ownership has increased its negotiating power with retailers and enabled it to develop a very strong direct-to-customer presence. The resulting "disintermediation" (closure of undifferentiated retail space and wholesale bankruptcies) has increased share of direct sales and improved margins. While Nike was a well-differentiated brand with close consumer connections, the pandemic provided an opportunity for the company to leverage these strengths in developing its omni-channel capabilities, which have further strengthened the brand with both the consumer and its remaining retail partners. To summarize, the pandemic has enabled Nike to innovate and resurge by capturing share from defunct retailers and other more vulnerable athletic gear and apparel brands and increase its market power with others.

Another example of a brand that has survived and is currently reinventing itself is *Zara*. Zara has undergone a reformation due to the pandemic and has gained marketplace presence and recovered faster than its main rival, H&M, in large part because of its dynamic capabilities, providing greater variety of offerings through short design, product and merchandising lifecycles, and shorter direct-to-store and direct-to-consumer delivery cycles. Zara reported that although it temporarily closed about half of its 7,500 stores, it continued to operate in 156 online markets (Kohan, 2020). In 2020, Zara's online sales grew almost 60% over 2019, helping its owner Inditex recover on the stock market. The resilience of Zara during the pandemic is due to its prior investment in its brand and omni-channel capabilities. The company's investment in technology to develop an integrated and automated demand-to-supply chain that enhances product variety while reducing inventory and risk has allowed Zara to move seamlessly to DTC processes, while its competitors that outsource with 2- or 3-month delivery cycles have been less capable in adapting to the responsiveness needed in the online world (Lee, 2021). In contrast, the previous strategic decisions of a major competitor (The Gap) to scale its supply chain by outsourcing design and production proved catastrophic during the pandemic, impacting physical availability of its offering, hurting brand access and differentiation from its reduced agility. In turn, weakened access and differentiation negatively impacted psychological availability, damaging brand engagement.

Amazon has leveraged the Covid-19 pandemic to its advantage due to an increase in online sales, and it has accelerated its move to private labels. While these still represent a smaller fraction of its sales compared to other retailers such as Target and Walmart, its ability to capture market share for its own labels is greater due to know-your-customer insights and its direct presence across multiple product-markets from retailing to entertainment to computer/cloud services, to healthcare, to e-pharmacy and financial services. Its customer connectivity is continuously improving and with it, its information advantage. While users still use Google for information search, Amazon's share of product searches is steadily increasing. Additionally, while Google has access to awareness, search and preference information to guide its B2B advertising clients (90-plus percent of Google revenues are from advertising), Amazon's access to sales and repurchase information puts it in a much stronger position, raising questions such as "will Google be Amazoned?" (Sharma & Srivastava, 2019). The shift to voice-commerce via Alexa's presence (and thus control access visibility) further enhances Amazon's ability to improve speed and convenience of services to consumers while expanding both scale and scope of operations (Herrera 2019) and to manipulate their decision architecture. Once again, in the face of technological turbulence, brand engagement and access cannot be separated from the disruption caused by technological innovation. Indeed, brand value and survival depend on the integration and alignment of marketing and technological processes to build agile and resilient brands, capable of resisting, recovering, and reinventing post-turbulence growth.

Microsoft is one of the few brands that has persisted as a Top 10 Interbrand Best Global Brand over the past two decades. Its resilience stems from its constant focus on customer connectivity across products, continuously focusing on product improvements and interoperability, as well as strong lock into its existing Office suite of products. This has resulted in strong brand access and engagement, and increased customer switching costs. For example, brand loyalty to Microsoft Office is almost 100 percent, providing the company with an almost indestructible source for cash flows and access. The greater the number of Microsoft products and the higher the number of legacy applications used by a consumer, the greater the "lock-in" and consequently the higher the brand's resilience. Microsoft is differentiated from other software vendors in that it focuses on both B2B and B2C customer relationships. The resultant switching costs enable it to resist competitive and technological pressures and the engaged customer experiences allow the company to "buy time" on three fronts. First, users are willing to wait for Microsoft improvements—i.e., brand trust enables Microsoft to "buy time" while enhancing the rate of product diffusion. Second, the company can leverage its customers' trust to make inroads for new products and technologies (e.g., Azure vs. AWS and Teams vs. Zoom) by developing a mindset focused on growth, resilience, and a tolerance for risk (Reijonen, Hirvonen, Nagy, Laukkanen, & Gabrielsson, 2015). Even in those areas where its products are not dominant (e.g., Bing vs Google), the value of the total Microsoft option still locks most users into its Office platform. Thirdly, Microsoft's scale means that it can vastly outspend competitors on R&D (a fixed cost) while still maintaining its margins (with search products being an unusual exception).

State Bank of India's YONO (You Need Only One) account has enabled the company to build a single point of contact across multiple financial products and online services. This integrated service has propelled dramatic growth during the last three years to roughly 35 million accounts, at a pace larger than forty thousand new accounts daily. The integration across services has led to very high switching costs for its customers and therefore higher consumer retention and brand loyalty, as well as a steady increase in account balances. The bank has been able to leverage its B2C business to develop a healthy B2B marketplace across product-markets such as mutual funds, home and auto loans, insurance, and agribusiness. In short, YONO has enabled the company to reinvent its business and consumer engagement strategies converting a government majority owned enterprise into one of the leading fin-tech brands in India (Ramanathan, 2020).

The rich branding literature provides great insight in the management of brands in static markets. Swaminathan et al. (2020) examine the effect of many of the trends in existing product-markets on brands and provide an excellent basis from which to understand the threats to, and potential for, brands in turbulent environments. In this study, we provide an integrated and comprehensive exploration on the nature of brand equity and the different forms of environmental turbulence, and the interaction between the two to examine how firms should adaptively respond to persistent and pervasive marketplace disruptions. We argue that our framework is useful to address the dynamic and path-dependent strategic choices on the key dimensions of access, differentiation, and engagement, which allow brands to resist, recover and reinvent themselves to overcome environmental turbulence. In the next section, we leverage the proposed framework, summarized in Fig. 1, and substantiated through the case studies above and Tables 2 and 3, to develop a set of propositions and directions for future research regarding *how* and *when* brand managers should focus their efforts and resources when confronted with such challenges.

6. Propositions and directions for future research

The proposed conceptual framework depicted in Fig. 1 allows us to gain a clearer and deeper understanding of how environmental turbulence can render current brand asset value redundant or diminished, but also how it may create unique opportunities to leverage brand equity into new products, markets, and business models. In this section, we advance several propositions as to *where* and *how* brand managers should focus their efforts and resources in response to environmental turbulence. We leverage a number of conceptual lenses to inform the development of these propositions, including a market-orientation lens (Day, 1994), by focusing on the intelligence requirements (i.e., market sensing skills) and the harnessing of the firm's resources, particularly its brand assets (i.e., customer relating skills) to address environmental turbulence threats and opportunities. We also adopt defensive and offensive marketing strategy perspectives (Hauser and Shugan 1983, 2008; Fornell and Wernerfelt 1987; Roberts 2005) to motivate when to leverage the firm and brand's strengths versus focusing on mitigating the rival's strengths. Additionally, we adopt both customer and market development perspectives (Ansoff, 1957; Ansoff and Sullivan, 1993) to inform the allocation of the firm's efforts and resources.

The propositions development is guided by these multiple lenses and perspectives, which we align with the three phases of agile-resilient brands—*resistance*, *recovery*, and *reinvention*—to reflect current brand management challenges and provide more granular and better-informed insights. Additionally, while much of the brand equity literature has focused on brand value creation and the level of brand value, the propositions developed here focus on the dynamic role of brand engagement, differentiation and access in navigating turbulent markets, as firms shift from defense and recovery (resilience) towards growth and reinvention (agility), to prevail past competitive, technological and market disruptions. Finally, the propositions presented below are examples of the types of relevant questions that the conceptual framework summarized in Fig. 1 might stimulate. However, there is a number of other propositions and relevant questions regarding the identification and implementation of strategies that leverage brand engagement, differentiation and access to persist environmental turbulence that can be usefully identified from this framework.

6.1. General propositions

Market-orientation is often defined as "*the organization-wide generation of market intelligence, dissemination of the intelligence across departments and organization-wide responsiveness to it*," (Kohli & Jaworski, 1990), suggesting that the two fundamental firm skills are to gather (and disseminate) intelligence, and to implement strategies that are based on that intelligence (see also Day, 1994). Therefore, the ability to gather intelligence that allows the firm to understand and anticipate disruptive environmental changes (i.e., foresee turbulence), and the ability to leverage intelligence to preemptively deploy brand and firm assets (i.e., foresee the "right" brand dimensions), are critical elements for brands to navigate the resistance, recovery, and reinvention phases and overcome environmental turbulence.

Specifically, brand equity provides a window of opportunity in which to defend one's position. Superior intelligence accelerates the firm's ability to respond swiftly while its position is stronger. Additionally, because threats are likely to arise along new directions (i.e., pervasive disruption), pre-emptive intelligence must span a broader range of competitive, technological, and marketplace knowledge than was previously required—i.e., peripheral vision (Day & Schoemaker, 2006). Finally, intelligence must be integrated and implemented into firm strategy. Information must lead to insight and insight must lead to action. Therefore, we advance the following general proposition:

***P_1**: The more potentially turbulent the external environment, the broader the range of intelligence about the brand equity that will be required; to identify feasible points of difference and points of parity with respect to engagement, differentiation, and access.*

This information advantage must be transformed to an insight advantage and then an action advantage, but the whole process must be built on a comprehensive foundation of good intelligence. Relatedly, it is important to recognize that the brand's ability to resist, recover and reinvent itself depends on the firm's ability to gather and disseminate intelligence, to formulate and implement strategies related to how the firm and brand's assets are deployed. Consequently, intelligence gathering is critical for the brand to resist and recover from environmental turbulence, while ideation (i.e., deployment of intelligence) is more relevant for the brand's reinvention and growth following market disruptions. Additionally, intelligence is central for identifying and executing valid customer and market development strategies that leverage the firm's brand assets and its other tangible assets to thrive past environmental turbulence. Therefore, we suggest the following proposition:

> ***P_2**: In identifying the breakout strategies that lead to reinvention beyond the firm's core product markets, systematic ideation based on the company's strengths, different customers' needs, and gaps in the marketplace is necessary. Successful breakout will come from the confluence of these forces.*

These two propositions about intelligence bracket the propositions about effective actions that need to occur at each stage of the turbulence reaction strategy.

6.2. Resistance phase propositions

As noted earlier, we suggest that brand engagement is more valuable than brand access during the resistance phase, because it creates strong loyalty and switching costs, and prevents contestability, allowing the brand to (at least temporarily) withstand the rapid and uncertain changes in the marketspace, since its customers are largely shielded and unexposed to these changes. We also propose that brand differentiation is valuable during all phases because it affords firms what they need most to weather turbulence—time to recognize and adjust to changing market conditions, absorb and adapt to technological advancements, and respond to competitors. Additionally, since engagement and differentiation are defensive strategies that leverage the firm and brand's strengths, they are more likely to be successfully implemented for strong brands, require lower resource investments by the firm, and are often less risky.

However, for brands to resist turbulence, differentiation must be broadened to maintain the brand's relevance in the changed environment and to reinforce engagement with new activities and strengthen brand associations along new dimensions (e.g., Encyclopedia Britannica migrating from the world's most comprehensive encyclopedias to the deepest, broadest, and most trustworthy source of information). Overall, differentiated and engaged brands provide a more favorable context for firms to gather intelligence and deploy strategies to resist turbulence, including migrating the brand to more defensible positions. Therefore, we suggest the following proposition which recognizes the state dependent nature of strong defense of brand equity:

> ***P_3**: Differentiation and engagement are strengths that provide a window of opportunity for migration. That is, it is not sufficient to have a viable vision as to how the firm can survive in the new environment; it must also have a pathway over time by which that vision will be realized.*

Similarly, brands engagement strategies, such as loyalty programs and customer experience, can be leveraged into high levels of customer loyalty and customer retention, which protect the brand in the short-term, allowing it to better resist environmental disruptions. However, to foster immunity and resistance to market volatility, firms must continue investing and implementing brand engagement strategies. For instance, Kimberly Clark Huggies brand successfully resisted P&G's launch of the Pampers brand in the Australian market by loading up the trade and gathering customer performance data—i.e., continued to invest on brand engagement, forcing P&G to withdraw Pampers from the market within six months (Freeman 1994). Consequently, we advance the following proposition:

> ***P_4**: Companies can take pre-emptive steps for reducing risk (increasing resilience) by adopting multiple measures to enhance brand loyalty and customer retention (loyalty rewards, service levels, customer experience and engagement strategies) that might temporarily protect the firm/brand thereby increasing resistance and reducing vulnerability to unanticipated turbulence.*

6.3. Recovery phase propositions

Earlier, we defended brand differentiation as being more valuable during the recovery phase, with brand access and engagement playing less vital roles in this phase. Differentiation provides the brand with time to recognize and adjust to changing market conditions, absorb and adapt to technological advancements, and respond to competitors. Additionally, strong, favorable, and unique brand associations accelerate recovery by allowing the firm to migrate customers more easily towards new business models, new channels, and even new markets.

However, the ability to recover requires the firm to develop a vision of the customer base it can protect in the long term and the basis on which it can use the brand to protect it. Additionally, it also requires the ability for the firm to recognize when it can grow its customer base within the boundaries of the market served, versus when it should focus in developing new markets to promote growth. Furthermore, as noted earlier, defensive strategies that leverage the firm's and brand's strengths are also easier and less risky to implement, versus offensive strategies that aim to mitigate rival's strengths. Consequently, we suggest the following proposition:

***P$_5$**: In determining the equilibrium recovery position it wishes to achieve post turbulence, the firm must make decisions as to the customers it will keep (target market with which to engage), the brand positioning with which it will keep them (brand identity to allow differentiation), and the business model by which that will be achieved (brand access through omnichannel reach).*

Additionally, agility (or rate of recovery) is not only a function of the brand's strengths (i.e., engagement, differentiation, and access) but also depends on agile processes (e.g., tech-enabled supply chains), managerial mindsets (e.g., willingness of managers to take actions quickly based on market insights and signals) and resources (firms strapped for working capital may not be able to afford quick actions) to shape them for the future. For example, Zara's integrated supply chain supported by self-owned flexible manufacturing was more agile than H&M which had to rely on external manufacturing/supply-chain. Furthermore, Zara's "fast fashion" approach (across design, demand-chain and merchandising) allowed it to swiftly shift to an omnichannel online retailing strategy (e.g., order online, pick-up at the store) to successfully resist, recover and reinvent past the pandemic challenges and disruptions. Consequently, we advance the following proposition:

***P$_6$**: The brand elements (i.e., engagement, differentiation, and access) must be adapted in synchronicity with the other assets of the firm, tangible and intangible, including its business processes. Both are necessary and allowing one to get ahead of the other will prevent the firm resisting, recovering and reinventing in the face of environmental turbulence.*

6.4. Reinvention phase propositions

Lastly, we argue that brand access is the key brand dimension for firms to thrive during the reinvention phase. Because reinvention by necessity involved moving into new areas (new markets and or product categories), a prerequisite to exploiting the brand and other assets that the firm has in realizing its newfound potential is a route to realize it. Furthermore, current and future intelligence is also crucial for the development and implementation of leapfrogging strategies that allow the firm to leverage brand strengths to serve present customers and prospects, in existing and new markets, using known and novel business models and technology. For instance, for Amazon to transform itself from an etailer to a marketplace, it required the firm to recognize that it had to serve two distinct customer segments, and that its brand equity and image must migrate with its merchants to convey both "reach," while continuing to communicate "ease combined with choice" to its customers. Consequently, we advance the following proposition:

***P$_7$**: When a firm realizes that the new post-turbulence environment affords it the opportunity to enter new categories or new target markets because of new or more salient advantages in terms of engagement, differentiation, or access, it must understand how its brand equity and associations in its traditional product markets can be migrated to those critical to success in its new product-markets.*

Additionally, when faced with fundamental disruption and transformation of the marketplace, the firm's ability to leverage intelligence to recognize and execute brand strategies that allow reinvention is critical during this phase. Specifically, strategies that leverage brand engagement may allow firms to "follow" customers in current and new markets. Furthermore, differentiated brands can be more easily migrated into new markets and business models, particularly if brand access is elevated. Finally, such migration strategies are easier to implement for firms/brands that use platform business models.

For example, Microsoft was able to market Teams as a competitor to Zoom, and Azure as a substitute for AWS in cloud computing to existing customers with help from technology integration partners (e.g., Accenture) as part of unique "solution bundles" (integrating Teams and OneDrive with Outlook and the Office Suite), delivering a unique selling proposition unmatchable by competitors without a full complement of software products. Therefore, we recommend the following proposition:

***P$_8$**: Brands/firms on product and customer platforms with modular product/service components are able to generate new solutions (via integration of modular components) faster in response to turbulence and cross-sell these new solutions to existing customers in related/adjacent markets. Brand engagement matched by differentiation and access facilitates reinvention and capturing share post the recovery cycle beyond the original market position.*

6.5. Discussion and directions for future research

We have developed a conceptual framework to provide a lens through which firms and brands can anticipate and respond to the disruptive effects of environmental turbulence. Although the existing literature can inform us on a number of areas relevant to turbulence (e.g., brand extensions), in other areas our knowledge is more limited. Based on the preceding discussion, we identify several areas in which future academic research could successfully inform dynamic strategic brand management decisions in turbulent environments. We use the following criteria to guide the selection of these directions for future research: (1) Are they important/relevant? (2) Are the potential insights new? (3) Do the insights follow logically from the developed conceptual framework?

First, in this paper we have examined how three brand dimensions—access, differentiation, and engagement—can be adaptively leveraged to withstand and exploit environmental turbulence. We argue that brand access has become increasingly important to maintaining and extending brand equity and the study of brand equity across competitors with very different business models is not yet well understood (e.g., Google and Amazon, Nike and Footlocker). Since brand access, differentiation and engagement are interdependent, a rich area for future research would be to investigate interactions between brand access, differentiation, and engagement in helping the brand resist, recover and reinvent in turbulent markets, and to effectively allocate resources to maintain and improve the value of the brand asset.

Research Question 1: Which combinations of the three dimensions are most valuable, for each form of turbulence, and for each phase of resilience?

Research Question 2: Do minimum thresholds for brand access, differentiation, and engagement exist? Are these contingent on the breadth of the target market and the form of turbulence and the resilience phase?

Second, are there specific combinations of environmental turbulence that create "perfect storms" from which the brand asset cannot resist or recover? Furthermore, what might be the shape and form of resistance and recovery under such "perfect storms?" Conversely, are there specific environmental turbulence combinations from which it is easier to resist and recover? The acceleration of technological turbulence caused by the marketplace turbulence prompted by the Covid pandemic, suggests that resilience has been tested, while agility has been rewarded.

Research Question 3: Which brand characteristics (weaknesses) make these "perfect storms" particularly damaging for the brand asset?

Research Question 4: When faced with "perfect storms," are there any niches that lend themselves to partial survival, perhaps on a reduced scale, but maybe of even greater value?

Research Question 5: Are there specific criteria or thresholds that can be leveraged to distinguish between "perfect storms" and "negotiable" disruptions?

Historically, brand equity has been conceptualized, modeled, and measured as horizontal brand strength, and primarily from the customer's perspective. The rapid competitive, technological, and market changes that characterize current marketplaces have sparked fundamentally distinct business models and market platforms than previously. This new economic reality suggests that an increasing portion of the brand asset value resides in its ability to integrate vertically and to be accessible, differentiable, and engaging with other constituents besides customers. Furthermore, consumers' preferences continuously evolve at a faster pace, resulting in new brand characteristics and dimensions gaining relevance and salience (e.g., income inequality, social justice, and other socio-economic aspects). Consequently, developing measures that capture new dimensions of brand asset value is a fruitful area of future research.

Research Question 6: Can the three macro-dimensions of brand equity—access, differentiation, and engagement—be used to measure new dimensions of brand equity, such as vertical brand strength or the value of the brand for stakeholders other than customers?

Another area for future research enquire relates to the degree of customer heterogeneity in the marketplace. Everything else being equal, the larger the degree of preference heterogeneity in the marketplace, the higher the potential number of unique customer segments. On one hand, diverse customer preferences provide greater opportunities for brands to uniquely serve those segments via customized access, differentiation, and engagement and niching. On the other hand, preference fragmentation may also require investments in multiple brands and fragmentation, each uniquely positioned to the specific access, differentiation, and engagement requirements of every targeted segment. Every single one of these multiple scenarios requires distinct firm resources and brand management capabilities for successful access, differentiation, and engagement with the target customer segments. Therefore, if environmental turbulence is to impact customer heterogeneity, the following will be fruitful line of enquire for future research.

Research Question 7: How should the brand and other firm assets and resources be deployed post-turbulence, including brand architecture and portfolio design, to optimize the brand's resistance, recovery, and reinvention in the changed market?

Furthermore, since the most powerful brands are also often global brands, operating in multiple distinct marketspaces, each confronting distinct environmental turbulence, another fruitful area for future research is to examine global brand's response to turbulence.

Research Question 8: How should multinational firms organize and leverage their brand assets dimensions—access, differentiation, and engagement—across multinational marketspaces to respond to diverse and often unsynchronized sources of turbulence?

Research Question 9: Relatedly, are there economies of scale or of scope, which global corporations can uniquely leverage to advance the resilience and agility of their brands?

Research Question 10: Similarly, which brand dimensions are more transferable and valuable across markets, and are these contingent on the source of turbulence?

Additionally, given the remarkable gains of retail store brand equity in the past 3–5 years, both in brick-and-mortar (e.g., Target and Kroger) and online markets (e.g., Amazon), and the expectation that this trend will continue, other areas for future research include.

Research Question 11: How should firms leverage the elements of our conceptual framework to develop and improve resilience and agility for their brands?

Research Question 12: Conversely, how should manufacturers leverage their assets and resources to resist, recover and reinvent their own brands, in face of retail brands turbulence?

Lastly, another potential area for future research comprises the formulation of the intersection between the competitive, technological, and market turbulence and brand access, differentiation, and engagement as game theoretical strategic choices can provide theoretical insights to guide the development of the directions for future research described above.

Research Question 13: Which analytical and empirical models best identify and represent optimal brand resilience strategic choices, or combinations of brand resistance, recovery, and reinvention,

Research Question 14: How do different forms of brand alliances (such as cobranding arrangements and brand ecosystems) survive and gain or lose brand equity at each stage in the face of different types of turbulence?

7. Conclusion

This paper contributes to the theory and practice of marketing and brand management in several ways. First, investigate brands and brand management in dynamic markets, specifically the threats introduced to brands by environmental turbulence and evaluate how managers should use brands, to adaptively respond to each form of market turbulence—competitive, technological, and market, as a dynamic, staged and path-dependent process. While we are able to build on a strong base of the roles of brands in turbulent markets, we do consider a higher level of granularity in terms of dynamic brand equity management in changing environments.

Second, we develop an integrated view of the sub-dimensions of brand equity, organized into three macro-dimensions—access, differentiation, and engagement—that we hope will help to move the branding literature forward with a renewed focus. These dimensions are helpful in extending our understanding of the interplay between brand equity and environmental turbulence and provide guidance for future research that extends beyond the boundaries of our inquiry. Again, while there is a valuable body of work in this area, we believe that a renewed emphasis on the importance of brand access, which we believe has become a more critical element of maintain, growing and leveraging brand equity, will prove to be an insightful suggestion for both research and management action.

Third, although a rich body of knowledge exists regarding how brands create customer value, and in turn allow firms to capture value, less is known about the dynamic nature of brand equity and how it may be disrupted by turbulence in the external environment where the brand competes. We contribute to the discipline by developing a conceptual framework at the intersection of the three brand dimensions and three forms of turbulence and focusing on the path specific routes available in reacting to turbulence (ex-ante and contemporaneous), which we leverage to motivate resilience and agility as critical brand traits for the brand to resist, recover and reinvent itself, allowing it to withstand threats and create opportunities for future growth.

Fourthly, while the dynamics of brand management has received some attention, most of this has been in the form of comparative statics. We consider brand management, especially in the presence of turbulence, to be an adaptive process. To think about how the challenges might vary over time, we consider brand management in turbulent times immediately surrounding turbulence (resistance), as a new equilibrium is established (recover), and in new areas uncovered by the changing environment (reinvention).

Finally, we use the brand-turbulence conceptual framework and the brand resilience and agility constructs to develop a series of propositions as to how firms should anticipate, respond to, and build off environmental turbulence and recommend several promising avenues for future research in the topic of branding and brand management. Importantly, it is not just the main effects of access, differentiation and engagement that is interesting; it is the interaction between them that is critical. Furthermore, the dynamics of which stage (resistance, recovery, and reinvention) each of the three provide effective offensive and defensive weapons is also crucial.

In conclusion, we argue that ***where*** and ***how*** firms and brands should handle environmental turbulence requires a change in mindset. Managers must shift from a *defensive versus offensive* strategy perspective, towards a ***defensive and offensive*** perspective. Similarly, managers should recognize the need to ***jointly and in sync*** leverage the brand and the firm's other tangible and intangible assets. Relatedly, firms must also identify and implement strategies that focus on the ***joint development of customer and markets***. Furthermore, managers must also consider strategies that mutually ***leverage the brand's strengths while also mitigating rivals' strengths***. Firms must balance how they are going to differentiate for their target markets and thus win engagement through the prerequisite of being able to reach them (brand access). Lastly, we also contend that, in the face of the continued environmental and technological turbulence, the macro-construct of brand access has become increasingly more relevant and important.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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References

Aaker, D. A. (1996). Measuring brand equity across products and markets. *California Management Review, 38*(3), 102–120.
Aaker, David. A. (2005), *Strategic Market Management*. 7th Ed., Hoboken, NJ: John Wiley & Sons.
Aaker, D. A., & Jacobson, R. (1994). The Financial Information Content of Perceived Quality. *Journal of Marketing Research, 31*(2), 191–201.
Aaker, D. A., & Jacobson, R. (2001). The value relevance of brand attitude in high-technology markets. *Journal of Marketing Research, 38*(4), 485–493.
Aaker, J., Fournier, S., & Adam Brasel, S. (2004). When good brands do bad. *Journal of Consumer Research, 31*(1), 1–16.
Ailawadi, K. L., Lehmann, D. R., & Neslin, S. A. (2003). Revenue premium as an outcome measure of brand equity. *Journal of Marketing, 67*(4), 1–17.
Alba, J., & Chattopadhyay, A. (1986). Salience effects in brand recall. *Journal of Marketing Research, 23*(4), 363–369.
Alba, J., & Wesley Hutchinson, J. (1987). Dimensions of consumer expertise. *Journal of Consumer Research, 13*(4), 411–454.
Anderson, C. (2006). *The long tail: Why the future of business is selling less of more*. New York, NY: Hyperion.
Angle, J. W., & Forehand, M. R. (2016). It's Not Us, It's You: How Threatening Self-Brand Association Leads to Brand Pursuit. *International Journal of Research in Marketing, 33*(1), 183–197.
Ansoff, I. (1957). Strategies for Diversification. *Harvard Business Review, 35*(5), 113–124.
Ansoff, I., & Sullivan, P. A. (1993). Optimizing profitability in turbulent environments: A formula for strategic success. *Long Range Planning, 26*(5), 11–23.
Anwar, A., Gulzar, A,, Sohail, F. B., & Akram, S. N. (2011). Impact of brand image, trust and affect on consumer brand extension attitude: The mediating role of brand loyalty. *International Journal of Economics and Management, 1*(5), 73–79.
Augusto, M., & Coelho, F. (2009). Market orientation and new-to-the-world products: exploring the moderating effects of innovativeness, competitive strength, and environmental forces. *Industrial Marketing Management, 38*(1), 94–108.
Aylward (2019), "ALDI: A Private Brand Powerhouse," *Storebrands*, February 19, 2019, Retrieved at https://storebrands.com/aldi-private-brand-powerhouse.
Bao, Y., Chen, X., & Chou, K. Z. (2012). External Learning, Market Dynamics, and Radical Innovation: Evidence from China's High-Tech Firms. *Journal of Business Research, 65*(8), 1226–1233.
Belaid, S., & Behi, A. T. (2011). The Role of Attachment in Building Consumer-Brand Relationships: An Empirical Investigation in the Utilitarian Consumption Context. *Journal of Product & Brand Management, 20*(1), 37–47.
Bharadwaj, S. G., Tuli, K. R., & Bonfrer, A. (2011). The Impact of Brand Quality on Shareholder Wealth. *Journal of Marketing, 75*(5), 88–104.
Bindra, J. (2020). *The Immune Organisation: Future-proofing Organisations from COVID-like Disruptions* (1st Ed.,). Westland Publishers.
Bonnin, G., & Alfonso, M.R. (2019), "The Narrative Strategies of B2B Technology Brands," *Journal of Business and Industrial Marketing*, 34 (7), 1448-1458. Boyne,
Borah, A., & Tellis, G.J. (2016) "Halo (Spillover) Effects in Social Media: Do Product Recalls of One Brand Hurt or Help Rival Brands?" *Journal of Marketing Research*, 53 (2), 143-160.
Boyne, G. A., & Meier, K. J. (2009). Environmental Turbulence, Organizational Stability, and Public Service Performance. *Administration & Society, 40*(8), 799–824.
Chan, R. Y. K., He, H., Chan, H. K., & Wang, W. Y. C. (2012). Environmental Orientation and Corporate Performance: The Mediation Mechanism of Green Supply Chain Management and Moderating Effect of Competitive Intensity. *Industrial Marketing Management, 41*(4), 621–630.
Chaudhuri, A., & Holbrook, M. B. (2001). The Chain of Effects from Brand Trust and Brand Affect to Brand Performance: The Role of Brand Loyalty. *Journal of Marketing, 65*(2), 81–93.
Christensen, C. M., & Bower, J. L. (1996). Customer Power, Strategic Investment, and the Failure of Leading Firms. *Strategic Management Journal, 17*(3), 197–218.
Chung, T. S., & Low, A. (2017). The Impact of Investor Impatience and Environmental Turbulence on Myopic Marketing Management and Stock Performance. *International Journal of Research in Marketing, 34*(3), 660–677.
Conz, E., & Magnani, G. (2020). A Dynamic Perspective on the Resilience of Firms: A Systematic Literature Review and Framework for Future Research. *European Management Journal, 38*(3), 400–412.
Danneels, E., & Sethi, R. (2011). New Product Exploration Under Environmental Turbulence. *Organization Science, 22*(4), 1026–1039.
Danziger, P. N. (2018), "Nike's New Consumer Experience Distribution Strategy Hits the Ground Running," *Forbes*, December 1, 2018.
Day, G. S. (1994). The Capabilities of Market-Driven Organizations. *Journal of Marketing, 58*(4), 37–52.
Day, G.S., & Schoemaker, P.J.H. (2006), *Peripheral Vision: Detecting the Weak Signals that Will Make or Break Your Company,* Harvard Business School Press.
Day, G.S., & Schoemaker, P.J.H. (2016) Adapting to Fast-Changing Markets and Technologies. *California Management Review*, 58 (4), 59-77.
Delgado-Ballester, E. (2004). Applicability of a Brand Trust Scale Across Product Categories: A Multigroup Invariance Analysis. *European Journal of Marketing, 38*(5/6), 573–592.
Doz, Y. L., & Kosonen, M. (2010). Embedding Strategic Agility: A Leadership Agenda for Accelerating Business Model Renewal. *Long Range Planning, 43*(2–3), 370–382.
Edelman, D., & Singer, M. (2015), "The New Consumer Decision Journey," *McKinsey Quarterly*, October 2015.
Erdem, Tulin, & Swait, Joffre (1998). Brand Equity as a Signaling Phenomenon. *Journal of Consumer Psychology, 7*(2), 131–157.
Erdem, T., Swait, J., & Valenzuela, A. (2006). Brands as Signals: A Cross-Country Validation Study. *Journal of Marketing, 70*(1), 34–49.
Ferrier, W. J., Smith, K. G., & Grimm, C. M. (1999). The Role of Competitive Action in Market Share Erosion and Industry Dethronement: A Study of Industry Leaders and Challengers. *Academy of Management Journal, 42*(4), 372–388.
Flammer, C. (2015). Does Product Market Competition Foster Corporate Social Responsibility: Evidence From Trade Liberalization. *Strategic Management Journal, 36*(10), 1469–1485.
Fornell, C., & Wernerfelt, B. (1987). Defensive Marketing Strategy by Customer Complaint Management: A Theoretical Analysis. *Journal of Marketing Research, 24*(4), 337–346.
Forbes (2008), "Why We Fail to See When We're About to Fail," Forbes, August 22, 2008. Retrieved at https://www.forbes.com/2008/08/22/summer-reading-motorola-ent-manage-cx_kw_0822whartoncellphone.html?sh=4f0dec42329f.
Fournier, S. (1998). Consumers and Their Brands: Developing Relationship Theory in Consumer Research. *Journal of Marketing, 24*(4), 343–373.
Freeman, L. (1994) "P&G puts nappies to rest in Australia" *Ad Age* September 19, 1994 https://adage.com/node/2018076/printable/print Accessed: September 19, 2021
Glazer, R., & Weiss, A. M. (1993). Marketing in Turbulent Environments: Decision Processes and the Time-Sensitivity of Information. *Journal of Marketing Research, 30*(4), 509–521.
Gonzalez-Benito, O., Gonzalez-Benito, J., & Munoz-Gallego, P. M. (2009). Role of Entrepreneurship and Market Orientation in Firms' Success. *European Journal of Marketing, 43*(3/4), 500–522.

Gupta, S., & Ramachandran, D. (2021). Emerging Market Retail: Transitioning from a Product-Centric to a Customer-Centric Approach. *Journal of Retailing*. in press.
Gupta, S., Pansari, A., & Kumar, V. (2018). Global Customer Engagement. *Journal of International Marketing, 26*(1), 4–29.
Ha, K. C., Song, R., & Erickson, G. (2021). Multidimensional Brand Equity and Asymmetric Risk. *International Journal of Research in Marketing, 38*(3), 593–614.
Hamel, G., & Valikangas, L. (2003). The Quest for Resilience. *Harvard Business Review, 81*, 52–63.
Hanvanich, S., Sivakumar, K., Tomas, G., & Hult, M. (2006). The Relationship of Learning and Memory With Organizational Performance: The Moderating Role of Turbulence. *Journal of the Academy of Marketing Science, 34*(4), 600–612.
He, S., Rui, H., & Whinston, A. B. (2018). Social Media Strategies in Product-Harm Crises. *Information Systems Research, 29*(2), 362–380.
Herrera (2019), "Amazon Extends Alexa's Reach into Wearables," September 25, 2019, Retrieved at https://www.wsj.com/articles/amazon-extends-alexas-reach-into-wearables-11569440641.
Hessman 2013, Retrieved at https://www.industryweek.com/technology-and-iiot/digital-tools/article/21961166/the-road-to-failure-nokia-blackberry-and-apple.
Hewett, K., Rand, W., Rust, R. T., & van Heerde, H. J. (2016). Brand Buzz in the Echoverse. *Journal of Marketing, 80*(3), 1–24.
Homburg, C., Workman, J. P., & Jensen, O. (2000). Fundamental Changes in Marketing Organization: The Movement Toward a Customer-Focused Organizational Structure. *Journal of the Academy of Marketing Science, 28*(4), 459–478.
Hudson, S., Huang, L., Roth, M. S., & Madden, T. (2016). The Influence of Social Media Interactions on Consumer-Brand Relationships: A Three-Country Study of Brand Perceptions and Marketing Behaviors. *International Journal of Research in Marketing, 33*(1), 27–41.
Hult, G.T.M., Hurley, R.F., Knight, G.A. (2004). Innovativeness: Its Antecedents and Impact on Business Performance. *Industrial Marketing Management,* 33, 429-438.
Hutchinson, J. W., Raman, K., & Mantrala, M. K. (1994). Finding Choice Alternatives in Memory: Probability Models of Brand Name Recall. *Journal of Marketing Research, 31*(4), 441–461.
"Interbrand's Best Global Brands Archive." *Interbrand*, 20 April 2021, Interbrand.com/best-global-brands/
Hauser, John R., & Shugan, Steven M. (1983). Defensive Marketing Strategies. *Marketing Science, 2*(4), 319–360.
Hauser, John R., & Shugan, Steven M. (2008). Commentary—Defensive Marketing Strategies. *Marketing Science, 27*(1), 85–87.
Jaworski, B. J., & Kohli, A. K. (1993). Market Orientation: Antecedents and Consequences. *Journal of Marketing, 57*(3), 53–70.
Kalaignanam, K., Tuli, K. R., Kushwaha, T., Lee, L., & Gal, D. (2021). Marketing Agility: The Concept, Antecedents, and a Research Agenda. *Journal of Marketing, 85*(1), 35–58.
Kapferer, J.-N. (2008). *The New Strategic Brand Management: Creating and Sustaining Brand Equity Long Term*. Kogan Page Limited.
Keller, K. L. (1993). Conceptualizing, Measuring, and Managing Customer-Based Brand Equity. *Journal of Marketing, 57*(1), 1–22.
Keller, K. L. (2001). *Building Customer-Based Brand Equity: A Blueprint for Creating Strong Brands*. Marketing Science Institute.
Keller, K. L. (2003a). *Strategic Brand Management: Building, Measuring, and Managing Brand Equity* (2nd ed). Englewood Cliffs, NJ: Prentice Hall.
Keller, K. L. (2003b). Brand Synthesis: The Multidimensionality of Brand Knowledge. *Journal of Consumer Research, 29*, 595–600.
Keller, K. L. (2020a). Consumer Research Insights on Brands and Branding: A JCR Curation. *Journal of Consumer Research, 46*(5), 995–1001.
Keller, K. L. (2020b). Leveraging Secondary Association to Build Brand Equity: Theoretical Perspectives and Practical Applications. *International Journal of Advertising, 39*(4), 448–465.
Keller, K. L., & Lehmann, D. R. (2006). Brands and Branding: Research Findings and Future Priorities. *Marketing Science, 25*(6), 740–759.
Keller, K. L., & Swaminathan, V. (2020). *Strategic Brand Management: Building, Measuring, and Managing Brand Equity* (5th ed). Englewood Cliffs, NJ: Prentice Hall.
Keranen, J., Piiranen, K. A., & Salminen, R. T. (2012). Systematic Review on B2B Branding: Research Issues and Avenues for Future Research. *Journal of Product & Brand Management, 21*(6), 404–417.
Knittel, C. R., & Stango, V. (2014). Celebrity Endorsements, Firm Value, and Reputation Risk: Evidence from the Tiger Woods Scandal. *Management Science, 60*(1), 21–37.
Ko, S., & Tan, B.-S. (2012). Knowledge Transfer, Perceived Environmental Turbulence and Innovation in China. *Journal of Chinese Entrepreneurship, 4*(2), 104–116.
Kohan, S. (2020), "Fast Fashion Leaders H&M And Zara; Weathering The Pandemic," Forbes, March 30, 2020, Retrieved at https://www.forbes.com/sites/shelleykohan/2020/03/30/fast-fashion-leaders-hm-and-zara-weathering-the-pandemic/?sh=5738f21417a2.
Kohli, A. K., & Jaworski, B. J. (1990). Market Orientation: The Construct, Research Propositions, and Managerial Implications. *Journal of Marketing, 54*(2), 1–18.
Lavidge, R. J., & Steiner, G. A. (1961). A Model for Predictive Measurements of Advertising Effectiveness. *Journal of Marketing, 25*(6), 59–62.
Lawrence, P. R., & Lorsch, J. W. (1967). Differentiation and Integration in Complex Organizations. *Administrative Science Quarterly, 12*(1), 1–47.
Leckie, C., Nyadzayo, M., & Johnson, . ester (2016). Antecedents of Consumer Brand Engagement and Loyalty. *Journal of Marketing Management, 32*(5), 558–578.
Lee, H. (2021), "How extreme agility put Zara ahead in fast fashion," Financial Times, Retrieved at https://www.ft.com/content/3f581046-cd7c-11e9-b018-ca4456540ea6.
Lichtenthaler, U. (2009). Absorptive Capacity, Environmental Turbulence, and the Complementarity of Organizational Learning Processes. *Academy of Management Journal*, 822–846.
Marino, V. (2020) The History and the Future of Cloud Office Suites. *Forbes*, October 26, 2020.
McAlister, L., Srinivasan, R., & Kim, M. (2007). Advertising, Research and Development, and Systematic Risk of the Firm. *Journal of Marketing, 71*(1), 35–48.
McAlone, N. (2015) This Man Invented the Digital Camera in 1975 – And His Bosses at Kodak Never Let It See the Light of Day. *Business Insider*, August 17, 2015.
Meredith, S., Francis, D. (2000), "Journey towards agility: the agile wheel explored", The TQM Magazine, 12(2), 137-143.
Miceli, A., Hagen, B., Riccardi, M. P., Sotti, F., & Settembre-Blundo, D. (2021). Thriving, Not Just Surviving in Changing Times: How Sustainability, Agility and Digitalization Intertwine with Organizational Resilience. *Sustainability, 13*(4), 2052.
Miller, D., & Friesen, P. H. (1983). Strategy-Making and Environment: The Third Link. *Strategic Management Journal, 4*(3), 221–235.
Mizik, N., & Jacobson, R. (2008). The Financial Value Impact of Perceptual Brand Attributes. *Journal of Marketing Research, 45*(1), 15–32.
Mizik, N. (2014). Assessing the Total Financial Performance Impact of Brand Equity with Limited Time Series Data. *Journal of Marketing Research, 51*(6), 691–706.
Moorman, C., Zaltman, G., & Deshpande, R. (1992). Relationships Between Providers and Users of Market Research: The Dynamics of Trust Within and Between Organizations. *Journal of Marketing, 29*(3), 314–328.
Moorman, C. M., & Miner, A. S. (1998). The Convergence of Planning and Execution: Improvisation in New Product Development. *Journal of Marketing, 62*(3), 1–20.
Nezami, M., Worm, S., & Palmatier, R. W. (2018). Disentangling the Effect of Services on B2B Firm Value: Trade-Offs of Sales, Profits, and Earnings Volatility. *International Journal of Research in Marketing, 35*(2), 205–223.
Nguyen, H. T., & Feng, H. (2021). Antecedents and Financial Impacts of Building Brand Love. *International Journal of Research in Marketing, 38*(3), 572–592.
Oh, T. T., Keller, K. L., Neslin, S. A., Reibstein, D. J., & Lehmann, D. R. (2020). The Past, Present, and Future of Brand Research. *Marketing Letters, 31*(2–3), 125–136.
Oliver, R. L. (1997). *Satisfaction: A Behavioral Perspective on the Consumer*. New York: McGraw-Hill.
Olson, E. M., Slater, S. F., Tomas, G., & Hult, M. (2005). The Performance Implications of Fit Among Business Strategy, Marketing Organization Structure, and Strategic Behavior. *Journal of Marketing, 69*(3), 49–65.

Paladino, A. (2007). Investigating the Drivers of Innovation and New Product Success: A Comparison of Strategic Orientations. *Journal of Product Innovation Management, 24*(6), 534–553.

Pansari, A., & Kumar, V. (2017). Customer Engagement - The Construct, Antecedents and Consequences. *Journal of the Academy of Marketing Science, 45*(3), 294–311.

Porter, Michael (1980). *Competitive Strategy: Techniques for Analyzing Industries and Competitors*. Free Press.

Ramanathan, A. (2020), ''SBI's one app to rule them all,'' *The Ken*, October 12, 2020, Retrieved at https://the-ken.com/story/sbis-one-app-to-rule-them-all/.

Reijonen, H., Hirvonen, S., Nagy, G., Laukkanen, T., & Gabrielsson, M. (2015). The Impact of Entrepreneurial Orientation on B2B Branding and Business Growth in Emerging Markets. *Industrial Marketing Management, 51*(1), 35–46.

Reinartz, W., Weigand, N., & Imschloss, M. (2019). The Impact of Digital Transformation on the Retailing Value Chain. *International Journal of Research in Marketing, 36*(3), 350–366.

Roberts, J. H., & Lilien, G. L. (1993). Explanatory and Predictive Models of Consumer Behavior. *Handbooks in Operations Research and Management Science, 5*(1), 27–82.

Roberts, J. (2005), "Defensive Marketing," Harvard Business Review, 83 (11), 150-157.

Roehm, M. L., & Tybout, A. M. (2006). When Will a Brand Scandal Spill Over, and How Should Competitors Respond? *Journal of Marketing Research, 43*(3), 366–373.

Romaniuk, J., & Sharp, B. (2004). Conceptualizing and Measuring Brand Salience. *Marketing Theory, 4*(4), 327–342.

Rudd, J. M., Greenley, G. E., Beatson, A. T., & Lings, I. N. (2007). Strategic Planning and Performance: Extending the Debate. *Journal of Business Research, 61*(1), 99–108.

Sethi, R., & Iqbal, Z. (2008). Stage-Gate Controls, Learning Failure, and Adverse Effect on Novel New Products. *Journal of Marketing, 72*(1), 118–134.

Sharma, P., & Srivastava, R. (2019) Will Google Be Amazoned? *Fortune India*, April 7, 2019.

Shankar, V., & Kushwaha, T. (2021). Omnichannel Marketing: Are Cross-Channel Effects Symmetric? *International Journal of Research in Marketing, 38*(3), 290–310.

Slater, S. F., & Narver, J. C. (1994). Does Competitive Environment Moderate the Market Orientation-Performance Relationship? *Journal of Marketing, 59*(1), 46–55.

Steenkamp, Jan-Benedict E. M. and Eric (Er) Fang (2011), ''The Impact of Economic Contractions on the Effectiveness of R&D and Advertising: Evidence from U.S. Companies Spanning Three Decades,'' Marketing Science, 30(4), 628-645.

Sprott, D., Czellar, S., & Spangenberg, E. (2009). The Importance of a General Measure of Brand Engagement on Market Behavior: Development and Validation of a Scale. *Journal of Marketing, 46*(1), 92–104.

Srinivasan, R., Rangaswamy, A., & Lilien, G. (2005). Turning Adversity into Advantage: Does Proactive Marketing During a Recession Pay Off? *International Journal of Research in Marketing, 22*(2), 109–125.

Srivastava, R. (2016). Leveraging Market-Based Assets to De-Risk Firm's Operations. *Asian Management Insights, 1*(2), 34–41.

Srivastava, R., Shervani, T. A., & Fahey, L. (1998). Market-Based Assets and Shareholder Value: A Framework for Analysis. *Journal of Marketing, 62*(1), 2–18.

Srivastava, R., Shervani, T. A., & Fahey, L. (1999). Marketing, Business Processes, and Shareholder Value: An Organizationally Embedded View of Marketing Activities and the Discipline of Marketing. *Journal of Marketing, 63*(3), 168–179.

Stein, S. (2021), ''Nike Takes A Brand Stand, Reportedly Exits Six More Retailers, Including DSW, Urban Outfitters And Macy's,'' *Forbes*, March 26, 2021, Retrieved at https://www.forbes.com/sites/sanfordstein/2021/03/26/nike-takes-a-brand-stand-exits-six-more-retailers-including-dsw-urban-outfitters-and-macys/?sh=1081fee972e7.

Sullivan, M. W. (1992). Brand Extensions: When to Use Them. *Management Science, 38*(6), 793–806.

Swait, J., & Erdem, T. (2007). Brand effects on choice and choice set formation under uncertainty. *Marketing Science, 26*(5), 679–697.

Swaminathan, V., Sorescu, A., Steenkamp, J.-B. E. M., O'Guinn, T. C. G., & Schmitt, B. (2020). Branding in a Hyperconnected World: Refocusing Theories and Rethinking Boundaries. *Journal of Marketing, 84*(2), 24–46.

Torres, P., Agusto, M., & Wallace, E. (2018). Improving Consumers' Willingness to Pay Using Social Media Activities. *Journal of Services Marketing, 32*(7), 880–896.

Tsai, K.-H., & Yang, S.-Y. (2013). Firm Innovativeness and Business Performance: The Joint Moderating Effects of Market Turbulence and Competition. *Industrial Marketing Management, 42*(8), 1279–1294.

van der Lans, R., van Everdingen, Y., & Melnyk, V. (2016). What to Stress, To Whom, and Where? A Cross-Country Investigation of the Effects of Perceived Brand Benefits on Buying Intentions. *International Journal of Research in Marketing, 33*(4), 924–943.

Vanian, J. (2020), ''Salesforce Shares Soar 13% on Strong Growth Despite the Pandemic,'' *Fortune*, August 25, 2020.

Walton, C. (2020), ''How Best Buy Used Its Retail Smarts to Stand Out in 2020,'' *Forbes*, December 15, 2020.

Wernerfelt, B. (1988). Umbrella Branding as a Signal of New Product Quality: An Example of Signaling by Posting a Bond. *RAND Journal of Economics, 19*(3), 658–666.

Wilden, R., & Gudergan, S. P. (2015). The Impact of Dynamic Capabilities on Operational Marketing and Technological Capabilities: Investigating the Role of Environmental Turbulence. *Journal of the Academy of Marketing Science, 43*(2), 181–199.

Williams, C. (1997). Intel's Pentium Chip Crisis: An Ethical Analysis. *IEEE Transactions on Professional Communication, 40*(1), 13–19.