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Advancing Antecedents of Brand Personality: A Meta-Analytical Review and Moderator Analysis

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ABSTRACT

Product differentiation is essential to attract consumers. Besides functional brand characteristics, symbolic traits like brand personality are a value-adding differentiation tool for marketers. While extant research has examined the relationships between brand personality and its antecedents, an extended and contemporary review is lacking. Building on the seminal meta-analysis by Eisend and Stokburger-Sauer (2013a) and consumer-brand relationship theory, this study employs meta-analytical techniques to synthesize past findings on the antecedents of brand personality. A significant increase in relevant studies and the opportunity to test potential moderators demand an improved meta-analysis. The updated meta-analysis covers 95 papers spanning 28 years (1997–2024) and a total of 1441 effect sizes. The findings yield new empirical generalizations, comparisons across brand-personality dimensions, and insights into changes over time. The results of a moderator analysis indicate that consumer personality is a stronger antecedent in collectivist (vs. individualistic) cultures and for high-self-signaling products (i.e., products that permit consumers to build and express their self-image through brand choices). Branding effects are stronger for experience (vs. search) products and in collectivist (vs. individualistic) cultures. In addition, product design is a stronger antecedent for students and high-self-signaling products. The findings provide managers with insights for building brand personality and suggest important directions for further research.

1 | Introduction

Brand personality, “the set of human characteristics associated with a brand” (Aaker 1997, p. 347), comprises five dimensions: sincerity, competence, excitement, sophistication, and ruggedness. It is an important tool to foster emotional connections with consumers (Bairrada et al. 2018) and is used by companies for brand positioning (Khurana and Kumar 2019). For example, Harley-Davidson is widely associated with ruggedness due to its bold design and adventurous image (Freling et al. 2011).

Over the past two decades, numerous studies have explored brand personality, including two meta-analyses. One examines the antecedents and consequences of brand personality and the effects of five moderators (services vs. goods, life cycle, sample,

study design, and manuscript status) on the consequences of brand personality (Eisend and Stokburger-Sauer 2013a), and the other examines Aaker. (1997) measurement and its cultural generalizability (Eisend and Stokburger-Sauer 2013b).

While the two meta-analyses make valuable contributions, according to Steel et al.’s (2021) criteria an updated meta-analysis can add a novel contribution when (1) the topic remains relevant, (2) there is added value due to an expanded research base and a more robust methodology, and (3) new findings can be generated. Brand personality research has grown significantly since the first meta-analysis, which included 26 papers using Aaker. (1997) brand personality scale and covered studies through 2010. Our review identified 96 such papers published up to the end of 2024, indicating that the earlier meta-analysis accounts for only 27% of

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the currently available literature. Regarding an expanded research base, novel antecedents (e.g., extension fit) do not appear in previous meta-analyses because they emerged after publication of the analyses. In addition, key moderators remain unexplored, including those related to the consumer, the brand, and different contexts (e.g., individualism and services vs. goods).

Table 1 summarizes relevant review articles alongside empirical works that incorporate cross-country moderators within the domain of brand personality research, published since the recent meta-analyses (2013–2024). The table highlights multiple shortcomings in the literature. First, the majority of the reviews are qualitative in nature or rely on bibliometric analyses, with limited focus on the antecedents of brand personality (e.g., Calderón-Fajardo et al. 2023; Davies et al. 2018). Second, the few studies that classify antecedents of brand personality often apply different sets of antecedents (e.g., Ghorbani et al. 2022; Saeed et al. 2022) and there is no agreement on a theory-led organizing framework of antecedents.

Third, despite numerous calls in the literature for examining boundary conditions of antecedents (e.g., Calderón-Fajardo et al. 2023; Carvalho et al. 2021), studies fall short to discuss moderators. While moderators related to consumers (e.g., Aktan et al. 2021; Suddin et al. 2014), brands (e.g., Eisend and Stokburger-Sauer 2013a; Zhang 2017) and context (e.g., Matzler et al. 2016; Priporas et al. 2020) have been discussed in connection with brand personality, they typically only address the effect of brand personality on consequences, but boundary conditions for antecedents of brand personality have been overlooked. For example, Eisend and Stokburger-Sauer (2013a) do not explain variations in antecedent effects through moderator analysis due to too few effect sizes despite observing considerable heterogeneity among antecedents of brand personality. For instance, this heterogeneity is perceptible with Chan-Olmsted and Cha (2008) reporting a positive effect of prior attitude on the brand personality dimension of competence, while Chung and Park (2017) observe a negative relationship. A moderator, for instance related to context such as individualism, may explain these opposing findings, but individualism is understudied although consumers differ across countries and cultures, affecting a brand's global symbolic value (De Mooij and Hofstede 2011). In practice, the Harley-Davidson brand resonates in Australia's individualistic culture (Schembri 2008); however, it remains unclear whether its brand image could be developed more effectively in collectivistic cultures.

This meta-analysis contributes to brand personality literature in three important ways. First, it provides an updated summary and theory-led organizing framework of brand personality antecedents. Based on consumer-brand relationship theory, we consolidate findings and point to a blind spot in the current brand personality literature, that is, context-related antecedents. With this, we offer a more granular picture and expand upon previous studies (e.g., Ghorbani et al. 2022). We also examine whether brand personality antecedents converge or diverge across dimensions and whether this has changed over time.

Second, this study broadens brand personality research by investigating moderators that were overlooked in previous work. We explore moderators from both sides of the consumer-brand relationship. For consumers we find that students depict

stronger effects than the general population for design antecedents of brand personality. For brand-related moderators we reveal that branding effects are stronger for experience products than for search products. In addition, product design is a stronger antecedent for products with high self-signaling potential. These insights offer valuable guidance for both academics and practitioners on how both relationship partners influence brand personality.

Third, this study contributes to international marketing research by establishing that country-level context shapes the effect of brand personality antecedents. Specifically, individualism (based on Hofstede's cultural dimensions) moderates these effects. For instance, product design has a stronger effect on brand personality in collectivist countries than in individualistic countries. This suggests that marketers in collectivist cultures like Japan and China could invest more in design elements, such as colors and packaging, as these elements evoke group identity and shared values, resonating more strongly with collectivist consumers. This study also finds that context beyond culture (i.e., services vs. goods context) presents a boundary condition to the prior relationship experience antecedent of brand personality. Finally, we address previously unconsidered methodological factors that test results' robustness and yield insights to improve future research design.

2 | Conceptual Framework

The pertinent literature is not organized around a theory-led organizing framework for antecedents of brand personality (Eisend and Stokburger-Sauer 2013a; Ghorbani et al. 2022). We suggest that such a framework can be based on consumer-brand relationship theory (Alvarez et al. 2023; Fournier 1998). Brand personality postulates the humanization of brands (Aaker 1997) and enables human-like relationships with a brand (Fournier 1998). Research has successfully employed consumer-brand relationship theory in brand personality studies (Ghorbani et al. 2022; Fournier 1998), but has overlooked its usefulness as an organizing framework. According to relationship theory, there are generally four groups of antecedents in relationships, and these can be sorted into either relationship partner, relationship attributes, and context (Alvarez et al. 2023; Athanasopoulou 2009; Eiriz and Wilson 2006). Applied to brand personality, these antecedents translate to consumer-related antecedents (such as a consumer's personality), brand-related antecedents (such as the brand's marketing mix), antecedents connected to relationship attributes (e.g., duration of the relationship), and the context of the relationship (e.g., if it is formed in a physical or digital space). Based on these groups and considering Eisend and Stokburger-Sauer's (2013a) meta-analytical classifications, we categorize the antecedents of brand personality identified in empirical papers for our study and select relevant moderators (Figure 1). Because of the meta-analytical method, we are limited by the existing body of work and could not identify context-related antecedents or relationship-attribute related moderators, which suggest important future research directions.

Based on consumer-brand relationship theory and reflecting on the classification in the earlier meta-analysis (Eisend and Stokburger-Sauer 2013a), we develop an antecedents'

TABLE 1 | Recent reviews and related studies on brand personality.

| Study | Papers reviewed | Annual coverage | Method | Focus | | Advocated theories related to brand personality | Organizing framework for antecedents | Key findings |
|-------------------------------------|-----------------|-----------------|-------------------------------------|--------------------------------|-------------------------|---|--|---|
| | | | | (antecedents vs. consequences) | | | | |
| Eisend and Stokburger-Sauer (2013a) | 56 | 1997–2010 | Meta-analysis | Both | None | None | Antecedents classified into advertising, product characteristics, consumer demographics, and consumer psychographics | <ul style="list-style-type: none"> – key antecedents of brand personality (BP) include hedonic benefits, branding activities, country-of-origin, and consumer personalities – among BP dimensions, sincerity and competence exhibit strongest influence on brand success metrics, such as brand attitude and purchase intention, while excitement and ruggedness depict weaker effects – consequences of BP stronger for mature brands |
| Eisend and Stokburger-Sauer (2013b) | 94 | 1997–2013 | Meta-analysis | None (Measurement) | Aaker. (1997) | brand personality scale | NA | <ul style="list-style-type: none"> – reliabilities of brand personality dimensions vary across method characteristics – BP dimensions demonstrate differential effects on performance measures, such as brand attitude, highlighting their predictive power – cultural moderators (individualism, uncertainty avoidance) increase BP dimensions measurements' reliability |
| Ahmad and Thyagaraj (2014) | 118 | 1992–2013 | Qualitative review | Consequences | None | None | NA | <ul style="list-style-type: none"> – identified research gaps include extending brand personality and equity concepts to underexplored domains (e.g., service brands, B2B, franchise-based equity), constructing industry-specific brand equity indices, and identifying outcome variables of brand equity |
| Suddin et al. (2014) | primary data | NA | Correlation and regression analysis | Consequences | Image congruence theory | NA | NA | <ul style="list-style-type: none"> – product involvement moderates link between BP and brand loyalty |

(Continues)

TABLE 1 | (Continued)

| Study | Papers reviewed | Annual coverage | Method | Focus (antecedents vs. consequences) | Advocated theories related to brand personality | Organizing framework for antecedents | Key findings |
|-----------------------|-----------------|-----------------|---|--------------------------------------|---|--|--|
| Matzler et al. (2016) | primary data | NA | Partial least squares structural equation modeling | Consequences | Hofstede's model of national culture | NA | <ul style="list-style-type: none"> brand self-congruity partially mediates BP–visit intention link, except for aggressiveness dimension, which directly influences visit intention individualism and uncertainty avoidance negatively moderate relationship between brand self-congruity and visit intention |
| Aly et al. (2017) | 32 | 1980–2012 | Qualitative review | Both | None | <p>Suggested antecedents are brand trust, brand engagement in self-concept, brand relevance in category, country of origin, brand experience</p> | <ul style="list-style-type: none"> conceptual framework for BP in not-for-profit organizations brand experience as key antecedent of BP, donor satisfaction, and re-donation intentions as key consequences |
| Zhang (2017) | primary data | NA | Experimental design with ANOVA | Antecedent | Interpersonal communication theory | NA | <ul style="list-style-type: none"> assertive communication style enhances perceptions of excitement in BP communication styles indirectly influence consumers' attitude towards brand and purchase intention through BP perceptions |
| Davies et al. (2018) | 21 | 1997–2016 | Review of measures; analysis of secondary and primary data to validate dimensions | None (Measurement) | Signaling theory; stereotype content model | NA | <ul style="list-style-type: none"> product type (utilitarian vs. hedonic) does not moderate effects of communication style (assertive vs. responsive) on consumer attitudes or purchase intentions dimensions of BP include sincerity, competence, and status universal core dimensions should be supplemented by context-specific dimensions |

(Continues)

TABLE 1 | (Continued)

| Study | Papers reviewed | Annual coverage | Method | Focus (antecedents vs. consequences) | Advocated theories related to brand personality | Organizing framework for antecedents | Key findings |
|------------------------------|-----------------|-----------------|--|--------------------------------------|---|--------------------------------------|--|
| Kumar (2018) | 30 | 1997–2015 | Qualitative review with thematic analysis | None (Measurement) | Aaker. (1997) brand personality scale | NA | <ul style="list-style-type: none"> - six categories of criticism related to Aaker's brand personality scale: definition, dimension, methodology, concept, words, and generalizability |
| Radler (2018) | 220 | 1995–2016 | Bibliometric co-citation analysis | Consequences | NA | NA | <ul style="list-style-type: none"> - field categorized into five distinct research clusters: measurement of BP, direct and indirect effects of BP, dynamics of BP dimensions, BP in brand extensions, applications of BP to related areas |
| Lara-Rodriguez et al. (2019) | 220 | Not Provided | Bibliometric analysis | None | NA | NA | <ul style="list-style-type: none"> - BP research categorized into four methodological phases: research overview, author analysis, semantic analysis, and model exploration - suggest research directions include exploring diverse marketplaces and underrepresented emerging markets |
| Priporas et al. (2020) | primary data | NA | Structural equation model | Consequences | Construal level theory | NA | <ul style="list-style-type: none"> - city image and BP affect Generation Z's engagement with city social media - residents' satisfaction negatively related to social media engagement with city - - economic crisis' impact on personal routines moderates relationship between satisfaction and social media engagement |
| Aktan et al. (2021) | primary data | NA | Partial least squares structural equation modeling | Consequences | Stakeholder theory | NA | <ul style="list-style-type: none"> - positive effect of destination personality on destination brand equity - expatriates' cultural intelligence positively moderates relationship between destination personality and destination brand equity |
| Carvalho et al. (2021) | 351 | 2015–2019 | Systematic review with | None | NA | NA | <ul style="list-style-type: none"> - identified research areas: brand-related outcomes, consumer-related outcomes, scale development & validation, |

(Continues)

TABLE 1 | (Continued)

| Study | Papers reviewed | Annual coverage | Method | Focus (antecedents vs. consequences) | Advocated theories related to brand personality | Organizing framework for antecedents | Key findings |
|-----------------------------|-----------------|-----------------|-------------------------------------|--------------------------------------|---|---|---|
| | | | bibliometric analysis | | | | experimental methods & metrics, applications in tourism, conceptual frameworks |
| Ghorbani et al. (2022) | 107 | 2005–2021 | Systematic review; content analysis | Both | Theories applied include brand personality theory, consumer-brand relationships theory, self-congruity theory, human personality theory | Suggested antecedents are channel type, platform design, content/communication style, and other factors | <ul style="list-style-type: none"> – suggested future research includes deeper theoretical exploration of BP, including antecedents, contextual influences, construct stability, and dynamics in social media environments – study focuses on digital brand personality research – future research suggestions include digital touchpoints and technologies, theoretical foundations, and diverse methodologies |
| Saeed et al. (2022) | 62 | 1997–2018 | Systematic review | Both | NA | Antecedents divided into four themes: brand-related, promotion-related, consumer-related, and product-related | <ul style="list-style-type: none"> – antecedents and consequences of brand personality categorized into consumer products, highlighting key mediators and moderators – identified moderators classified into product-related, brand-related, and company/promotion-related categories – significant growth of BP research over recent decades, with increasing contributions from a diverse range of disciplines |
| Vicencio-Rios et al. (2022) | 531 | 1975–2019 | Scientometric analysis | None | NA | NA | <ul style="list-style-type: none"> – multidisciplinary relevance and applicability of BP, including fields of business, psychology, services, communication, education |

(Continues)

TABLE 1 | (Continued)

| Study | Papers reviewed | Annual coverage | Method | Focus (antecedents vs. consequences) | Advocated theories related to brand personality | Organizing framework for antecedents | Key findings |
|--------------------------------|-----------------|-----------------|-----------------------|--------------------------------------|---|---|---|
| Calderón-Fajardo et al. (2023) | 1051 | 1987–2022 | Bibliometric analysis | None | NA | NA | <ul style="list-style-type: none"> major themes of BP research include conceptualization, measurement, evolution, methodologies, BP's impact on consumer-brand relationships and applications in tourism destination-focused studies emerging BP-focused themes include applications in virtual reality, artificial intelligence, service robots, storytelling, and tourism segments conceptual link between brand equity and brand personality, indicating interconnectedness of two constructs |
| Jingcheng et al. (2023) | 7 | 2017–2023 | Qualitative review | Consequences | None | NA | |
| This study | 95 | 1997–2024 | Meta-analysis | Antecedents | Consumer-brand relationship theory | Antecedents classified into consumer-related (consumer personality & self-confidence), brand-related (brand advertising, branding, product design, & extension fit), relationship-attribute related (prior relationship experience) and context-related | <ul style="list-style-type: none"> update and expansion of meta-analysis of Eisend and Stokburger-Sauer (2013a) consumer personality stronger antecedent for products with high (vs. low) self-signaling potential and in collectivist (vs. individualistic) cultures branding stronger antecedent of brand personality for experience (vs. search) products and in collectivist (vs. individualistic) cultures product design stronger antecedent for students (vs. general population) and for high-self-signaling products prior relationship experience stronger antecedent for services (vs. goods) |

Abbreviations: B2B, business to business; BP, brand personality; NA, not applicable.

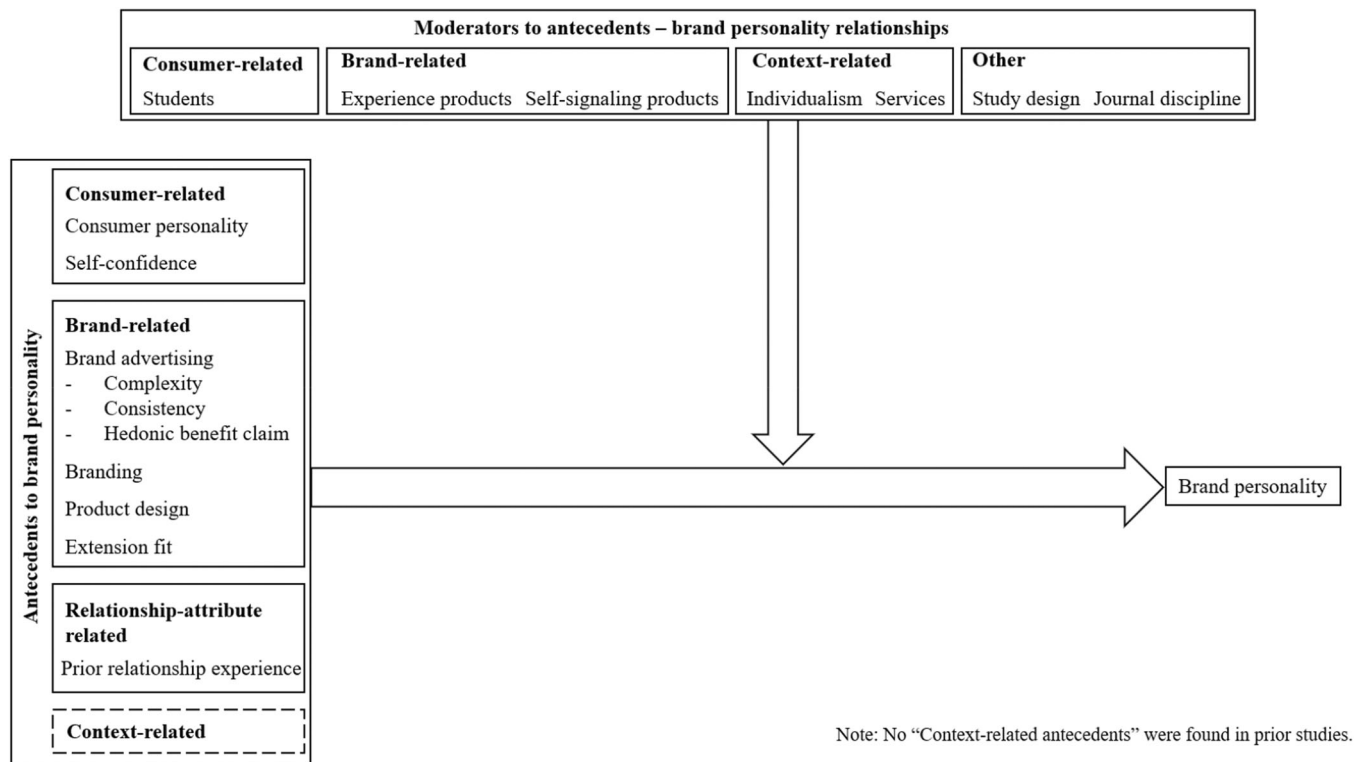


FIGURE 1 | Framework for antecedents and moderators of brand personality.

framework for brand personality. For consumer-related antecedents, we identify consumer personality and self-confidence as relevant sub-categories. While the Eisend and Stokburger-Sauer's (2013a) meta-analysis has identified relevant demographic traits that also belong to this category (consumer age, gender, nationality), we decided to remove them for improved clarity.¹

In terms of brand-related antecedents, we identify brand advertising, branding, product design, and extension fit as categories. Brand advertising can be further divided into the sub-categories of complexity, consistency, and hedonic benefit claim. Extension fit is an additional antecedent that was not included in Eisend and Stokburger-Sauer (2013a) meta-analysis, but is a clear brand-related antecedent according to consumer-brand relationship theory (Fournier 1998). In today's competitive branding landscape, brand extensions are ubiquitous and serve as critical strategic tools for growth (Völckner and Sattler 2006). As brands diversify into new categories, the alignment between their established identity and extended offerings (i.e., extension fit) becomes a significant antecedent of consumer perceptions. A well-aligned extension enhances a brand's symbolic meaning and may thus also strengthen the brand's personality. To account for the importance of extension fit in brand personality research (Radler 2018), we include extension fit in this meta-analysis. Compared to the Eisend and Stokburger-Sauer (2013a) meta-analysis, we exclude country of origin as a subcategory because of coding ambiguity.²

For relationship-attribute related antecedents, we identified prior relationship experience as a key category, following consumer-brand relationship theory (Alvarez et al. 2023; Athanasopoulou 2009). This is in contrast to Eisend and Stokburger Sauer's (2013a)

conceptualization, that viewed brand experience and prior attitude as individual categories and as part of consumer psychographics. Brakus et al. (2009) describe brand experience as a multidimensional construct that includes behavioral responses and subjective internal reactions (perceptions, emotions, and cognitions) and is triggered by exposure to brand-related stimuli. Moreover, brand relationship experiences are characterized as sequential interactions and touchpoints between consumers and brands, thereby constituting a form of interactive learning from both sides (Payne et al. 2009). Thus, while attitude is shaped by direct and indirect experiences of the consumer with a brand (Fournier 1998), the serial interactions of prior attitude and relationship experiences lead to conceptual overlaps. Based on these insights, we conceptualize prior relationship experience as a relationship-attribute antecedent that unifies prior attitude and brand experience based on their shared foundation in consumers' long-term interactions with brands. This integrated construct offers a more theoretically coherent classification than treating them as separate traits of the consumer.

Our large study base enables the testing of moderators affecting antecedent–brand personality relationships. For theoretical fit and conceptual clarity, we identify moderators that relate to the consumer-brand relationship categories. We include students (vs. general population) as a consumer-related moderator. To tap brand-related effects, we assess product self-signaling potential and experience (vs. search) products as moderators. Products with high self-signaling potential permit consumers to build and express their self-image through brand choices (Dixon and Mikolon 2021). It is a suitable moderator since personality resonates with a sense of self and many brand consumption experiences occur privately instead of publicly (Fournier 1998).

For context-related moderators, we have selected cultural differences because cultural contexts shapes how relationships are formed and maintained, affecting perceptions of the brand's personality. To explore cultural influences, our study focuses solely on individualism from Hofstede's cultural dimensions, following other meta-analyses (e.g., Nardi et al. 2020; Afonso Vieira et al. 2023). Individualism is a key cultural dimension in brand personification strategies (Aguirre-Rodríguez 2014) and thus a good proxy for cross-country differences. Moreover, we also investigate differences according to services (vs. goods) because it presents an important contextual category according to consumer-brand relationship theory (Alvarez et al. 2023), but was not explored for antecedent relationships in the literature (Table 1). While services could arguably be considered a brand-related characteristic, we follow consumer-brand relationship theory and service-dominant logic, both of which emphasize the contextual nature of service environments. For example, Vargo et al. (2008) propose that "value is a contextually contingent concept," underscoring how context shapes the perception and co-creation of value. Similarly, Grönroos and Voima (2013) describe service interactions as involving physical, virtual, or mental contact that allows firms to engage with customer practices and influence their outcomes. These perspectives support our classification of services as a contextual moderator that reflects the broader environment in which brand-related interactions unfold. Finally, we examine methodological moderators to account for study variability (Borenstein et al. 2021), testing research design, and journal discipline.³

Figure 1 illustrates our framework, outlining the nine antecedents of brand personality, along with moderators relating to the consumer, brand, context, and other moderators. Table 2 presents these moderators and their expected effects across five relationships⁴ and explains each effect.

3 | Methods

3.1 | Literature Search

We conducted a five-stage literature search following previous meta-analyses and recommended guidelines (e.g., Hunter and Schmidt 2014). First, we searched review articles, including 26 papers from Eisend and Stokburger-Sauer (2013a). Second, we performed a keyword search on Google Scholar, EBSCO, ProQuest Dissertations and Theses, and Web of Science using terms like "brand personality" and "Aaker 1997." Third, we screened citations from review articles. Fourth, we screened reference lists of the primary studies we had included for our analysis. Fifth, following Mackey et al. (2021), we repeated a broader keyword search in leading journals ranked as 3, 4, or 4* in the Chartered Association of Business Schools (CABS) Academic Journal Guide in international business, marketing, tourism and psychology.⁵ These journals are top-ranked in the field and have published extensively on brand personality (Roy and Banerjee 2022). To enhance the completeness and accuracy of our data set, we contacted the authors of 63 papers to request missing information, such as correlation matrices, details of data collection, or inaccessible full texts. We received responses from 22 authors, and the data provided were incorporated into the analysis wherever applicable. For papers where additional

data could not be obtained, we utilized established and validated methods to derive the necessary effect sizes, ensuring the rigor and reliability of our meta-analysis.

To attenuate publication bias, we posted a call for unpublished data in January 2022. Although this call yielded one manuscript related to the consequences of brand personality, no studies on its antecedents were submitted. Nevertheless, through our comprehensive search, covering manuscripts from August 1997 (when the Aaker (1997) brand personality paper was published) to December 2024, we successfully identified both published and unpublished papers focusing on the antecedents of brand personality.

3.2 | Selection Criteria

We used five selection criteria: (1) Studies must empirically explore brand personality antecedents and use at least one dimension from Aaker. (1997) scale, as this framework is widely recognized as the foundational model in brand personality research (Eisend and Stokburger-Sauer 2013a). Its inclusion ensures consistency and comparability across the studies analyzed. (2) Studies needed to report sufficient information to estimate effect sizes with a correlation coefficient or equivalent metric (we contacted authors for missing data). (3) We only included papers written in English between 1997 and 2024. (4) We counted duplicates or multiple data sets⁶ originating from the same participants once. (5) We excluded bachelor's and master's theses. The initial search yielded 4522 papers. After applying the criteria, we selected 95 papers from 38 countries. To ensure transparency and reproducibility, the final sample of studies and the process of selecting primary papers for the meta-analysis are illustrated in Figure 2, which provides a detailed overview of the screening and inclusion procedure.

3.3 | Data Coding

We summarize our construct coding in Table 3; it is based on Eisend and Stokburger-Sauer (2013a) but revised where necessary. Among the coded constructs, advertising complexity warrants further clarification. We follow the commonly accepted definition of the construct (i.e., "the degree to which an ad is complex and relatively difficult to understand," Eisend and Stokburger-Sauer 2013a), which includes both subjective evaluations (Wang et al. 2024) and objective stimulus features (Bradley and Meeds 2002) that are relevant for the complexity construct in general. Our coding reflects this operationalization, and we identified studies as input for our meta-analysis that include perceptions of complexity (e.g., Cervera-Taulet et al. 2013) as well as studies that manipulated complexity. For instance, metaphoric headlines in advertising are more difficult to understand than non-metaphoric ones (Hayes et al. 2008). The primary coder assigned all antecedents to one of the nine subcategories based on variable definitions, measurement scales, and construct definitions. Three additional coders independently assessed the coding (86.06% agreement). Disagreements were resolved through discussions. Moderators were coded as shown in Table 4.

TABLE 2 | Expected moderator effects to brand personality antecedents.

| Moderators | Brand personality antecedents | | | | Prior relationship experience |
|--|---|--------------------------|--|---|-------------------------------|
| | Consumer personality | Brand advertising | Branding | Product design | |
| Students 1 = students 0 = general population | Expectation: + Argument: Students are in a formative stage of life, actively shaping their identities, and are more susceptible to influences that align with their evolving self-concepts and brand personalities. They often use brands for self-expression and identity formation, placing high value on brand cues that reflect their personal or aspirational identities (Chernev et al. 2011). | Expectation: None | Expectation: + Argument: Compared with the general population, which has a broader age range and varying brand engagement, students exhibit higher brand consciousness and are more influenced by branding (Eastman et al. 2020). This increases the impact of branding on brand personality formation among students. | Expectation: + Argument: Students are more visually oriented and use innovative product design for self-expression and social identity (Byun et al. 2018). In their formative stage of developing brand preferences, they are more impressionable to design influences, making them more responsive to elements that convey brand personality. Consequently, the general population is less influenced by product design compared with students. | Expectation: None |
| Experience 1 = experience product 0 = search product | Expectation: None | Expectation: None | Expectation: + Argument: Branding leads to product differentiation (i.e., brand personality positioning), which is especially relevant for experience products (Keller and Lehmann 2006; Park et al. 1986). Experience products reveal qualities only after purchase (Huang et al. 2009), making branding essential to build trust (Yalcinkaya and Aktekin 2015; Zhu and Zhang 2010). Conversely, for search products, attributes can be assessed | Expectation: + Argument: Due to the experiential nature of experience products, consumers must use these products to evaluate their quality (Nelson 1970), as is the case with restaurants. Previous interactions and direct experiences with these products create engagement, shaping consumers' perceptions of brand personality. | |

(Continues)

TABLE 2 | (Continued)

| Moderators | Brand personality antecedents | | | | Prior relationship experience |
|-----------------------------------|---|---|--|--|--|
| | Consumer personality | Brand advertising | Branding | Product design | |
| Self-signaling 1 = high0 = low | <p>Expectation: +</p> <p>Argument: Brand personality is perception-based; thus, a consumer's personality is an antecedent. For high-self-signaling products, cognitive consistency and authentic self-expression are crucial (Malär et al. 2011). This strengthens the link between consumer and brand personality due to a higher need for self-verification and identity consistency (Swann and Buhrmester 2012).</p> | <p>Expectation: +</p> <p>Argument: Advertising involves rich storytelling and emotional appeals that resonate strongly with consumers (Edson Escalas 2004). For products with high self-signaling potential, like luxury cars, advertisements create aspirational narratives that align with consumers' desired identities. This emotional engagement makes these advertisements more noticeable and likely to be shared, enhancing the influence on perceived brand personality.</p> | <p>before purchase (Nelson 1970), allowing consumers to form brand perceptions based on observable features.</p> <p>Expectation: +</p> <p>Argument: Brands are key to consumers' social and individual identity (Levy 1959). High-self-signaling products in particular permit consumers to project attributes and manage social impressions, making them crucial for expressing desired identities. This makes consumers more sensitive to brand personality cues; thus, the impact of branding on brand personality perception is stronger for high-self-signaling products.</p> | <p>Expectation: +</p> <p>Argument: High self-signaling products (e.g., luxury watches) enable consumers to reflect their identity and manage impressions (Grossman 2015). Thus, consumers invest more effort in interpreting these items, strengthening the design-brand personality connection.</p> | <p>Expectation: None</p> |
| Individualism | <p>Expectation: –</p> <p>Argument: Collectivist cultures emphasize social interdependence and shared norms (Hudson et al. 2016; Triandis 1989). In these societies, brands signal social status and align with societal values (Bazi et al. 2020; Ko et al. 2019), strengthening the connection between</p> | <p>Expectation: None</p> | <p>Expectation: –</p> <p>Argument: Consumers in collectivist societies focus more on how brands reflect collective identity, resulting in more consistent brand personality perceptions (Briley and Wyer 2002). Conversely, in individualistic cultures,</p> | <p>Expectation: –</p> <p>Argument: In collectivist cultures, product design reflects group values and norms (Hofstede 2001), strengthening its connection to brand personality. Social identity theory suggests that individuals classify themselves into social groups, establishing identity</p> | <p>Expectation: –</p> <p>Argument: In collectivist cultures, community and group influence are strong (Hofstede 2001). Consumers often share their experiences with family and the larger community. Positive experiences with a brand are likely to spread through social proof, as</p> |

(Continues)

TABLE 2 | (Continued)

| Moderators | Brand personality antecedents | | | |
|--------------|--|--|---|--|
| | Consumer personality | Brand advertising | Branding | Product design |
| | consumer and brand personality (Hofstede 2001). In contrast, individualistic cultures prioritize personal values and autonomy (Hofstede 2011), reducing the societal signaling role of brands. Collectivist consumers adapt their attitudes to align with social norms, choosing brands that reflect collective identity and seeking social approval (Yi-Cheon yim et al. 2014). Therefore, consumer personality has a stronger impact on brand personality perception in collectivist cultures. | | diverse personal values lead to varied perceptions of brand personality (Power et al. 2010), potentially weakening branding's impact. Collectivist cultures emphasize community and shared values (Moon et al. 2008), leading to a stronger impact of branding on brand personality. These cultures focus on family and community benefits, which align well with brand messaging. | through shared design preferences (Ashforth and Mael 1989). Design that resonates with collective aspirations, shaped by family and peers, amplifies the brand's personality (Power et al. 2010). In contrast, in individualistic cultures, diverse design tastes and the emphasis on personal uniqueness (Briley and Wyer 2002) diminish design's impact on brand perception. |
| Services | | | | |
| 1 = services | | | | |
| 0 = goods | | | | |
| | | Expectation: + Argument: Services are intangible (Hartman and Lindgren 1993), making advertising vital for forming initial impressions. Unlike goods, which are physically accessed (Zeithaml et al. 1985), services rely heavily on advertising as the main information source. Services advertisements may therefore play a more important role in shaping brand personality. | Expectation: + Argument: Services are intangible (Hartman and Lindgren 1993) and more variable (Murray and Schlacter 1990), relying heavily on branding to ensure trust and quality. Because production and consumption occur simultaneously, employee behavior and the service environment play key roles in building the brand and shaping brand personality (Gordon et al. 2016). | Expectation: None Argument: Due to the intangible nature of services and perceived risks, prior experiences play a critical role (Mitchell and Greatorex 1993). Consumers rely on personal experiences and word of mouth to mitigate uncertainties and assess a service's value. This subjective reliance makes prior experiences particularly important in shaping perceptions of a service's brand personality. |

(Continues)

TABLE 2 | (Continued)

| Moderators | Brand personality antecedents | | | Prior relationship experience |
|--|---|-------------------|-----------------------|-------------------------------|
| | Consumer personality | Brand advertising | Branding | Product design |
| Study design 1 = experiment 0 = survey | Argument: In experimental studies, researchers control exposure to elements, such as branding and product design, to ensure participants encounter the brand under consistent conditions (Farley et al. 1995). This enables precise measurement of brand personality perception. Researchers can also manipulate elements (e.g., packaging) to observe their specific effects on brand personality. | | Expectation: + | |
| Journal discipline 1 = marketing journals 0 = other journals | Argument: Brand personality was initially conceptualized within marketing (Aaker 1997) but has since been integrated into various fields like management, travel research, and sports, adding complexities that dilute the impact of brand personality antecedents. The formation of place brands, for instance, involves multifaceted entities (city/country) with diverse attributes and stakeholders (e.g., residents, governments, businesses). Following Eshghi (2022), the journal's discipline is thus included as a valuable indicator of the study's focus. | | Expectation: + | |

3.4 | Effect Size Computation and Integration

We selected Pearson's correlation coefficient (r) as the effect size indicator. When papers reported other measures (e.g., t -test, F -test), we converted these measures into r using standard guidelines (e.g., Lipsey and Wilson 2001). Before effect size integration, we corrected correlations for measurement errors by dividing them by the square root of the two constructs' reliabilities (Cronbach's alpha) (Hunter and Schmidt 2014). If reliability information was unavailable, we used the construct's average reliability (Rosengren et al. 2020).

Multiple correlations from the same data set imply that effect sizes are nested within studies (e.g., Anvari and Irum 2015). Therefore, we employed a multilevel meta-analytic model with R software (Blut and Wang 2020; Viechtbauer 2010). We assess publication bias using Egger's regression test to identify if studies with significant results were more likely to be published (Rothstein et al. 2005).

3.5 | Moderator Analysis

We applied a multilevel approach for the moderator analysis. This approach allows us to examine study-level moderators while controlling for within-study dependencies and between-study variability. To ensure robustness, a sufficient sample size is essential, especially at the higher level. Maas and Hox (2005) suggest a sample size of approximately 50 to prevent biased estimates of second-level standard errors and ensure reliable results. Accordingly, we only included relationships with sufficiently large sample sizes (Rosengren et al. 2020). In line with prior studies (e.g., Lee and Kim 2018), we combined Aaker. (1997) brand personality dimensions due to an insufficient number of effect sizes. This allowed for the analysis of five key antecedents: advertising, branding, product design, consumer personality, and prior experience. We employed the following meta-regression models for these antecedents:

$$\begin{aligned}
 r_{ij} = & \beta_0 + \beta_1 (Students_j) + \beta_2 (Experience_j) \\
 & + \beta_3 (Self - signaling_j) + \beta_4 (Individualism_j) \\
 & + \beta_5 (Services_j) + \beta_6 (Study design_j) \\
 & + \beta_7 (Journal discipline_j) + u_j + \epsilon_{ij},
 \end{aligned}$$

where r_{ij} is the effect size (correlation coefficient) for the i -th effect size of brand personality perception in the j -th study; β_0 is the intercept; β_1, \dots, β_7 are the regression coefficients for the study-level moderators $Students_j$, $Experience_j$, $Self-signaling_j$, $Individualism_j$, $Services_j$, $Study design_j$, and $Journal discipline_j$; u_j is the random effect at the study level, capturing between-study variability; and ϵ_{ij} is the residual error term.

We conducted a multicollinearity assessment using the generalized variance inflation factor (GVIF) (Peng et al. 2023). Following Schmidt and Bijmolt (2020), we calculated as $GVIF = (VIF)^{1/(2 * df)}$, because all moderators are categorical except for individualism versus collectivism. Maximum GVIF was 2.280, indicating no serious collinearity issue.

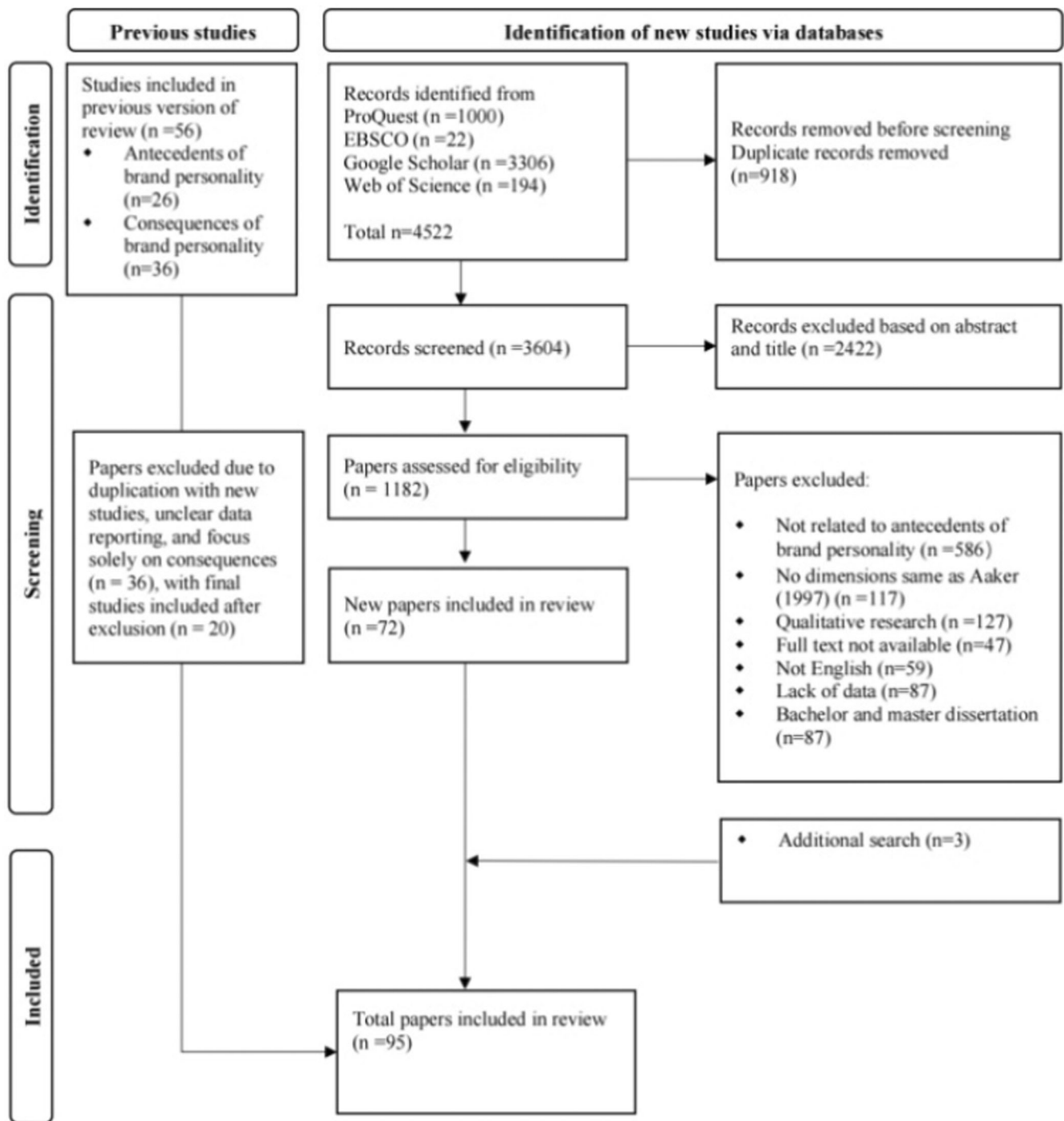


FIGURE 2 | Selection procedure of primary studies included in the meta-analysis.

4 | Results

4.1 | Results of Effect Size Integration

Table 5 presents the main effect analysis alongside findings from Eisend and Stokburger-Sauer (2013a). For specific brand personality dimensions, the effects of antecedents vary. Some antecedents affect all dimensions, while others are dimension specific. For example, branding positively influences all dimensions. However, hedonic benefit claims only affect sophistication and ruggedness. Notably, as indicated by overlapping confidence intervals, there are no significant differences

in effect sizes across dimensions for antecedents like branding, product design, consumer personality, and consumer prior relationship experience.

When considering brand personality as a single construct, consumer personality is the most investigated independent variable (456 effect sizes), followed by prior relationship experience (366 effect sizes). Using guidelines from Lipsey and Wilson (2001), we categorize effect sizes as small (≤ 0.1), medium (< 0.4), and large (≥ 0.4). All nine antecedents show a significant, positive effect on brand personality perception in general, except for consumer self-confidence. Notably, consumer personality and branding, i.e., key

TABLE 3 | Construct definitions, aliases, and representative studies.

| Construct | Definitions | Common aliases | Representative studies |
|---|--|---|--|
| Consumer-related antecedents | | | |
| Consumer personality | Set of human characteristics a person possesses | Consumer personality | Anvari and Irum (2015); Roy (2019) |
| Self-confidence | Extent to which a consumer feels capable and assured with respect to his/her (marketplace) decisions and behaviors (Bearden et al. 2001) | Consumer satisfaction with their face | Guthrie et al. (2008); Orth and Malkewitz (2012) |
| Brand-related antecedents | | | |
| Brand advertising | | | |
| Advertising complexity | The degree to which an ad is complex and relatively difficult to understand | Headline type in advertising (metaphoric vs. nonmetaphoric) | Ang and Lim (2006); Hayes et al. (2008) |
| Advertising consistency | The degree to which an ad (campaign) is coherent and in agreement with itself | Consistent ad series versus inconsistent ad series | Puzakova et al. (2015); Yoo et al. (2009) |
| Hedonic benefit claim | A message with a hedonic benefit claim describes hedonic needs for sensory pleasure, while a utilitarian claim concerns a pragmatic benefit (Lim and Ang 2008) | Hedonic (vs. utilitarian) benefit claim type | Ang and Lim (2006); Lim and Ang (2008) |
| Branding | Activities that support the creation of a unique and inimitable brand | Commercial image, logo | Thai Hoa and Phuong Thao (2017); Suriadi et al. (2022) |
| Product design | The measures and tools to create a product, its form, and packaging | Fabric, type font | Grohmann et al. (2013); Lee (2022) |
| Extension fit | Whether the consumer accepts a brand extension as being a suitable member for the brand category (Diamantopoulos et al. 2005) | Extension fit, sponsorship category relatedness | Chien et al. (2011); Diamantopoulos et al. (2005) |
| Relationship-attribute related antecedents | | | |
| Prior relationship experience | Consumer's prior cognitions and behavioral responses triggered by general and specific brand-related stimuli (Diamantopoulos et al. 2005) | Brand experience, service quality | Kwong and Candinegara (2014); Perepelkin and Di Zhang (2014) |

factors from the two relationship partners, exhibit large positive effects ($r_{\text{personality}} = 0.462$, $r_{\text{branding}} = 0.405$).

When we compare findings from this meta-analysis with those from Eisend and Stokburger-Sauer's (2013a), both analyses consistently indicate that brand advertising-related antecedents (i.e., advertising complexity, advertising consistency, hedonic benefit claim) and consumer self-confidence have varying effects across five dimensions. In addition, the effect of consumer personality on brand personality perception is generalizable across all dimensions in both studies. However, while Eisend and Stokburger-Sauer (2013a) find the effects of branding varying across all dimensions, our analysis shows a consistent positive effect across all dimensions.

We examined publication bias using Egger's regression test (Table 5). A negative sign indicates that with increasing standard error (i.e., decreasing sample size), the effect sizes become larger, supporting small-study effects. These effects can occur when nonsignificant effects in small studies are lacking (i.e., publication bias), but can be due to other reasons as well, such

as differences in study designs in small versus large studies or pure chance. Moreover, the tests have low power when the number of effect sizes is small, as in most cases in our analysis (Sterne et al. 2000). Our results show that only one relationship (advertising complexity's effect on sophistication) has a negative z -value and a p -value < 0.05 , suggesting that systematic publication bias is unlikely to be an issue of concern. Table 5 shows Q -statistic results, with significant heterogeneity in most relationships, except for the impact of advertising consistency on ruggedness.

4.2 | Results of Moderator Analysis

Table 6 presents moderator analysis results, examining four types of moderators across consumer-related, brand-related, and relationship-attribute related antecedents. For consumer-related antecedents, contrary to our expectations, the effects of consumer personality on brand personality perception does not differ significantly between students and general samples. However, products with high (vs. low) self-signaling potential

TABLE 4 | Operationalization of moderators.

| Moderator | Coding | Value | Based on |
|--------------------|--|--|---|
| Students | Captures whether the data are collected from students or the general population | 1 = students 0 = general population | Liu-Thompkins et al. (2022) |
| Experience | Represents whether the product is more an experience product or a search product | 1 = experience 0 = search | Velasco et al. (2021) |
| Self-signaling | Represents the level of self-signaling potential of a product | 1 = high 0 = low | Dixon and Mikolon (2021); Velasco et al. (2021) |
| Individualism | Assesses on a country level whether people's behavior is more influenced by self-centered (individualistic) tendencies or by group-related (collectivist) attributes | Continuous, ranging from 0 (low) to 100 (high) individualism | Hofstede (2001) |
| Services | Captures whether the study was conducted in a services or goods context | 1 = services 0 = goods | Eisend and Hermann (2020) |
| Study design | Assesses whether the paper employs experiments or surveys | 1 = experiment 0 = survey | Valentini et al. (2020) |
| Journal discipline | Captures whether the paper is published in marketing or other journals based on the CABS Academic Journal Guide | 1 = marketing journals 0 = other journals | Eshghi (2022) |

exhibit a stronger effect of consumer personality on brand personality perception ($\beta_{\text{self}} = 0.654$, $p = 0.005$), which aligns with our expectations. Interestingly, this effect does not differ between services and goods. When considering culture as a context-related factor, we find that consumer personality has a stronger impact in collectivist societies than in individualistic societies ($\beta_{\text{individualism}} = -0.009$, $p = 0.043$), in alignment with our expectations.

Shifting to brand-related antecedents, the impact of brand advertising on brand personality perception does not differ significantly between categories, contrary to initial expectations. However, branding has a stronger effect for experience products than for search products ($\beta_{\text{experience}} = 0.562$, $p = 0.001$), supporting the logic for the effect of a brand-related moderator. Moreover, in alignment with our expectations of context as a moderator, branding is also a more important antecedent in collectivist cultures than in individualistic ones ($\beta_{\text{individualism}} = -0.006$, $p = 0.004$). Unexpectedly, the influence of branding is comparable across students and the general population, between products with high and low self-signaling potential, and between services and goods. When it comes to product design, the findings align with expectations; for consumer-related moderators, we find that product design has stronger effect on brand personality perception in student samples than in the general population ($\beta_{\text{design}} = 0.343$, $p = 0.008$). For brand-related moderators, product design has a stronger effect on brand personality for products with a high (vs. low) self-signaling potential ($\beta_{\text{self}} = 0.209$, $p = 0.048$). In addition, product design has a stronger impact in collectivist than individualistic cultures ($\beta_{\text{individualism}} = -0.296$, $p = 0.017$), thus the effect is also context dependent.

For relationship-attribute related antecedents, prior relationship experience has a stronger effect on brand personality for services than for goods ($\beta_{\text{services}} = 0.215$, $p = 0.004$).

Unexpectedly, this effect does not differ between experience and search products or between individualistic and collectivist cultures.

Finally, for all five antecedent relationships tested, other moderators (i.e., study design and journal discipline) do not significantly influence the results, indicating that brand personality formation is consistent across research methods and fields.

5 | Discussion

This study updates Eisend and Stokburger-Sauer's (2013a) meta-analysis of brand personality antecedents and examines new moderators. This update was needed because the brand personality literature has expanded and evolved since the original study, allowing for novel findings, particularly from the moderator analysis (Steel et al. 2021). By synthesizing data from 95 papers spanning 28 years, this study uses consumer-brand relationship theory as an organizing framework to understand the antecedents of brand personality, providing a more coherent and comprehensive understanding of brand personality formation. Moreover, we systematically test key moderators that have been largely overlooked in prior studies.

5.1 | Theoretical Implications

This study contributes to the understanding of brand personality in multiple ways. First, the updated meta-analysis provides a theory-led organizing framework of brand personality antecedents and empirical generalizations by exploring how factors shape brand personality dimensions. Based on consumer-brand relationship theory, we consolidate findings across four categories, namely consumer-related, brand-related, relationship

TABLE 5 | Results of bivariate relationship analysis for the antecedents of brand personality.

| Variables | | | Effect size | | | | | Egger's test | | | | | |
|-----------|--------------------------|-------------------|-------------|------------------------|---------|--|--------------------|--------------|-------|--------------|-------------|---------|---------|
| Number | Independent | Dependent | K | Number of effect sizes | Total N | r from Eisend and Stokburger-Sauer (2013a) | | | LCI | UCI | Homogeneity | Z-value | p-value |
| | | | | | | r | | | | | | | |
| 1.1 | Consumer personality | Sincerity | 12 | 97 | 4764 | 0.069* | 0.527*** | 0.317 | 0.736 | 18046.192*** | 3.853 | 0.000 | |
| 1.2 | Consumer personality | Competence | 13 | 97 | 4814 | 0.151* | 0.457*** | 0.268 | 0.647 | 17046.627*** | 4.203 | 0.000 | |
| 1.3 | Consumer personality | Excitement | 13 | 96 | 3304 | 0.142* | 0.506*** | 0.302 | 0.709 | 14875.459*** | 4.235 | 0.000 | |
| 1.4 | Consumer personality | Sophistication | 10 | 86 | 2519 | 0.140** | 0.439*** | 0.222 | 0.655 | 13740.362*** | 3.639 | 0.000 | |
| 1.5 | Consumer personality | Ruggedness | 8 | 80 | 3267 | 0.189* | 0.432** | 0.172 | 0.693 | 17414.315*** | 2.497 | 0.013 | |
| 1.6 | Consumer personality | Brand personality | 56 | 456 | 18,668 | 0.100*** | 0.462*** | 0.297 | 0.628 | 81125.851*** | 4.386 | 0.000 | |
| 2.1 | Consumer self-confidence | Sincerity | 2 | 7 | 382 | 0.054 | 0.193 | -0.117 | 0.503 | 125.571*** | 3.141 | 0.026 | |
| 2.2 | Consumer self-confidence | Competence | 2 | 7 | 382 | 0.105 | 0.274 | -0.112 | 0.659 | 436.778*** | 8.922 | 0.000 | |
| 2.3 | Consumer self-confidence | Excitement | 2 | 7 | 382 | 0.057 | 0.225 | -0.157 | 0.606 | 566.469*** | 8.424 | 0.000 | |
| 2.4 | Consumer self-confidence | Sophistication | 2 | 7 | 382 | 0.124*** | 0.205* | 0.017 | 0.392 | 39.612*** | 2.050 | 0.096 | |
| 2.5 | Consumer self-confidence | Ruggedness | 1 | 3 | 225 | 0.046 | 0.046 | -0.030 | 0.121 | — | — | — | |
| 2.6 | Consumer self-confidence | Brand personality | 5 | 31 | 1753 | 0.077*** | 0.212 | -0.064 | 0.488 | 1818.372*** | 13.29 | 0.000 | |
| 3.1 | Ad complexity | Sincerity | 4 | 9 | 945 | 0.288** | 0.240* | 0.042 | 0.439 | 58.469*** | -0.606 | 0.545 | |
| 3.2 | Ad complexity | Competence | 5 | 10 | 1449 | 0.372*** | 0.204*** | 0.112 | 0.296 | 18.377* | 1.608 | 0.108 | |
| 3.3 | Ad complexity | Excitement | 4 | 9 | 1114 | 0.108 | 0.276 [†] | -0.007 | 0.559 | 195.771*** | -0.124 | 0.902 | |
| 3.4 | Ad complexity | Sophistication | 4 | 9 | 945 | -0.034 | 0.342* | 0.068 | 0.616 | 168.475*** | -2.128 | 0.033 | |
| 3.5 | Ad complexity | Ruggedness | 1 | 1 | 295 | -0.072 | 0.441 | — | — | — | — | — | |

(Continues)

TABLE 5 | (Continued)

| Variables | | | Effect size | | | | | Egger's test | | | | |
|-----------|-----------------------|-------------------|-------------|------------------------|---------|--|----------|--------------|-------------|--------------|---------|-------|
| Number | Independent | Dependent | K | Number of effect sizes | Total N | r from Eisend and Stokburger-Sauer (2013a) | | | Homogeneity | Z-value | p-value | |
| | | | | | | r | LCI | UCI | | | | |
| 3.6 | Ad complexity | Brand personality | 18 | 38 | 4748 | 0.153 | 0.265*** | 0.122 | 0.408 | 542.594*** | 0.382 | 0.703 |
| 4.1 | Ad consistency | Sincerity | 8 | 17 | 1906 | 0.018 | 0.210* | 0.050 | 0.369 | 796.528*** | −1.060 | 0.289 |
| 4.2 | Ad consistency | Competence | 6 | 13 | 1552 | 0.137 | 0.284* | 0.068 | 0.500 | 307.709*** | −0.418 | 0.676 |
| 4.3 | Ad consistency | Excitement | 5 | 12 | 1135 | 0.124 | 0.124† | −0.026 | 0.275 | 46.665*** | 0.936 | 0.349 |
| 4.4 | Ad consistency | Sophistication | 5 | 13 | 1295 | 0.194*** | 0.154* | 0.018 | 0.291 | 48.248*** | 1.188 | 0.235 |
| 4.5 | Ad consistency | Ruggedness | 3 | 9 | 947 | 0.000 | 0.139** | 0.036 | 0.242 | 13.368 | 0.419 | 0.675 |
| 4.6 | Ad consistency | Brand personality | 27 | 64 | 6835 | 0.135** | 0.258*** | 0.137 | 0.379 | 1723.459*** | 0.876 | 0.381 |
| 5.1 | Hedonic benefit claim | Sincerity | 3 | 13 | 723 | 0.666*** | 0.274 | −0.009 | 0.556 | 136.272*** | 1.921 | 0.055 |
| 5.2 | Hedonic benefit claim | Somptence | 3 | 13 | 723 | 0.772* | 0.259† | −0.022 | 0.540 | 76.634*** | 1.708 | 0.088 |
| 5.3 | Hedonic benefit claim | Excitement | 3 | 13 | 723 | −0.137 | 0.224 | −0.076 | 0.525 | 81.798*** | 0.866 | 0.387 |
| 5.4 | Hedonic benefit claim | Sophistication | 5 | 18 | 1504 | 0.885*** | 0.329*** | 0.179 | 0.480 | 263.987*** | 2.359 | 0.018 |
| 5.5 | Hedonic benefit claim | Ruggedness | 1 | 10 | 268 | — | 0.106*** | 0.044 | 0.167 | — | — | — |
| 5.6 | Hedonic benefit claim | Brand personality | 15 | 67 | 3941 | 0.648*** | 0.290*** | 0.161 | 0.420 | 658.698*** | 3.649 | 0.000 |
| 6.1 | Branding | Sincerity | 16 | 23 | 5199 | 0.237*** | 0.484*** | 0.322 | 0.646 | 2004.649*** | 13.541 | 0.000 |
| 6.2 | Branding | Competence | 13 | 19 | 4671 | 0.230* | 0.450*** | 0.301 | 0.600 | 1382.466*** | 5.591 | 0.000 |
| 6.3 | Branding | Excitement | 14 | 24 | 4587 | 0.029 | 0.451*** | 0.343 | 0.559 | 1080.746*** | 9.845 | 0.000 |
| 6.4 | Branding | Sophistication | 14 | 27 | 4933 | −0.038 | 0.364*** | 0.197 | 0.531 | 3726.502*** | 1.370 | 0.171 |
| 6.5 | Branding | Ruggedness | 12 | 19 | 3959 | 0.256*** | 0.462*** | 0.298 | 0.626 | 2811.801*** | 12.625 | 0.000 |
| 6.6 | Branding | Brand personality | 63 | 112 | 22,321 | 0.128*** | 0.405*** | 0.309 | 0.502 | 21906.407*** | 13.118 | 0.000 |
| 7.1 | Product design | Sincerity | 11 | 56 | 3492 | 0.003 | 0.150*** | 0.070 | 0.230 | 16757.731*** | 5.641 | 0.000 |

(Continues)

TABLE 5 | (Continued)

| Variables | | | | Effect size | | | | | Egger's test | | | | |
|-----------|-------------------------------|-------------------|----|------------------------|---------|--|----------|-------|--------------|-------|---------------|---------|---------|
| Number | Independent | Dependent | K | Number of effect sizes | Total N | r from Eisend and Stokburger-Sauer (2013a) | | | LCI | UCI | Homogeneity | Z-value | p-value |
| 7.2 | Product design | Competence | 10 | 56 | 3461 | 0.152 | 0.084* | 0.018 | 0.149 | 0.149 | 1341.043*** | 4.797 | 0.000 |
| 7.3 | Product design | Excitement | 7 | 52 | 2977 | −0.133 | 0.121*** | 0.052 | 0.189 | 0.189 | 2135.060*** | 2.134 | 0.033 |
| 7.4 | Product design | Sophistication | 10 | 57 | 3563 | −0.013 | 0.209*** | 0.105 | 0.312 | 0.312 | 4301.164*** | 2.220 | 0.026 |
| 7.5 | Product design | Ruggedness | 10 | 54 | 3453 | −0.021 | 0.1114* | 0.017 | 0.211 | 0.211 | 6228.966*** | 2.156 | 0.031 |
| 7.6 | Product design | Brand personality | 48 | 275 | 16,946 | −0.011 | 0.172*** | 0.112 | 0.232 | 0.232 | 85154.560*** | 5.253 | 0.000 |
| 8.1 | Extension fit | Sincerity | 3 | 7 | 862 | — | 0.245* | 0.069 | 0.421 | 0.421 | 33.598*** | −0.567 | 0.571 |
| 8.2 | Extension fit | Competence | 2 | 6 | 712 | — | 0.198* | 0.001 | 0.396 | 0.396 | 23.801*** | −1.085 | 0.278 |
| 8.3 | Extension fit | Excitement | 3 | 7 | 814 | — | 0.280** | 0.163 | 0.398 | 0.398 | 11.746* | 1.069 | 0.285 |
| 8.4 | Extension fit | Sophistication | 2 | 6 | 712 | — | 0.242* | 0.080 | 0.405 | 0.405 | 19.359** | 0.380 | 0.704 |
| 8.5 | Extension fit | Ruggedness | 2 | 6 | 712 | — | 0.369* | 0.076 | 0.661 | 0.661 | 78.852*** | −0.128 | 0.898 |
| 8.6 | Extension fit | Brand personality | 12 | 32 | 3812 | — | 0.271*** | 0.155 | 0.387 | 0.387 | 238.490*** | 1.059 | 0.290 |
| 9.1 | Prior relationship experience | Sincerity | 26 | 66 | 20,779 | — | 0.350*** | 0.270 | 0.429 | 0.429 | 29505.391*** | 9.209 | 0.000 |
| 9.2 | Prior relationship experience | Competence | 27 | 90 | 18,344 | — | 0.338*** | 0.234 | 0.442 | 0.442 | 40627.112*** | 7.209 | 0.000 |
| 9.3 | Prior relationship experience | Excitement | 24 | 66 | 18,095 | — | 0.291*** | 0.206 | 0.375 | 0.375 | 12926.854*** | 3.693 | 0.000 |
| 9.4 | Prior relationship experience | Sophistication | 25 | 77 | 20,744 | — | 0.308*** | 0.238 | 0.378 | 0.378 | 10158.444*** | 5.374 | 0.000 |
| 9.5 | Prior relationship experience | Ruggedness | 21 | 67 | 18,795 | — | 0.286*** | 0.191 | 0.381 | 0.381 | 36428.039*** | 6.103 | 0.000 |
| 9.6 | Prior relationship experience | Brand personality | 37 | 366 | 34,827 | — | 0.308*** | 0.249 | 0.366 | 0.366 | 185772.188*** | 1.528 | 0.000 |

Note: Calculations are conducted only when there are at least two independent effect sizes for a relationship (Rosengren et al., 2020). k = number of papers; total N = accumulated sample size of the studies; r = correlation coefficient, LCI/UCI = lower/upper limit of the 95% confidence interval. Q-value = homogeneity test; z-value = Egger's regression test statistic; p-value = corresponding p-value of Egger's regression test. A dash (—) indicates the condition is not met. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

TABLE 6 | Moderator analysis results related to the antecedents of brand personality.

| | Consumer personality-brand personality (<i>k</i> = 456) | | | | Brand advertising-brand personality (<i>k</i> = 153) | | | | Branding-brand personality (<i>k</i> = 94) | | | | | | |
|--------------------|--|----------------|-------|--------|---|-------------|--------------------|-------|---|-------|-------------|--------------------|-------|--------|-------|
| | Expectation | Estimate | se | t | p | Expectation | Estimate | se | t | p | Expectation | Estimate | se | t | p |
| intercept | | 0.337 | 0.216 | 1.563 | 0.119 | | 0.483 [†] | 0.283 | 1.705 | 0.090 | | 0.343 [†] | 0.194 | 1.767 | 0.081 |
| students | + | -0.038 | 0.184 | -0.204 | 0.839 | non | -0.152 | 0.116 | -1.314 | 0.191 | + | 0.255 [†] | 0.140 | 1.819 | 0.072 |
| experience | Non | -0.102 | 0.195 | -0.523 | 0.601 | non | 0.049 | 0.214 | 0.230 | 0.819 | + | 0.562** | 0.169 | 3.326 | 0.001 |
| self-signaling | + | 0.654** | 0.229 | 2.854 | 0.005 | + | -0.014 | 0.062 | -0.228 | 0.820 | + | -0.030 | 0.101 | -0.295 | 0.768 |
| individualism | — | -0.009* | 0.005 | -2.027 | 0.043 | non | -0.003 | 0.002 | -1.561 | 0.121 | — | -0.006** | 0.002 | -2.998 | 0.004 |
| services | Non | 0.299 | 0.188 | 1.593 | 0.112 | + | -0.091 | 0.119 | -0.764 | 0.446 | + | -0.102 | 0.100 | -1.018 | 0.311 |
| study design | + | -0.401 | 0.257 | -1.56 | 0.119 | — | 0.094 | 0.143 | 0.661 | 0.510 | + | -0.138 | 0.135 | -1.020 | 0.311 |
| journal discipline | + | 0.254 | 0.183 | 1.391 | 0.165 | + | -0.044 | 0.132 | -0.335 | 0.738 | + | 0.037 | 0.147 | 0.249 | 0.804 |
| max GVIF | | 2.280 | | | | | 1.486 | | | | | 1.988 | | | |

| | Product design-brand personality (<i>k</i> = 102) | | | | Prior relationship experience-brand personality (<i>k</i> = 312) | | | | | |
|--------------------|--|----------------|--------|--------|---|-------------|--------------------|-------|--------|-------|
| | Expectation | Estimate | se | t | p | Expectation | Estimate | se | t | p |
| intercept | | 26.934* | 11.041 | 2.439 | 0.017 | | 0.199 [†] | 0.115 | 1.722 | 0.086 |
| students | + | 0.343** | 0.126 | 2.729 | 0.008 | Non | 0.000 | 0.076 | -0.004 | 0.997 |
| experience | Non | 0.015 | 0.056 | 0.259 | 0.796 | + | 0.046 | 0.075 | 0.615 | 0.539 |
| self-signaling | + | 0.209* | 0.104 | 2.004 | 0.048 | Non | -0.042 | 0.064 | -0.664 | 0.507 |
| individualism | — | -0.296* | 0.122 | -2.429 | 0.017 | — | -0.001 | 0.001 | -0.635 | 0.526 |
| services | Non | — | — | — | — | + | 0.215** | 0.075 | 2.886 | 0.004 |
| study design | + | -0.091 | 0.211 | -0.431 | 0.667 | + | 0.004 | 0.087 | 0.046 | 0.964 |
| journal discipline | + | -0.064 | 0.137 | -0.465 | 0.643 | + | 0.048 | 0.065 | 0.736 | 0.462 |
| max GVIF | | 1.727 | | | | | 1.183 | | | |

Note: Results highlighted in bold are statistically significant with a *p*-value below 0.05.
[†]*p* < 0.05; ^{*}*p* < 0.01; ^{**}*p* < 0.001; ^{***}*p* < 0.0001.

attributes, and context-related antecedents. The different antecedent frameworks suggested in the literature were built inductively and thus vary across studies (Aly et al. 2017; Eisend and Stokburger-Sauer 2013a; Ghorbani et al. 2022; Saeed et al. 2022). Such an inductive approach also does not permit identifying research blind spots that were overlooked in the pertinent literature. Relying on a deductive approach based on consumer-brand relationship theory (Alvarez et al. 2023; Eiriz and Wilson 2006; Fournier 1998), we recognize such a blind spot in the current brand personality literature, i.e., context-related antecedents. While previous studies have advocated the role of context, they are often only set in a specific context without testing empirically how contextual differences affect brand personality (e.g., Ghorbani et al. 2022).

In terms of empirical generalizations, Table 7 summarizes which antecedents consistently affect all dimensions and which do not. Moreover, we identify shifts in convergence and divergence from Eisend and Stokburger-Sauer (2013a). Antecedents like branding, product design, and prior experience, consistently enhance all dimensions. The reason for such convergence could be that these antecedents are fundamental building blocks of a brand's personality. For example, effective branding creates a cohesive and clear image, which holds similar importance regardless of whether a brand's personality is sincere or rugged. However, antecedents like ad complexity and consumer self-confidence have more dimension-specific effects. For brands characterized by sophistication and luxury, such as high-end cars, complex ads enhance sophistication through intricate visuals and elaborate storytelling, while for exciting brands (e.g., energy drinks), complexity dilutes their energetic and vibrant appeal.

The finding that advertising factors such as ad consistency do not impact all dimensions consistently underscores the need for tailored personality-building strategies. This is in line with De Gauquier et al. (2019), who suggest that the impact of innovative advertising technologies (i.e., virtual reality) differs across brand personality dimensions. Furthermore, while product design did not influence all dimensions in Eisend and Stokburger-Sauer (2013a), our analysis shows a consistent effect. This shift likely reflects the increasing visibility of product design on digital-media platforms like Instagram, where product design is more frequently shared and seen. Moreover, technologies like 3D printing provide greater creative capabilities than traditional methods (Dong et al. 2022), enhancing design's role in conveying brand personality traits across all dimensions more uniformly.

Second, this study advances the brand personality literature by demonstrating how consumer-related and brand-related moderators shape brand personality antecedents. By examining moderators from both sides of the consumer-brand relationship, we provide a deeper understanding of how these factors influence brand personality formation. For consumer-related moderators, we find that the effect of product design is stronger for students than for the general population. This suggests that younger consumers may be more impressionable to design efforts, highlighting the importance of distinguishing how brand personality antecedents operate across different consumer segments. This finding also suggests that antecedents and

moderators of brand personality do not necessarily need to relate to the same group (e.g., consumers or brands), but can interact across categories.

In terms of brand-related moderators, we find that experience products (vs. search products) enhance the effect of branding as an antecedent of brand personality aligning with consumer trust theory (Bock et al. 2012). Since the key attributes of experience products are not readily observable before purchase, consumers rely more on branding as a heuristic to reduce uncertainty (Erdem and Swait 2001). Additionally, our findings reveal that prior consumer experiences are equally important for experience and search products, likely due to digital technologies transforming information-gathering behaviors. Consumers now spend similar amounts of time researching both product types (Huang et al. 2009), which may affect how prior experiences shape brand personality perceptions.

For products with high self-signaling potential, we find that they enhance the effect of consumer personality on brand personality perceptions. This result relates to Malär et al.'s (2011) finding that the effect of congruence between consumer and brand personality on brand attachment is enhanced for high-involvement products. Our findings suggest that such congruence may actually be more likely for high self-signaling products because consumer personality shapes brand personality perceptions. Furthermore, we find that product self-signaling potential strengthens the effect of product design on brand personality but does not significantly influence other brand-related antecedents, such as advertising or branding. This finding aligns with Dixon and Mikolon's (2021) argument that consumers select products with high self-signaling potential to express their identity. While Dixon and Mikolon's (2021) identify product type as a relevant variable for this process, our study extends this insight by identifying product design as a key mechanism through which brand personality is conveyed in such contexts.

Third, this study contributes to the international marketing literature by demonstrating how context-related moderators influence the effects of brand personality antecedents. In particular, we examine individualism–collectivism as a moderator, which affects three crucial brand personality antecedents, more as any other moderator in our study. We find that consumer personality, branding, and product design have stronger effects in collectivist cultures than in individualistic cultures, highlighting the importance of cultural nuances. Culture shapes consumer perceptions (Roth 1995), and Hofstede (2001) emphasizes that collectivism versus individualism is a key factor in understanding cultural differences. In collectivist cultures, values such as community and harmony are prioritized over individualistic pursuits (Moon et al. 2008). For example, East-Asian consumers exhibit a stronger sense of shared values than North American consumers (Briley and Wyer 2002), making brand identity formation more cohesive. Communal validation enhances a brand's trustworthiness and credibility (Keller and Lehmann 2006), making collectivistic societies an effective context for brand personality development. Conversely, in individualistic cultures, where independent thinking prevails (Power et al. 2010), diverse personal values may dilute brand messaging, weakening the consistency of brand personality perceptions.

TABLE 7 | Comparison of antecedent effects consistent and particular across brand personality dimensions in prior and the current meta-analysis.

| Category | Eisend and Stokburger-Sauer (2013a) | Current research |
|---|--|--|
| Consistent across all brand personality dimensions | Consumer personality (+) Product design (+) | Consumer personality (+) Branding (+) Product design (+) Extension fit (+) Prior relationship experience (+) |
| Applying to particular brand personality dimensions | Consumer self-confidence (+) for sophistication Brand advertising complexity (+) for sincerity, competence Brand advertising consistency (+) for sophistication Hedonic benefit claim (+) for sincerity, competence, sophistication Branding (+) for sincerity, competence, ruggedness | Consumer self-confidence (+) for sophistication Brand advertising complexity (+) for sincerity, competence, sophistication Brand advertising consistency (+) for sincerity, competence, sophistication, ruggedness Hedonic benefit claim (+) for sophistication, ruggedness |

Furthermore, contextual influences on brand personality formation extend beyond cultural differences. Our study highlights the role of other contextual factors, particularly the distinction between services and goods. Whereas branding and advertising remain equally important for goods and services, prior relationship experience plays a stronger role in shaping brand personality for services than for goods, reinforcing the importance of intangible relational factors in service-based interactions (Ding and Keh 2017). These findings emphasize the importance of customer experience management and positive word-of-mouth in strengthening brand personality for services. Extending this perspective, future research should further explore how other contextual factors such as the digital (vs. physical) environment or economic cycles (Priporas et al. 2020) influence brand personality antecedents. By broadening the scope of context-related moderators, scholars can develop a more comprehensive understanding of how brand personality evolves under different environmental conditions.

5.2 | Managerial Implications

Brand personality influences key performance indicators for firms, such as brand equity (Su and Tong 2015) and loyalty (Sindhu et al. 2021), making it essential for managers to understand its antecedents. To facilitate this understanding, we provide three key insights. First, we distil a practical framework to cultivate brand personality. While consumer personality related antecedents may be less controllable for managers, they are an important consideration for consumer segmentation. Branding-related factors affect all brand personality dimensions, but understanding nuances is important. For example, hedonic benefit claims primarily enhance sophistication and ruggedness, suggesting that this advertising strategy would be more useful to position sophisticated (e.g., Mercedes-Benz) or rugged (e.g., Jeep) automotive brands but not sincere ones (e.g., Volvo).

Second, this study offers practical guidance by emphasizing how various factors shape antecedents' effects on brand personality. Managers should weigh brand-related factors, such as

the distinctions between experience and search products, as well as the self-signaling potential of products, alongside context-related factors like services versus goods. The study reveals that experience (vs. search) products facilitate the effect of branding on brand personality. This has implications for experience-based industries like the restaurant industry, where consistent branding (e.g., ensuring that all brand interactions reflect the same core values) would be more effective to provide essential assurances (Erdem and Swait 2001) and shape brand personality. This pattern suggests that branding investments yield greater returns in experience-driven categories, where symbolic value and emotional engagement are central to consumer decision-making. For example, a high-end restaurant can use cohesive visual branding across menus and interior design elements to reinforce a luxurious and sophisticated brand personality. By focusing on consistency and aligning branding with brand heritage or values, brands can further enhance consumer engagement and emotional connections. Starbucks, for example, effectively uses consistent branding elements such as its iconic logo and tone of communication across its stores, reinforcing a warm, inviting brand personality that resonates with customer expectations and fosters strong brand loyalty. In contrast, while branding also plays a role in shaping brand personality for search products, its influence is less pronounced. For example, the material and sturdiness of furniture can be assessed before purchase, making branding a less important antecedent to build symbolic imagery, including brand personality, for this product category. This distinction highlights the importance of aligning branding strategies with the specific characteristics of experience versus search products.

Third, when building brand personality in global markets, managers should adapt strategies to context-related factors such as cultural differences. According to our findings, collectivism facilitates brand personality building, especially related to branding, product design, and consumer personality antecedents, suggesting product differentiation across markets. This underscores the importance of design elements that resonate with group identity and cultural values when targeting collectivist markets, where such symbolic cues play a stronger role in shaping brand meaning. As

such, Western brands should not simply rely on a standardized marketing mix but use an adapted marketing approach when expanding to collectivist countries to benefit from stronger antecedents of brand personality in these countries. Returning to the Harley-Davidson example, ruggedness could be built more effectively in collectivist markets if Harley-Davidson focuses on collective identity and tap the brotherhood/sisterhood of Harley riders to strengthen brand personality in collectivist cultures. Moreover, in collectivist countries like Japan, investing in product design that reflects collective values (e.g., color schemes or culturally resonant symbols) can enhance brand perception. For instance, a beverage brand could incorporate traditional Japanese aesthetics, such as cherry blossoms or calligraphy-inspired designs, to create an emotional connection with consumers who value cultural heritage and community identity. These culturally aligned designs reinforce the symbolic meaning of the brand and help establish a strong brand personality in collectivist cultures. In contrast, this approach may be less effective in individualistic cultures, where consumers prioritize self-expression and differentiation. In individualistic cultures, product design strategies have a weaker effect on brand personality; nevertheless, design is important and could focus on personalization and innovation to resonate with consumers' desire for uniqueness and individual achievement. For example, a beverage brand could offer customizable packaging that allows consumers to add their names or personalized messages, emphasizing their individuality. These approaches highlight the importance of tailoring product differentiation strategies to cultural preferences.

5.3 | Limitations and Further Research

This study has limitations to be addressed in future studies. First, although this study highlights the importance of product-strategy factors in shaping brand personality, we explored only five relationships due to data availability. Future work should examine other relationships as new studies emerge, offering deeper insights.

Second, most studies focus on main effects, overlooking variance-causing conditions. We find that brand personality antecedents vary with product-strategy and cultural aspects, emphasizing the need to understand these factors. Follow-up research might identify key antecedents and explore additional factors when more data become available. Among these additional factors, emerging antecedents such as digital branding practices, including influencer marketing and social media engagement, are becoming increasingly relevant in shaping brand personality. These developments reflect shifts in how consumers interact with brands in digital environments and warrant greater scholarly attention (Ghorbani et al. 2022). Future research could examine their influence to better align brand personality theory with contemporary marketing practices. This would enhance the framework's relevance in today's branding contexts. Experiments could also clarify causal links between brand personality and its antecedents, explaining why certain antecedents differ.

Third, this study only includes papers using Aaker. (1997) scale and/or dimensions. While widely recognized, Aaker's model may overlook country-specific dimensions (Aaker et al. 2001). We excluded 3.54% of papers using different frameworks and,

due to limited data, could not analyze these dimensions. Future research should explore the generalizability of brand personality dimensions beyond Aaker. (1997) framework.

Fourth, this study focuses on brand-related and context-related moderators, such as services versus goods, experience versus search products, and high versus low self-signaling, which are grounded in consumer-brand relationship theory and supported by robust analysis. These moderators offer valuable insights into how brand personality is shaped by product nature. However, we acknowledge the exclusion of other relevant moderating variables, such as consumer involvement and hedonic versus utilitarian products, which could provide alternative perspectives on how the antecedents of brand personality function across different product strategies. Involvement, being a consumer-related trait that varies individually, is difficult to assess in a meta-analysis due to the lack of individual-level data. Likewise, demographic (e.g., age, gender) or other regional factors (e.g., market maturity) are often underreported in primary studies and could not be consistently included. Future studies should explore these additional moderators to enrich our understanding of the conditions that influence brand personality, providing a more comprehensive view of how various product types and consumer experiences shape brand personality formation.

Fifth, this study examines four types of moderators to understand how the antecedents of brand personality vary under different conditions, a key limitation is the exclusion of relationship-related moderators. Given the reliance on aggregated data, these factors are difficult to incorporate into a meta-analysis. In addition, most primary studies rely on cross-sectional data, limiting the ability to track how brand personality evolves over time. However, relationship-related elements such as the duration of consumer-brand interactions or the depth of emotional attachment likely play a crucial role in shaping brand personality. Due to data constraints, these variables could not be included in our analysis. Future research could adopt alternative methodologies, such as longitudinal studies or experimental designs, to explore how relationship-related factors moderate brand personality formation. For example, the length of a consumer's relationship with a brand may influence the stability or malleability of brand personality perceptions over time. More broadly, longitudinal designs can help track how brand personality itself evolves over time in response to sustained marketing activities, cultural shifts, or changes in digital engagement. Investigating these relationship-related moderators through alternative research approaches could offer a more nuanced understanding of how brand personality develops across different relationship stages, providing deeper insights beyond the constraints of aggregated meta-analytic data

Finally, this study focuses on positive brand personality traits based on Aaker. (1997) framework, which remains dominant in the existing literature. However, recent developments in branding research have drawn increasing attention to negative brand personality dimensions, such as brand narcissism and Machiavellianism (Malär and Giuffredi-Kähr 2024). These traits may also shape consumer perceptions and responses. Future research could investigate the antecedents of negative brand

personality attributes to provide a more comprehensive understanding of how and why unfavorable brand perceptions emerge and evolve.

Data Availability Statement

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

Endnotes

¹Some constructs are unclear because the coding is not provided in many studies or because their coding is inconsistently reported across studies. For example, Chung and Park (2017) report correlations between gender and brand personality dimensions, such as sincerity, but do not specify how gender is coded (e.g., whether male = 0 and female = 1, or vice versa). In contrast, Shehu et al. (2016) explicitly define their coding (e.g., gender coded as 1 = male). This lack of uniformity across studies poses challenges for comparing results and drawing meaningful conclusions. Similar inconsistencies are observed in the treatment of age as a variable. For instance, Chan-Olmsted and Cha (2008) categorize age into predefined groups (e.g., 45–54 years) when examining its relationship with competence, whereas Chung and Park (2017) include age in their correlation matrix without specifying how it is measured or categorized. To ensure consistency and comparability across studies, these constructs were deemed unsuitable for inclusion in this meta-analysis.

²Country-of-origin effects are known to vary widely depending on the origin of consumers, the origin of brands, the product category, and the country of brand or manufacturing origin. We identified only five papers with country-of-origin related information. However, due to unclear reporting and variations across the above categories, the results could not be aggregated in a meaningful way.

³We did not identify relationship-attribute related moderators because moderators in a meta-analysis are measured based on an aggregated study level. This does not align well with the nature of relationship attributes that tend to vary at an individual level.

⁴This study examines moderator effects on five relationships (advertising, branding, product design, consumer personality, and prior experience), as these are the only ones with sufficient effect sizes for a robust analysis based on prescreening.

⁵Specific journals included *Journal of Marketing*, *Journal of Marketing Research*, *Marketing Science*, *Journal of the Academy of Marketing Science*, *International Journal of Research in Marketing*, *Journal of International Business Studies*, *Journal of Business Research*, *Journal of Travel Research*, *Tourism Management*, *Journal of Consumer Research*, *Journal of Consumer Psychology*, *Psychology & Marketing*, *Journal of Applied Psychology*, and *Journal of Personality and Social Psychology*.

⁶To avoid duplication, we followed Eisend and Tarrahi (2022). A “paper” is defined as a document containing original analysis by the same authors, such as journal articles or conference papers. A single paper may include multiple data sets (e.g., a paper with several experiments). Some data sets may appear in more than one paper (e.g., in both a conference paper and a journal article). This analysis is based on data sets.

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