Design variables and their reflection on industrial product personality and its connection to the user

Jasim Khazaal Baheel [a1]

[a] Design Department/ College of Fine Arts/ University of Baghdad

A R T I C L E I N F O

A B S T R A C T

This study examines how design variables contribute to the unique identity of industrial products, focusing on how these elements interact to create a distinct product personality. It also investigates the relationship between product and user personalities, defining the former as the inherent characteristics and features of industrial products that reflect expressive traits of the user. The research identifies key factors shaping product personality, including aesthetics, form, semiotics, and technological aspects. A questionnaire distributed among design students at the College of Fine Arts, University of Baghdad, highlights the significant role of aesthetic design and brand identity in aligning products with the user's personal taste and preferences. The findings suggest that brand, particularly in the context of mobile phones, is a crucial determinant in user selection, indicating its importance in adding value to the product and influencing consumer choice.

[1]*Corresponding author.*
E-mail address: gasim.khazaal@cofarts.uobaghdad.edu.iq

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1. Introduction

As the market for consumer products has broadened, these items have found their way into the hands of a diverse global user base. Nonetheless, the perception of products varies significantly among individuals, attributed to differing cultural backgrounds and personal idiosyncrasies. Despite this, the industry and design sectors have historically emphasized the commonalities among consumers rather than their differences. This homogenization might account for the rising user dissatisfaction with products that technically function as intended. Technically, user dissatisfaction is characterized by the absence of functional flaws or technical deficiencies in the product's design. Complaints stemming from non-technical grievances have seen a marked increase since the mid-1990s, posing a considerable challenge to manufacturers. Such issues threaten to undermine brand loyalty, potentially leading to product returns or a general reluctance to engage with the brand post-purchase.

User dissatisfaction initially emerged as a notable concern within the modern, mass-market consumer products sector and has since become increasingly prevalent in the mobile phone industry. By 2006, the financial repercussions of such dissatisfaction had inflicted a $4.5 billion toll on the global mobile phone sector. The subsequent year, the expenses associated with addressing user dissatisfaction in the consumer electronics market of Europe and the United States escalated to approximately $5 billion (Kim, 2014, p. 91).

The realm of product design transcends mere functionality, increasingly gravitating towards the product's intangible attributes, such as its significance and persona. Finn (1985) articulated a product's persona as "the symbolic associations embedded within the product's design." From the perspective of engaging users, the essence of designing a product's persona lies in its ability to captivate. Drawing from the self-congruity theory, it has been highlighted that individuals are inclined towards products that resonate with their self-identity. Further elaborating on this theory, Govers and Schoormans (2005) discovered that "consumers show a preference for brands and products that reflect their own personal traits in the product's personality attributes."

1.1 Research Questions:

- Which fundamental design variables contribute to the development of a personality for an industrial product?
- In what manner is the personality of a product interconnected with the personality of its user?

1.2 Research Significance:

The significance of this research lies in uncovering design variables critical for crafting a unique identity for industrial products and demonstrating how these products can mirror or express the user's personality. This exploration enriches industrial design knowledge, guiding designers in leveraging these variables to create product personalities that resonate with users, thereby understanding user preferences and rejections more deeply.

1.3 Research Objectives:

The research endeavors to:

- Identify the design variables conducive to endowing industrial products with distinct personalities, through pinpointing particular combinations that forge a characteristic defining the product and setting it apart from others.
- Elucidate the mechanisms through which a symbiosis between the user's personality and that of the industrial product can be achieved.

1.4 Research Limitations:

- **Objective Limitation**: The focus is on analyzing how design elements contribute to shaping a specific personality for industrial products and the relationship between the product's personality and user's personality.

- **Spatial Limitation**: The study is confined to mobile phones in the hands of real users, as identified by second, third, and fourth-year students of the Design Department's morning sessions, and second and third-year students of the evening sessions, at the College of Fine Arts, University of Baghdad.
- **Time Limitation**: The research is limited to the year 2024.

1.5 Terms Definitions

Design Variables: A design variable consists of a coherent collection of attributes that are subject to change or variation. These variations can manifest as different levels of intensity or magnitude, such as high or low, with the specific degree being determined by the attribute's value. In essence, an attribute could simply be identified by descriptors like "low" or "high" (Babbie, 2009, p. 14). **Procedurally**, Design variables encapsulate the aggregate of design traits and features that epitomize the essence of an industrial product. These variables can be discerned through aspects such as the product's form, functionality, usage, and any other attributes that convey the product's inherent nature and distinctive characteristics.

Product Personality: This term denotes a "holistic portrayal of a product, profoundly shaped by the product's visual appeal, alongside a collection of human personality traits employed to characterize a specific variant of the product" (Pourtalebi & Pouralvar, 2012). The researcher **Procedurally** defines product personality as the array of features and attributes that an industrial product embodies and conveys to the user, intended to be embraced as qualities that articulate the user's own personality.

User Personality: User personality traits are described as "inclinations to exhibit stable patterns of thought, emotion, and action. These traits can be influenced by a variety of multidimensional factors, including user behavior, physical appearance, attitudes and beliefs, as well as demographic, cultural, and ethnic attributes" (Rajagopal, 2006). **Procedurally**, the user's personality is defined as the collection of ideas, beliefs, and behavioral frameworks that guide the user's actions and are directly manifested in their choices when purchasing industrial products.

2. Literature review

2.1 Product Persona

Jordan (2002) embarked on a quest to explore and elucidate the relationship between the aesthetic attributes of products and their inherent personalities through a methodology known as product personality mapping. Product personality is articulated as "the ensemble of human personality traits attributed to a specific product variant." Jordan posits that perceiving products as entities with character allows us to appreciate them as 'living organisms' beyond mere functional implements. This perspective enabled Jordan to validate the significance of tailoring products to specific personalities within the realm of product design. Furthermore, the findings revealed an absence of correlation between the personalities of the participants and their preference for products exhibiting similar personalities, challenging the "self-congruity theory" (Jordan, 2002, p. 43).

The absence of correlation observed in Jordan's study might be attributed to its superficial treatment of the concept. Conversely, Mugge's research provides a notable contrast, showing that "individuals tend to develop a stronger affinity for products that mirror their personality (exhibiting high product personality congruence) compared to those that do not align (showing low product personality compatibility) with their personal traits." Additionally, comprehensive research solidly validates the importance of self-congruence in industrial product design, compellingly arguing for its consideration (Govers & Mugge, 2004, p. 8).

A considerable body of scholarly work posits that "the aesthetic presentation of a product predominantly dictates its perceived personality." Reeves and Nass delve into the cognitive processes involved, illustrating that "humans innately process and interpret emotional expressions manifest in objects, leading to the establishment of relational dynamics with

these objects predicated on the personalities ascribed to them" (van Gorp & Adams, 2012, p. 13). Thus, as Donald Norman articulates, "To engineer a product with a coherent personality, designers are tasked with weaving together pertinent product attributes. Ignoring the personality intended for the product leads to outcomes that are disjointed, eroding user trust and evoking feelings of betrayal among consumers." (Norman, 2004).

The concept of product personality significantly impacts user preferences and the mechanisms behind product selection. Personality, in this context, encompasses all meanings a user associates with a product. Finn posits that a product's personality consists of "the symbolic associations attached to a product." He further describes product character as "a mental representation that triggers the perception of 'seeing' in the absence of direct visual stimuli" (Finn, 1985, p. 29). Designers can strategically influence this perception, for instance, by altering the packaging of existing products to present them anew, thereby changing their image without altering the product itself. Product personality thus encompasses both tangible and intangible attributes related to a product, including its design, style, form, functionality, and materials, as well as branding, marketing symbols, celebrity endorsements, and country of origin. Research also highlights the existence of product images within memory at varying levels of abstraction.

Baudrillard observed, "The demand today transcends raw materials or machinery; what is sought after is a product endowed with personality." Product personality has become integral to design, primarily for two reasons. Firstly, it resonates with users' self-concept, providing satisfaction in their choices as opposed to adhering to a collective standard. Secondly, by introducing a spectrum of product variants that serve the same functional purpose yet exhibit distinct personalities, businesses enable a broader demographic to select options that mirror their unique identities, thereby augmenting their market share (Baudrillard, 2006). This strategy gains particular significance in mature markets, where distinguishing products based on price and functionality poses a challenge.

Janlert and Stolterman explore the notion that a product's personality impacts how users interact with it. They argue that the anthropomorphic attributes of products act as indicators of their functionality and behavior, thereby aiding users in predicting their interactions with the product. Identifying certain personality traits, such as serenity and integrity, in products might pose challenges. This can lead to a divergence in how designers and users perceive the product's personality. Furthermore, the visual and aesthetic qualities of a product, along with its evaluative appearance, are intimately connected to its perceived personality (Janlert & Stolterman, 1997) they posit that designers have the ability to embody personality traits within the product's design in a manner that resonates with users' understanding.

2.2 User Persona

Typically, users lack direct contact with the creators behind the products they use, which means their understanding of the design largely stems from their engagement with the product itself. Designers craft specific attributes—like shape, functionality, usability, and societal value—into the product. Viewing product design from a semiotic lens highlights the portrayal of products as symbols that carry meaning. When products are recognized as symbols subject to user interpretation, it becomes insightful to view the user's reaction to product design as a component of the broader communication process. The conventional perspective on user behavior conceptualizes the reaction to products as a process encompassing cognition and emotion, subsequently leading to behavior. This approach segments responsiveness into three distinct facets, illustrating a model of the design communication process wherein designers harbor specific intentions regarding a product's appearance, its production, placement within an environment, perception by users, and ultimately, the users' responses to it. Allport delineates user personality as "the dynamic organization within the individual of those psychophysical systems that dictate their singular

adjustments to the environment." (Allport, 1937, p. 48). Hence, user personality encompasses the entirety of stable patterns of emotion, thought, and action.

The nexus between personality variables and user behavior has piqued scholarly interest ever since the dynamics of the product-user relationship emerged as a field of scientific inquiry. Numerous investigations have established a link between personality and various facets of user behavior, including purchasing habits, media preferences, inclination towards innovation, market segmentation, susceptibility to fear, influence of social factors, product selection, leadership in opinions, propensity for risk, shifts in attitude, feelings of resentment, dissatisfaction, and experiences of shame. In response to these findings, several theoretical frameworks focusing on personality have been developed, underscoring the significance of understanding user orientation. Among these conceptual models, notable ones include the personality factor, the dichotomy of internal/external orientation, and the Type A behavior pattern. Friedman and Rosenman describe the Type A behavior style as "a complex of affective and kinetic behaviors observable in individuals who are consistently and intensely striving to accomplish increasingly more within diminishing timeframes, and if required, in contention with the obstacles presented by circumstances or other individuals." (Wu et al., 2011). A Type A behavior pattern is a model of how a user views events and information when faced with a challenge. This pattern identifies user traits such as striving for competitive achievement, hostility, impatience, motor behaviors, and pressure for professional productivity, which are also related to how they are affected by product variables and acquire products that represent them. While the opposite behavior pattern is known as Type B behavior pattern. B type refers to the relative absence of the characteristics of type A type and a more relaxed way of dealing with affairs. People who exhibit behavior type B are more relaxed, rarely lose patience, are not easily upset, and take longer to enjoy professional tasks.

Product personality significantly shapes user preferences and the processes through which products are selected. The concept of user personality encompasses all the meanings a user derives from interacting with a product. Finn conceptualizes this as "the user's symbolic associations with the product." Specifically, in the realm of industrial product design, user persona is thought of as "a mental representation that triggers the perception of 'seeing' without direct visual input" (Finn, 1985, p. 29) . Designers can intentionally alter this perception, for instance, by altering the packaging of older products to give them a new, smaller appearance, thus changing their image without modifying the actual product. Consequently, user personality can be understood as a collection of beliefs, shaped by both the tangible and intangible attributes of a product—its design, style, form, functionality, materials, branding, marketing symbols, celebrity endorsements, and origin. Moreover, the way users perceive products is influenced by the images held in their memory, which can vary greatly in their level of abstraction.

2.3 Design variables that make up product's personality

The personality of a product is crafted from numerous design elements that bestow upon it unique and individual identity; these elements are referred to as design variables. By distilling the product to its core, we can pinpoint the specific design variables that mold its character, thereby outlining a framework of the critical design components (Schoormans, 2014). To accurately capture the essence of an industrial product's personality, the researcher has elected to categorize the product along seven dimensions. These dimensions assist designers in steering the product's design trajectory and defining its distinctive traits, collectively termed the product's personality. As follow:

1. Product Form

The aesthetic evolution of a product during its development journey is influenced by a myriad of factors. These encompass consumer inclinations, technical dimensions, objectives, and the boundaries imposed by the design trajectory. The user's perception of the product's

aesthetic can pivot their behavior towards acceptance or rejection (Bloch, 1995). Essentially, the product's design communicates with users via its form, impacting their reception. Berkowitz elucidates this notion by asserting that potential consumers interpret the visual cues of a product as indicators of an unspoken reality (Berkowitz, 1987, p. 276). The visual identity of a product is shaped by alterable features, like material choices, and immutable aspects, dictated by regulatory standards. These regulations govern safety, electrical compliance, and structural integrity, ensuring the product meets established norms.

Nussbaum posited that the development of a product's form could adhere to constraints necessitating the retention of specific features from earlier iterations. This perspective is bolstered by the findings from Jordan's research on product personality customization, which highlighted that Braun's products manifest a distinctive brand personality recognized and appreciated by consumers (Jordan, 2002). Consequently, the visual and tactile presentation of a product can trigger a spectrum of psychological reactions among users. It falls upon designers to foresee, strategize, and sculpt these responses meticulously. Achieving success in this realm typically fosters user behaviors inclined towards prolonged engagement, be it through visual inspection, auditory interaction, or tactile exploration.

2. Product semiotics

Product semiotics delves into the symbolic essence of a product, encompassing stereotypical associations, visual depictions, and metaphoric meanings that imbue the product with significant value for the user. This characteristic is conveyed via the product's design or packaging, enhancing its aesthetic appeal and enriching the user's experience.

Krippendorff and Butter articulate the concept of product semiotics as the "understanding" of the symbolic attributes of human-crafted forms within their respective environments, specifically applied to the realm of industrial design (Crilly et al., 2004). Here, " understanding " encompasses either the intuitive insights gained from a designer's own experiences or the structured comprehension obtained through academic study and meticulous investigation. This approach is acclaimed for enhancing the lucidity and intentionality of product design.

Krippendorff and Butter liken the application of knowledge in design to the process a journalist employs in crafting media messages, using a specific lexicon. Similarly, designers possess an arsenal of forms at their disposal, crafting arrangements that are perceived as cohesive wholes. Such creations facilitate comprehension by the audience, fostering an ongoing understanding (Krippendorff & Butter, 1987, p. 5). Echoing this sentiment, Crilly and his team assert that a designer's role involves decoding the collective values and beliefs inherent in a society, subsequently manifesting these insights through designs that encapsulate relevant symbolic meanings, including personality traits (Crilly et al., 2004, p. 17). The essence of current research endeavors lies in exploring methodologies for imbuing products with meaning through product semantics. This entails identifying how specific design elements—shape, form, materials, texture, and color—can convey intended messages. These elements are deliberately chosen for their capacity to signify desired attributes within a given context, often drawing on associations with other products or concepts familiar to the user. Therefore, it's crucial for designers to grasp these fundamental design components and the connotations they carry.

3. Function

The function of a product encompasses its primary purpose and rationale for existence, aimed at fulfilling specific user needs. This encompasses not only the physiological demands but also the emotional desires for satisfaction, enjoyment, and a sense of belonging (S. Hsiao & Chen, 1997).

4. Aesthetics

Product aesthetics pertain to the tangible attributes of a product, including its form, composition, and hue. This aspect is intrinsically linked to the user's perception of the

product's functionality, fostering a belief that items with appealing aesthetics are likely to perform more effectively (Al-Uqaili & Matar, 2019).

5. Gender

This dimension embodies the product's capacity to resonate with, invoke, or signify a specific gender identity or activity. It is intimately connected to the product's personality, infusing it with a human element. This characteristic of the product is amplified through targeted marketing and advertising efforts (Norman, 2004).

6. Technology

The technological dimension serves as a critical factor in differentiating a product from its competitors. It encapsulates the nature and degree of scientific knowledge applied to endow the product with functional capabilities, offering unique features and performance traits that hallmark the product with a distinctive identity and quality.

7. Brand

A brand encompasses the myriad of perceptions and emotions that consumers hold dear, comprising the collective essence of thoughts, desires, beliefs, imaginations, doubts, feelings, discussions, and decisions (Middleton, 2013, p. 109). It represents a critical component of a product in the eyes of the consumer, attributing unique value beyond the tangible attributes of the product itself. The selection of a brand is a pivotal decision in shaping product strategy (Azzam, 2009, p. 205). Brands can manifest as recognizable names like Toyota or Sony, or as iconic symbols, akin to the emblem Apple affixes to its devices, advertising, distinguishing the offerings of one enterprise from another (Damour, 2004, p. 190).

8. Price

Price reflects the product's value in monetary terms, with the premise that greater features and value command a higher price (Shari, 2009, p. 5). From the consumer's perspective, price is seen as the sum of money exchanged for the benefits derived from acquiring a distinctive product (Christ, 2012, p. 11).

9. Experience

Experience encompasses the range of tested elements anticipated to be delivered by the product to the user, integrating both cognitive and emotional facets tied to the incorporation of human traits within the design. The primary driving force behind crafting a product experience lies in the emotional expression manifested through design (Baheel, 2022).

3. Methodology

Upon pinpointing the fundamental factors as essential components in shaping the personality of an industrial product—namely form, semiotics, function, aesthetics, gender identity, technology, brand identity, pricing strategy, and user experience—the research focus was directed towards evaluating a specific product: the mobile phone. This product was chosen as the central subject of investigation, and a survey was conducted among a targeted demographic: students enrolled in the Design Department, specializing in Industrial Design, across various levels (second, third, and fourth year for morning sessions, and second and third year for evening sessions) at the College of Fine Arts, University of Baghdad. The participant comprised 114 students, providing a diverse range of insights into the product's impact and significance. The decision to focus on the mobile phone was motivated by several compelling factors:

1. In today's world, the mobile phone stands as the product most intimately linked with human beings, serving as an indispensable companion in daily life.
2. The degree of connectivity between a user and their mobile phone surpasses that of nearly any other product, highlighting a uniquely profound relationship that people have with this device.

3. The mobile phone encompasses a wide array of design elements that can be quantitatively assessed, allowing for an in-depth exploration of how these characteristics correlate with the personality traits of its users.

The selection of user groups for this study was strategic, based on several key considerations:

1. Their specialized knowledge closely aligns with the subject matter, enabling them to evaluate the variables with precision and objectivity.
2. The groups comprise a balanced mix of genders, encompassing both male and female participants.
3. They represent a diverse range of age categories, offering a broad spectrum of perspectives.
4. Their accessibility and the feasibility of organizing focus group discussions with them are notably convenient.

Five focus group sessions were carried out, each corresponding to the previously mentioned academic stages. These sessions facilitated group discussions, during which the variables under consideration, as well as their connections—or lack thereof—to individual experiences, were thoroughly examined. Participants shared their insights and viewpoints on the subject, thereby illuminating the core concept of the research. This collaborative dialogue enabled the identification of concurrences and discrepancies between the theoretical research variables and the personal perspectives of the users.

3.1 Results

1. The demographic profile of actual mobile phone users encompassed a broad age range from 19 to 53 years. Within this user base, a significant majority, constituting 66.2%, were female, while 33.8% were male.
2. Among the study's participants, Apple brand phone users constituted 60% of the total, making it the most popular choice. Samsung brand users followed at 21.3%, with Infinix and Xiaomi brands each capturing 5% of the user base. Honor brand users accounted for 3.7%, while both Redmi and Huawei brands were each preferred by 2.5% of the participants. Chart (1).
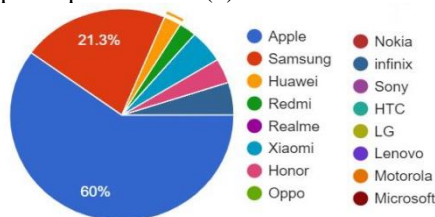

Chart (1) represents the distribution of users across different smartphone brands, illustrating the percentage of participants

3. The attributes of form were delineated with respect to its variables and individual traits, constituting distinct elements contributing to the delineation of a particular persona for the mobile phone. The outcomes thereof were expressed through the aggregate endorsement rates among actual users, amounting to 88.8%, Chart (2).
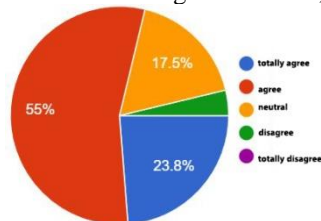

Chart (2) shows the proportions form's characteristics and their relationship to the product's personality

4. The manifestation of the phones form, inclusive of its array of features and attributes, was perceived as a manifestation of users' distinct preferences and individual personalities, accounting for 57.5% of respondents. Conversely, other proportions spanned from 26.2% indicating neutrality to 13.8% expressing disagreement, with a

mere 2.5% of users unequivocally rejecting the congruence between their phone's personality and their own. Chart (3).
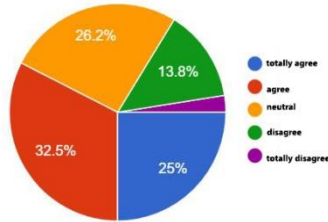
Chart (3) illustrates the proportions of the product's personality attributes relative to the physical characteristics of the device and their association with the user's personality.

5. The semiotic components encompassing symbols, signs, and icons embedded within the mobile phone are imbued with distinctive features that set it apart from competing devices, garnering a consensus and endorsement rate of 65%. Chart (4).
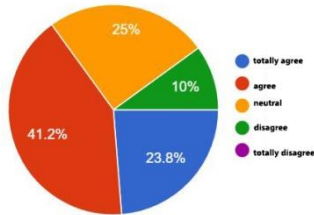
Chart (4) delineates the relative distributions and variations inherent in the semiotic attributes of the product.

6. Variations in symbols, signs, and icons within mobile phones contribute significantly to manifesting the user's individuality and distinctiveness, aligning their unique personality traits with the phone's semiotic elements. This correlation has achieved a consensus and endorsement level of 58.8%. Chart (5).
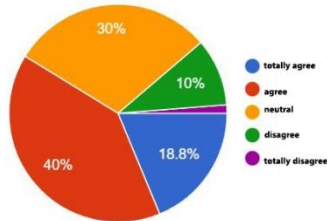
Chart (5) illustrates the proportions of the product's semiotic attributes and their correlation with the user's personality characteristics.

7. The mobile phone's functionalities, distinct from those of its counterparts, endowed it with a unique identity. This distinction was quantitatively affirmed with an overwhelming approval and endorsement at a rate of 63.7%. On the other spectrum of this analysis, responses were characterized by 22.5% neutrality, 11.3% dissent, and a 2.5% outright rejection. Chart (6).
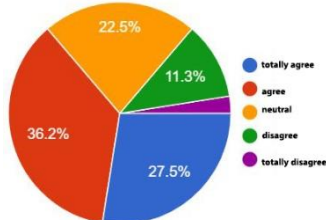
Chart (6) presents the distribution of the product's functional traits and their significance in establishing its unique identity.

8. The mobile phone's varied functionalities contribute to its compatibility with the user's personal essence and uniqueness, receiving a combined rate of agreement and endorsement at 62.5%. Conversely, the remainder of the responses for this dimension was categorized as 27.5% neutral and 10% dissenting. Chart (7).
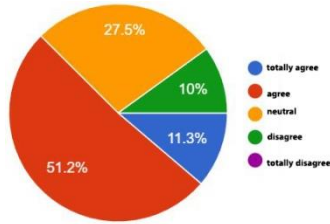
Chart (7) depicts the ratios of the product's functional attributes and their alignment with the user's personality.

9. The mobile phone's aesthetic attributes, encapsulated in its design, structural elements, and the semiotic patterns it exhibits, articulate the unique characteristics setting it apart from other devices. This distinctiveness has been recognized with a comprehensive concurrence and endorsement rate of 76.3%. Meanwhile, the alternative responses for this parameter showed a neutrality rate of 17.5% and a dissenting fraction of 6.3%. Chart (8).
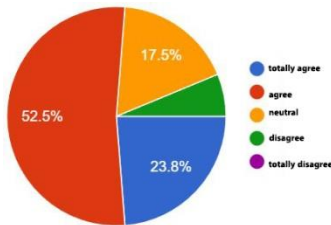
Chart (8) illustrates the distribution of the product's aesthetic features and how they contribute to identifying its distinctive personality.

10. The aesthetic qualities, encompassing the general design, formal attributes, semiotic elements, construction materials, and color of the phone, are indicative of the user's distinct taste and individual personality, achieving a consensus and approval rate of 60.7%. The remaining responses for this dimension were divided into 27.8% neutral and 11.4% disagreement, Chart (9).
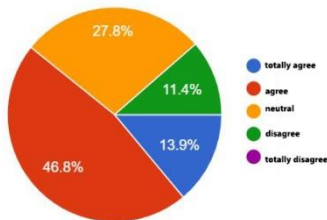
Chart (9) displays the breakdown of the product's aesthetic properties and their correlation with the user's personality.

11. The explicit formulas and visible characteristics, along with the variables of functionality and technological sophistication, conveyed gender identity, evidenced by a total concurrence and approval rating of 60%. The remaining feedback for this criterion was distributed as 30% neutral, 7.5% in disagreement, and 2.5% in outright rejection. Refer to Scheme 10 for more detailed analysis. Chart (10).
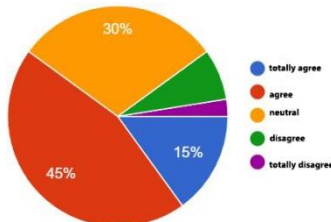
Chart (10) illustrates the percentage distribution showing how the features of the product correlate with the user's gender, whether male or female.

12. The formal attributes and functional capabilities of the phone were not significant in reflecting the user's personality in terms of gender within the social contexts they engage with, garnering a total approval and concurrence rate of 45%. Regarding the representation of gender in interactive scenarios, the other responses were 40% neutral, 10% in disagreement, and 5% in absolute rejection. Chart (11).
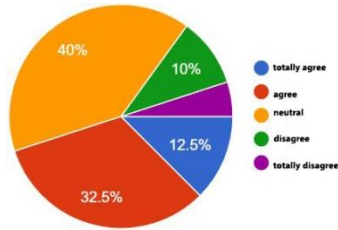
Chart (11) depicts the percentages indicating the product's inability to associate with and express gender identity within social contexts.

13. The implementation of advanced technological features in the mobile phone sets it apart from devices used by others within the social circles of the user, as evidenced by an agreement and approval rate of 53.1%. Other responses for this aspect were categorized as 27.8% neutral, 17.7% dissenting, and 1.3% outright rejection. Chart (12).
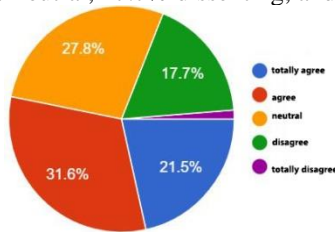

Chart (12) illustrates the impact of technological sophistication on defining the personality of a mobile phone.

14. The distinctive technological advancements of the mobile phone contribute to articulating the user's individuality and personal essence, achieving a consensus and endorsement rate of 53.8%. The additional feedback for this dimension showed 32.5% neutrality and 13.7% disagreement. Chart (13).
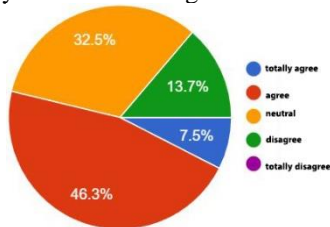

Chart (13) demonstrates the significance of technological sophistication in connecting the product's character with the personality of the user.

15. The mobile phone brand is depicted as a fundamental and impactful factor in the user's selection process, contributing significant value to the product, with a comprehensive approval and concurrence rate of 83.8%. Meanwhile, the responses from the alternate perspective yielded 6.3% neutrality and 10% disagreement. Chart (14).
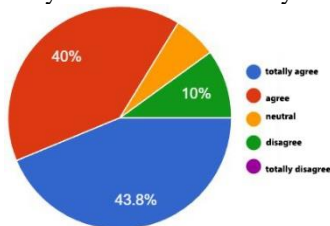

Chart (14) details the percentages related to how brand association contributes to enhancing the product's value.

16. A user's preference for a particular mobile phone brand plays a significant role in expressing their identity and setting them apart from peers and within their social groups, receiving a total endorsement and agreement rate of 63.8%. The distribution of other viewpoints on this matter included 17.5% expressing neutrality, 15% disagreement, and 3.7% outright rejection. Chart (15).
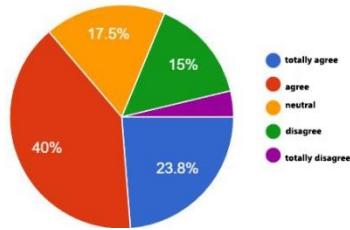
Chart (15) shows the brand's association with the user's personality characteristics

17. Price is acknowledged as a fundamental factor influencing a user's selection of a mobile phone, with an overwhelming approval and agreement rate of 73.8%. Additional responses concerning this factor were 17.5% neutral and 8.8% dissenting. Chart (16).
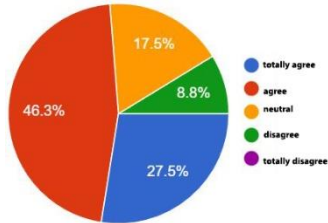

Chart (16) illustrates the correlation percentages between the product's price and the user's decision-making process in selecting a mobile phone.

18. The premium mobile phone failed to manifest the users' individuality and distinctiveness within their peer groups, garnering a total endorsement rate of 35.4%, an ambivalence rate of 21.5%, a disapproval rate of 32.9%, and an outright rejection rate of 10.1%, Chart (17).
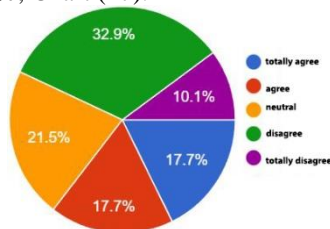

Chart (17) illustrates the absence of a significant relationship between the product's price and the user's distinction and individuality.

19. According to the collective design variables encompassed, the user's experience with a mobile phone is described as pleasurable during engagement and interaction, achieving a consensus and approval percentage of 92.6%. Additional findings related to this aspect reveal a neutrality rate of 5% and a disagreement rate of 2.5%, Chart (18).

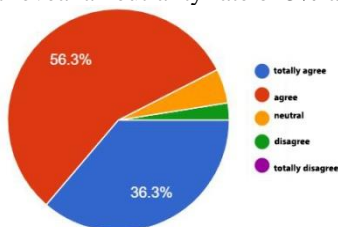Chart (18) displays the proportion of users who report experiencing enjoyment during their interaction with the mobile phone.

20. The mobile phone offers an experience that sets it apart from those offered by other devices, aligning with the user's personal identity and uniqueness, as evidenced by a total approval rate of 69.6%. Additional findings include a neutrality rate of 24.1% and a disagreement rate of 6.3%, Chart (19).
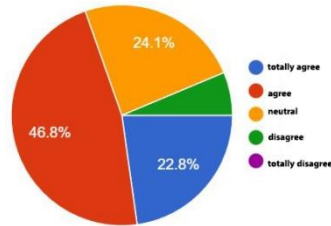
Chart (19) demonstrates the unique nature of the interactive experience with the phone and its relevance to the user's personal characteristics.

3.2 Conclusions

1. User age disparities illuminate the variation in preferences and cognitive inclinations regarding design variables and the perception of how these variables imbue the industrial product with a unique personality, alongside the variance in the degree of connection between the product's personality and the user's. Survey outcomes indicate that younger users favor products characterized by unique design elements that afford them a sense of social distinction. Conversely, older participants, specifically those aged 40-53, exhibit less concern for these variables or their expression within social settings.

2. The preference for the Apple brand over others predominantly stems from the formal and functional attributes that set its mobile phones apart, thereby establishing a distinct identity for its products. This preference is also influenced by the brand's capacity to resonate with the user's personal connections to the phone's features and its esteemed reputation in social circles, offering users a sense of differentiation from those aligned with alternative brands.

3. The visual attributes, encompassing design style, color schemes, materials, and textures, are pivotal in conferring a product with a formal distinction, manifesting as a unique personality. This distinction is achieved through a curated amalgamation of these formal variables, crafting a distinctive characteristic and a specific persona for the product. It is this unique personality, reflected in the product's form, that enables users to perceive a connection and resemblance between the product's identity and their own distinctive persona.

4. The semiotic attributes significantly contribute to differentiating an industrial product from its counterparts. The deliberate selection of symbols, signs, and icons endows the product with a unique feature, directly influencing the creation of a distinct personality for the product. Moreover, users discern a link between the product's semiotic features and their own individual personality traits, serving as a conduit for the alignment between the product's identity and the user's persona.

5. Selecting the functional types utilized in the design of an industrial product is deemed the paramount design variable. This variable's diversity and types can be leveraged to forge a unique feature and persona for the industrial product, predicated on identifying performance variables that diverge from those found in analogous products. Furthermore, the inclusion of distinctive functions, divergent from those in similar products, facilitates the establishment of significant connections between the product's functionalities and the user's personal distinctiveness, thereby setting the user apart from others.

6. Aesthetic values rank among the foremost design variables capable of endowing an industrial product with a distinct feature and a singular persona. The employment of unparalleled compositional elements and a unique style bestows upon the product a particularity that sets it apart from its counterparts. Moreover, the aesthetic value not only differentiates the product but also acts as a conduit for the user's engagement and the alignment of their personality with that of the product. The formal variables, interaction style, technological attributes, functional interfaces, and their design

elements collectively confer a unique aesthetic value upon the product. This value is perceived by the user as a mirror of their personal space, ideas, and individual beliefs, thereby encapsulating their identity and distinctiveness.

7. Design variables facilitate the identification of a unique combination enabling designers to tailor products specifically for distinct user demographics, such as males or females. By aligning the product with a particular social identity, it becomes emblematic of a certain group, thereby allowing users to embrace the product's characteristics as a reflection of their own unique personality.

8. The technological sophistication serves as a critical design variable that significantly enhances the industrial product's distinctiveness. This involves the variety of technological implementations, whether in the realm of the product's functionalities or in the user interaction interfaces, such as gestures, voice control, or recognition technologies. At first glance, these technological innovations imbue the product with a unique character, setting it apart from competitors. Such technological features are perceived by users as emblematic elements, through which they resonate and see a reflection of their individual personalities.

9. The product's price stands as a pivotal variable that influences user accessibility to the product. Moreover, the product's uniqueness, alongside the interplay between its design variables and its pricing, facilitates the establishment of a connection between the product and the user. The superiority of the product, in terms of its design variables, culminates in user satisfaction derived from juxtaposing the product's attributes against its cost. This satisfaction serves as a testament to the user's discernment in obtaining value for money, highlighting their distinction both in terms of product features and the financial investment made.

10. The cumulative experience derived from a product emanates from the user's interaction with the design variables it presents. This experience is perceived as pleasurable when the features exhibit unique attributes that align with the user's interests. An experience tailored to the user's preferences facilitates the establishment of meaningful personal connections and underscores their individual uniqueness.

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المتغيرات التصميمية و انعكاسها على شخصية المنتج الصناعي وارتباطها بالمستخدم

ا.م.د. جاسم خزعل بهيل[1]

الملخص:

تدارس البحث موضوع دور المتغيرات التصميمية في تكوين شخصية محددة للمنتج الصناعي وفقا لعلاقات من العناصر التصميمية والتي يمكن توظيفها بأسلوب معين لخلق شخصية محددة للمنتج. فضلا عن تدارس طبيعة الارتباط بين شخصية المنتج وشخصية المستخدم. اذ طرح البحث مفاهيم شخصية المستخدم والتي تم تحديدها بانها مجموعة الافكار والمعتقدات ونظم السلوك التي يتصرف على وفقها المستخدم وتنعكس بشكل مباشر على قراراته في اقتناء المنتجات الصناعية. وشخصية المنتج والتي تم تحديدها بانها مجموعة الخصائص والسمات التي يحملها المنتج الصناعي ويعرضها للمستخدم ليتم تبنيها بكونها سمات معبرة عن شخصية المستخدم. اذ تم التطرق الى السمات الأساسية التي تكون شخصية للمنتج في متغيرات: الهيئة والسيمياء والوظيفة والجماليات والجنس والمستوى التكنولوجي والعلامة التجارية والسعر والتجربة. وبعدها تم اعداد استمارة استبيان تم توزيعها على طلبة قسم التصميم في كلية الفنون الجميلة-جامعة بغداد. وبعد استخراج الإجابات تم التوصل الى ان الخصائص الجمالية من التصميم العام والميزات الشكلية والخصائص السيميائية والمواد المصنع منها الهاتف وكذلك اللون، بانها سمات معبرة عن الذوق الخاص للمستخدم وشخصيته الفريدة. وظهر ان العلامة التجارية للهاتف المحمول تضيف قيمة الى المنتج بوصفها احد المتغيرات الاساسية والمؤثرة في اختيار المستخدمين للهاتف.

الكلمات المفتاحية: المتغيرات التصميمية، شخصية المنتج، شخصية المستخدم.

الاستنتاجات

1. خصائص الهيئة من المتغيرات الشكلية كنوع التصميم ومتغيرات اللون والمادة والملمس كانت من الخصائص التي منحت المنتج تميزا شكليا تمثل بشخصية محددة عبر ايجاد توليفة من المتغيرات الشكلية التي تتيح تحديد سمة فريدة للمنتج وشخصية محددة. والشخصية المحددة التي يجد المستخدم سماتها في هيئة المنتج يمكن ان يجد من خلالها المستخدم نوعا من الترابط والتماثل بينها وبين شخصيته الفريدة.

2. الخصائص السيميائية لها دور مهم في تمييز المنتج الصناعي عن غيره من المنتجات من النوع ذاته. اذ ان اختيار توليفة محددة من الرموز والاشارات والايقونات تمنح المنتج صفة مميزة تنعكس بشكل مباشر على تكوين شخصية فريدة للمنتج. فضلا عن ان هذه الخصائص السيميائية يجد المستخدم فيها ترابطا بينها وبين سمات شخصيته الفريدة، مما يمثل بكونه مدخلا للترابط بي شخصية المنتج شخصية المستخدم.

3. اختيار الانواع الوظيفية التي توظف في تصميم المنتج الصناعي يعد بكونه اكثر المتغيرات التصميمية اهمية والتي يمكن اعتماد متغيراتها وانواعها في تكوين سمة وشخصية فريدة للمنتج

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[1] قسم التصميم/ كلية الفنون الجميلة/ جامعة بغداد gasim.khazaal@cofarts.uobaghdad.edu.iq

الصناعي بالاعتماد على ايجاد متغيرات ادائية تختلف عما تحمله المنتجات الاخرى من نفس النوع. فضلا عن احتواء المنتج على وظائف مميزة ومختلفة عن وظائف المنتجات المشابهة يتيح للمستخدم ايجاد روابط مهمة بين وظائف المنتج وخصوصيته الفردية مما يميز المستخدم عن المستخدمين الاخرين.