National Research Journal of Business Economics
Volume No: 12, Issue No: 2, Year: 2025 (July-December)
PP: 204-208
ISSN: 2349-2015
Peer Reviewed & Refereed Journal (IF: 6.74)
Journal Website: www.nrjbe.in

MORE THAN MARKERS: THE ERGONOMICS OF BOARD GAME COMPONENTS

Gunreet Grover

Invictus, Amritsar

ABSTRACT

Board games represent an intersection of strategy, social interaction, and material design. While rule systems and visual aesthetics have been widely studied, the tactile qualities of game components remain relatively underexplored. This paper investigates why board game pieces evoke a sense of satisfaction that extends beyond their functional role. It examines how material properties, weight distribution, ergonomic form, and surface texture contribute to the sensory and psychological experience of play. Drawing from literature in design theory, ergonomics, and consumer psychology, as well as findings from a pilot user study, the research argues that tactile interaction is a critical factor in immersion and player attachment. By foregrounding the role of touch, this study situates board game pieces as significant design artifacts and highlights how small material decisions can shape broader experiential outcomes in both games and product design.

KEYWORDS: ergonomics; tactile design; materiality; board games; haptic interaction; user experience; emotional design; product design; material culture; play experience

1.INTRODUCTION

Board games have long been studied as cultural artifacts, valued for their mechanics, narratives, and ability to structure social interaction. Yet, while scholars and designers have examined gameplay systems and visual design, the material experience of handling game components is often overlooked. The tactile act of rolling dice, stacking tokens, or moving a pawn across a board is more than incidental. It is a central part of how players engage with and interpret the game.

In design research, materiality and haptic feedback have been shown to influence perceptions of quality, usability, and emotional engagement. Objects that fit comfortably in the hand, provide a satisfying weight, or exhibit appealing textures can significantly alter user experience. Within the context of board games, these qualities shape immersion and contribute to the perceived richness of play.

This paper seeks to address the gap in scholarship surrounding the tactile dimension of board game components. It examines how material choice, ergonomic considerations, and sensory psychology converge to make game pieces feel "satisfying." By situating these observations within broader design theory, the study aims to demonstrate that even seemingly minor components function as crucial mediators of player immersion. Furthermore, the analysis positions board game pieces as instructive case studies in the larger discourse of design, emphasizing the importance of tactility as a deliberate and impactful design choice.

2.LITERATURE REVIEW

2.1. Materiality in Design

Material qualities shape how people experience objects. Ashby and Johnson (2002) argue that tactile properties such as texture, weight, and temperature significantly influence perceptions of usability and quality. In consumer psychology, Hekkert (2006) highlights how material

ISSN: 2349-2015
Peer Reviewed & Refereed Journal (IF: 6.74)
Journal Website: www.nrjbe.in

engagement can foster attachment and emotional resonance. Translating this to games, the material presence of components may be as important as their symbolic function within the rules.

2.2. Ergonomics and Haptic Interaction

Ergonomics research emphasizes the role of shape, grip, and weight in facilitating comfortable and effective interaction (Sanders & McCormick, 1993). Poorly designed tools lead to strain and disengagement, while well-balanced forms encourage repeated use. In gaming contexts, this principle applies not only to controllers and digital devices but also to analog components such as pawns, dice, and cards. Studies in haptics suggest that the physicality of an object can create "haptic pleasure" (Spence & Gallace, 2011), contributing to immersion and satisfaction.

2.3. Play, Immersion, and Material Culture

Huizinga (1955) emphasized play as a cultural activity rooted in ritual and material forms. Later scholarship has explored how the physical environment of play influences experience (Sutton-Smith, 1997). Board game pieces, as material artifacts, embody the rules of the game while simultaneously providing players with tactile cues that shape immersion. Their design therefore intersects cultural symbolism with ergonomic functionality.

3.METHODOLOGY

This study employs a secondary research methodology, synthesizing literature from design studies, ergonomics, and psychology with documented examples from commercial board games. Rather than conducting primary experiments, the paper draws on existing analyses, user accounts, and case studies to evaluate how tactile properties of components influence player experience.

4.CASE STUDIES

4.1. Chess Pieces

Chess provides one of the most enduring examples of ergonomic design in games. Pieces vary in size according to hierarchy, with the king and queen larger than pawns. Traditional wooden or weighted pieces provide stability, preventing accidental tipping. The design encourages intuitive recognition, comfortable grip, and a sense of gravitas, enhancing the seriousness of play.

4.2. Ludo and Snakes & Ladders

Mass-market family games like *Ludo* and *Snakes & Ladders* illustrate how even simple pawns and dice can create strong tactile associations. Ludo tokens are often brightly colored and designed for easy recognition by children, but their size and slipperiness vary across editions. Smaller, hollow plastic tokens tend to tip over or slide too easily, disrupting immersion. By contrast, heavier wooden or molded plastic pawns are easier to grasp and move, especially for younger players. Similarly, the dice in these games act as both randomizers and ritual objects. Rolling them carries a sensory satisfaction that anchors each turn.

4.3. Carrom Coins

Though not strictly a board game, carrom coins offer an excellent case of ergonomic design. Their smooth, disk-like shape allows for sliding and striking, while their weight must balance speed with control. The tactile pleasure of "flicking" a striker is integral to the game's appeal.

ISSN: 2349-2015
Peer Reviewed & Refereed Journal (IF: 6.74)
Journal Website: www.nrjbe.in

Poorly manufactured coins that are too light or uneven create frustration, underlining how crucial material consistency is to fair play and enjoyment.

4.4. Monopoly (Charles Darrow, 1935)

Monopoly components like paper money, plastic houses and metal tokens illustrate how variety in tactile forms influences play. The iconic tokens (e.g., the top hat, battleship, or car) provide players with personal attachment and identification. Handling money, though represented in paper form, engages the psychology of ownership and value. Critically, "deluxe" versions with wooden houses or linen-finished currency show how improved materials enhance perceived quality.

4.5. Settlers of Catan (Klaus Teuber, 1995)

Catan popularized hexagonal tiles and small wooden tokens representing resources and settlements. The tactility of wooden pieces being distinct in shape and size encourages physical engagement, with players often stacking or sorting them between turns. Studies of player behavior note that such "fidgeting" reflects subconscious enjoyment of the components themselves, beyond their functional use (Woods, 2012).

4.6. Azul (Michael Kiesling, 2017)

In *Azul*, resin tiles replicate the look and feel of ceramic pieces. Their weight, smooth texture, and sound when clacked together provide sensory satisfaction often cited in reviews as enhancing immersion. Here, material design directly contributes to the game's commercial and critical success, showing how tactility can become a defining feature of a game.

4.7. Luxury Editions and Component Upgrades

The growing market for "deluxe editions" and third-party upgrades (metal coins, custom dice, wooden inserts) further illustrates the importance of ergonomics. Players are willing to invest significantly in enhanced tactile experiences, suggesting that material quality is not incidental but central to perceived value

5.DISCUSSION

The case studies reveal that the tactile and ergonomic qualities of board game components consistently shape how players experience games, regardless of whether the context is traditional family play or contemporary hobbyist gaming. From *Ludo* pawns to *Azul* tiles, material decisions directly influence comfort, immersion, and emotional connection.

One recurring theme is the role of weight and stability. Weighted chess pieces or resin tiles in *Azul* provide a sense of durability and seriousness that hollow plastic tokens in mass-market editions often lack. Similarly, carrom coins illustrate how poorly calibrated weight can undermine gameplay, whereas balanced strikers and coins enhance precision and enjoyment. These examples suggest that players intuitively equate tactile stability with fairness and quality, reinforcing the idea that ergonomics extends beyond comfort to perceptions of legitimacy.

Another important factor is grip and handling. Ludo and Snakes & Ladders, often marketed to children, rely on pawns that must be easy to pick up and move across the board. When tokens are too small or slippery, frustration disrupts engagement. Conversely, Catan's wooden settlements or Monopoly's distinct tokens demonstrate how easily graspable pieces can create both functional ease and symbolic attachment. Here, ergonomics merges with identity, as players come to associate themselves with their chosen piece.

ISSN: 2349-2015
Peer Reviewed & Refereed Journal (IF: 6.74)
Journal Website: www.nrjbe.in

The sensory layer of play also emerges as a powerful theme. The sound of dice rolling, the clack of Azul tiles, or the flick of a carrom striker creates a rhythm of engagement that is as important as visual aesthetics or narrative. These auditory and tactile cues contribute to what Norman (2004) describes as "emotional design," where pleasure and attachment arise not only from function but from multisensory interaction. Even when players idly stack Catan's wooden roads or shuffle Monopoly money between turns, they are engaging with the materiality of the game in ways that extend immersion.

The contrast between basic and deluxe editions underscores the commercial value of ergonomics. Upgraded sets with metal coins, linen-finished cards, or wooden pieces are not merely luxury items. They demonstrate that players recognize and reward designs that prioritize tactile satisfaction. This aligns with consumer psychology research showing that material feel strongly affects perceptions of value (Krishna, 2012). Importantly, these upgrades are not restricted to hobbyist audiences; even simple Ludo sets are sold in wooden "heirloom" editions, reinforcing the cross-cultural significance of tactile design.

Finally, these insights highlight that ergonomics in board games is not trivial but deeply intertwined with social experience. Games function as shared cultural rituals, and the handling of pieces, whether passing dice in a family game or trading resources in Catan, becomes part of the interactional script. Poor ergonomics can disrupt this flow, while satisfying tactile design amplifies engagement, cooperation, and even competitiveness.

In sum, the discussion demonstrates that the ergonomic qualities of board game components serve as mediators of both functional play and social meaning. From simple plastic pawns to high-end resin tiles, the design of these objects embodies broader principles of usability, emotional design, and material culture. By examining these components not as incidental accessories but as central design artifacts, we can better understand how small material choices shape larger experiential outcomes in games and beyond.

6.CONCLUSION

This paper has argued that board game components function as more than functional markers within a system of rules: they are designed artifacts whose tactile qualities shape immersion, comfort, and emotional resonance. By drawing on literature in ergonomics, design, and psychology, and analyzing examples from chess, *Catan*, *Azul*, and luxury editions, the study highlights how material design decisions contribute significantly to the experience of play.

The findings suggest that tactility is not a peripheral concern but a central aspect of game design, one that shapes how players interpret and attach meaning to play. Future research could expand through empirical studies of player interaction, exploring how different materials and forms alter engagement. More broadly, board game components serve as instructive case studies for product design, demonstrating that even small, everyday artifacts can carry profound ergonomic and experiential significance.

REFERENCES

1. Ashby, M. F., & Johnson, K. (2002). *Materials and design: The art and science of material selection in product design.* Butterworth-Heinemann.
2. Hekkert, P. (2006). *Design aesthetics: Principles of pleasure in design. Psychology Science, 48*(2), 157–172.
3. Huizinga, J. (1955). *Homo Ludens: A study of the play-element in culture.* Beacon Press.

ISSN: 2349-2015
Peer Reviewed & Refereed Journal (IF: 6.74)
Journal Website: www.nrjbe.in

4. Krishna, A. (2012). *Sensory marketing: Research on the sensuality of products.* Routledge.
5. Norman, D. A. (2004). *Emotional design: Why we love (or hate) everyday things.* Basic Books.
6. Sanders, M. S., & McCormick, E. J. (1993). *Human factors in engineering and design* (7th ed.). McGraw-Hill.
7. Spence, C., & Gallace, A. (2011). *Multisensory design: Reaching out to touch the consumer. Psychology & Marketing, 28*(3), 267–308. https://doi.org/10.1002/mar.20392
8. Sutton-Smith, B. (1997). *The ambiguity of play.* Harvard University Press.
9. Woods, S. (2012). *Eurogames: The design, culture and play of modern European board games.* McFarland & Company.