From Formal Attire to Multifunctionality: The Effect of Consumer Dressing Style in Multifunctional Product Marketing

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Abstract

Increasing product functionality has emerged as a key strategy for firms to compensate for deficiencies in product design and development. As multifunctional products proliferate in the marketplace, the rapid identification of consumers who prefer such products carries significant theoretical and practical implications. Existing research has primarily examined the positive effects of consumers' internal characteristics (e.g., impression management motivation, construal level) on preferences for multifunctional products. The present research investigates the impact of consumers' dressing style (formal vs. informal) on multifunctional product preferences and the underlying mechanism. Findings reveal that consumers' formal (vs. informal) attire increases their preference for multifunctional over less-functional products, with efficiency goal activation mediating this relationship. Furthermore, the results indicate that state self-esteem moderates the influence of dressing style on multifunctional product preferences via efficiency goals. This research illuminates the effect of consumer dressing style in multifunctional product marketing, offering practical implications for product designers and marketing practitioners in tailoring recommendation strategies according to variations in consumer dressing styles.

Full Text

Preamble

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Acta Psychologica Sinica aims to publish psychological research that is "both scientifically excellent and of particularly broad interest and significance." Studies that make only minor incremental contributions, do not attempt to open new areas of inquiry, or fail to propose unique and innovative perspectives—particularly those that merely investigate algorithms or techniques without addressing clear psychological questions—have low acceptance probability and should be submitted elsewhere.

Response:
1) This paper explores a novel research topic based on product functional features: whether consumers' own formal (vs. informal) dress influences their preference for multifunctional products, advancing research on how individual dress style affects consumer decision-making preferences.
2) Starting from consumers' own dress, we identify a dress style effect in multifunctional product marketing, contributing a new antecedent variable to the literature on consumer multifunctional product preferences and expanding the research perspective in this domain. This also provides a new answer to the practical question of "under what circumstances do consumers prefer multifunctional products."

2. Have you published or submitted any articles using the same data as this study? If yes, please attach them for review. (We do not encourage authors to publish multiple articles with the same variables from the same dataset, nor do we support splitting a series of related studies into multiple publications.)

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Response: This study employs multiple methods including experiments, and uses multiple indicators to measure the dependent variable (multifunctional product preference). Therefore, common method bias is not an issue.

4. Did you report and analyze effect sizes (e.g., Cohen' s d for t-tests, ^{2} or ^{2}p for ANOVA, standardized regression coefficients)? (Many studies mechanically report effect sizes without necessary analysis or explanation, such as whether the effect is small, medium, or large, or its theoretical/applied significance.) (Searching "calculator" on Google yields many convenient apps. Chinese explanations of effect sizes can be found at: http://journal.psych.ac.cn/xlkxjz/CN/abstract/abstract1150.shtml; English

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5. Please state your planned and actual sample sizes. If they differ, explain why. Previous psychological research has suffered from low statistical power due to insufficient sample sizes. We recommend explaining your sample size determination in the Methods section, based on justified effect sizes and desired power, and reporting the software/program used. Sample size planning rationale can be referenced at https://osf.io/5awp4/

Response: Referencing previous literature (Goodman & Irmak, 2013; Yu et al., 2014), we recruited approximately 100 participants per group for online experiments. For laboratory experiments, we planned to recruit 100 student participants per group, with final recruitment around 100 per group. Study 1 used a questionnaire survey with 500 participants.

6. For p-values, report exact values except when $p < 0.001$. For Bayesian factors, report sensitivity to prior distribution assumptions. Does your paper meet this requirement?
Response: Yes.

7. For data reporting completeness, if you excluded data in statistical analyses, did you report this in the text? What were the reasons? How would results change if included? How were missing data handled? Did you delete individual items from scales? Why? How would results change if included? Were any measured items or variables not reported? Why? Please indicate where in the paper.

Response: Regarding exclusion criteria, following previous research (Yang & Liu, 2024), we established three criteria: (1) excluded participants who failed attention checks, (2) excluded those who did not complete manipulation tasks as instructed, and (3) excluded those who did not respond seriously to open-ended questions. All relevant measures and data have been reported in the article. Experimental stimuli are provided in the appendix.

8. Are unpublished experimental materials, scales, or questionnaires attached at the end of the file for review? If not, explain why. If published, are you willing to share these materials with other researchers?
Response: Listed in the appendix at the end of the paper. All experimental materials used in this study are available for sharing with other researchers.

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10. Does your study involve clinical intervention or laboratory experiments? Yes (√) No ( )
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Response: The experiment does not involve ethical issues and has not been pre-registered yet.

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Response: Yes, reviewed by an English-proficient professional.

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From Formal Wear to Versatility: The Effect of Consumer Dress Styles in the Marketing of Versatile Products

Abstract

Adding product functions has become an important strategy for companies to compensate for weaknesses in product design and development. As multifunctional products proliferate in the market, identifying consumers who prefer such products holds significant theoretical and practical value. Existing research has primarily examined how consumers' internal characteristics (e.g., impression management motivation, construal level) positively influence multifunctional product preferences. This paper investigates how consumers' own dress style (formal vs. informal) affects their preference for multifunctional products and the underlying mechanism. Results show that when consumers wear formal (vs. informal) attire, their preference for multifunctional over single-function products increases, with efficiency goal activation serving as the mediator. Furthermore, state self-esteem moderates the effect of dress style on multifunctional product preference through efficiency goals. This research reveals a consumer dress style effect in multifunctional product marketing and provides practical insights for product designers and marketers to develop recommendation strategies based on differences in consumer dress styles.

Keywords: dress style, multifunctional products, efficiency goals, state self-esteem

In daily life, consumers make various consumption decisions while wearing different styles of clothing (e.g., formal vs. informal). Does consumers' dress style influence their consumption decisions? Marketing scholars have paid scant attention to whether and how consumers' dress styles affect their decision-making preferences. To date, only one domestic review article exists (Yan et al., 2023), while international research has found that consumers' own formal dress (vs. informal dress) promotes general purchase intentions (Cutright et al., 2019), particularly for healthy foods (Wang et al., 2021). This paper aims to extend this research by revealing new effects of consumers' dress style on purchase behavior and their underlying mechanisms. We focus on investigating whether and how consumers' own dress style influences their preference for multifunctional products.

The variable of multifunctional products warrants attention due to its rich practical and theoretical value. Practically, with technological advancement and intense market competition, increasing product functions has become a key strategy to compensate for design and development weaknesses (Markeset & Kumar, 2005; Wang, 2020). Marketers often highlight multiple functions as an advantage to stimulate purchase desire. Theoretically, prior research has primarily examined antecedents of multifunctional product preferences, such as

impression management motivation (Thompson & Norton, 2011), construal level (Yu et al., 2014), product usage frequency estimates (Goodman & Irmak, 2013), and price cues (Lee & Zhao, 2014). Some studies have explored consequences of encountering multifunctional products, such as You et al. (2022) examining how multifunctional products reduce patience. However, the question of how consumers' dress style influences multifunctional product preferences remains unexplored, despite marketers frequently making recommendations based on consumers' dress styles during offline shopping.

We propose that when wearing formal (vs. informal) attire, consumers will prefer multifunctional over single-function products, with efficiency goal activation as the mediator. Specifically, formal dress activates work-related associations (Kwon, 1994), and work is inseparable from efficiency (Suzman, 2020). Prior research indicates that purchasing multifunctional products helps individuals achieve efficiency goals (You et al., 2022). We further argue that the effect of formal (vs. informal) dress on multifunctional product preference is more pronounced among individuals with high self-esteem.

This research offers significant theoretical contributions and practical implications. First, while existing studies have revealed how dress style affects overall purchase intentions (Cutright et al., 2019) and food decisions (Wang et al., 2021), we examine its impact on multifunctional product preferences, advancing research on consequences of consumer dress style in marketing. Second, we identify a dress style effect in multifunctional product marketing, contributing a new antecedent variable to the literature and expanding research perspectives. Third, whereas previous research found that formal dress activates clothing-image congruence associations (Wang et al., 2021), we reveal that formal dress (vs. informal dress) activates efficiency goals, uncovering a new mechanism. Finally, marketers can make multifunctional product recommendations based on consumers' dress styles.

1.1 Consumer Dress Style and Efficiency Goals

We propose that consumers' own formal dress (vs. informal dress) activates a goal of using time productively—namely, an efficiency goal. The rationale is that formal dress evokes work-related associations, and work is intimately connected with efficiency. Evidence from psychology and human resources supports this reasoning.

On one hand, research on material priming in psychology suggests that contact with specific objects activates corresponding self-associations (Hong & Sun, 2012). For example, Kay et al. (2004) found that exposure to office supplies (e.g., conference tables, briefcases) increased competitive awareness and tendencies. Adam and Galinsky (2012) extended this concept, arguing that wearing symbolic clothing activates relevant schemas and associations. Formal dress is viewed as a workplace symbol closely associated with work (Kwon, 1994), and work involves completing tasks within limited time while pursuing efficiency. We

therefore infer that compared to informal dress, wearing formal dress activates work-related self-associations, leading to pursuit of efficiency goals.

On the other hand, research in human resources on the relationship between employee dress style and productivity also supports our proposition. The work ethic that emerged during Western industrialization emphasizes that time is the ultimate scarce resource (Rifkin, 1987), with productivity and time efficiency being key concerns for societal and corporate development (Keinan & Kivetz, 2011). Companies promote productivity and time efficiency not only through technology but also corporate culture, including requiring formal dress during work hours (Peluchette & Karl, 2007). Human resources research indeed finds that formally dressed employees show greater concern for productivity and a tendency to accomplish more in less time (Karl et al., 2013). Additionally, a survey of over 1,000 HR executives showed that after implementing informal dress policies, 44% reported increased tardiness and absenteeism (Peluchette & Karl, 2007), primarily because individuals feel more relaxed in informal attire and prefer slower-paced, low-effort work states.

1.2 Efficiency Goals and Multifunctional Product Preferences

Goal Theory suggests that activated personal goals guide individuals toward goal-consistent behaviors in subsequent situations (Fitzsimons et al., 2008). For example, activating a "dieting" goal leads to consuming fewer food samples (Papies & Veling, 2013), while activating a "saving money" goal reduces impulsive consumption intentions and behaviors (Ding et al., 2019). We infer that activated efficiency goals motivate efficiency-seeking behaviors. Efficiency goals drive individuals to accomplish more in less time or satisfy multiple needs in the most convenient way (Klinger & Cox, 2011). Multifunctional products load multiple functions into a single product, enabling consumers to achieve multiple intentions through one item (Thompson & Norton, 2011). Therefore, purchasing multifunctional products helps consumers achieve efficiency goals (You et al., 2022). We hypothesize that consumers wearing formal (vs. informal) attire will exhibit higher efficiency goals and consequently prefer multifunctional over single-function products.

Based on this reasoning, we propose:
H1: Consumers wearing formal (vs. informal) attire will show increased preference for multifunctional products.
H2: The relationship between consumers' dress style and multifunctional product preference is mediated by efficiency goals.

However, besides the proposed efficiency goal mechanism, alternative mediators may explain why formal (vs. informal) dress leads to multifunctional product preferences: time scarcity perception, social status perception, self-efficacy, and construal level. First, time is a scarce resource in work contexts (Drucker, 2020), and work-related formal dress may activate time scarcity perceptions, with mul-

tifunctional products helping save time (You et al., 2022), thus promoting preference. Second, formal (vs. informal) dress increases social status perception (Yan et al., 2023; Kraus & Mendes, 2014), and high-status individuals enjoy challenges (Wang et al., 2020), potentially preferring more difficult multifunctional products. Third, formally (vs. informally) dressed individuals estimate higher likelihood of completing tasks (Watson, 2004), reflecting high self-efficacy, which predicts preference for challenging tasks (Chi & Xing, 2006), potentially extending to multifunctional products. Finally, formal (vs. informal) dress induces high construal level (Slepian et al., 2015), which promotes multifunctional product preferences (Yu et al., 2014).

We therefore propose time scarcity perception, social status perception, self-efficacy, and construal level as competing mechanisms, which we test in subsequent studies.

1.3 State Self-Esteem as a Boundary Condition

Self-esteem is individuals' evaluation of their self-worth and abilities, expressed as self-affirming or self-negating attitudes (Tafarodi & Swann, 1995). Paradise and Kernis (2002) distinguish two types based on stability: trait self-esteem (stable, long-term, related to upbringing) and state self-esteem (fragile, short-term self-worth evaluations that can be situationally induced).

We argue that consumers' state self-esteem level moderates the effect of dress style on multifunctional product preferences through efficiency goals. First, from an ability perception perspective, high self-esteem individuals hold positive self-evaluations and believe they can use time effectively, whereas low self-esteem individuals have more negative self-evaluations and lack confidence in their time-management abilities (Han et al., 2014). We infer that when high self-esteem individuals wear formal dress, it strengthens their ability beliefs, motivating them to pursue efficiency goals and prefer multifunctional products consistent with their positive self-evaluation. Conversely, low self-esteem individuals may lack confidence in achieving efficiency goals and mastering multifunctional products, showing weaker preferences even when formally dressed.

Second, from an emotional experience perspective, high self-esteem individuals are more satisfied with their appearance, and formal dress (vs. informal) creates a professional, competent image (Watson, 2004). When high self-esteem individuals wear formal dress, congruent image perception generates positive emotions, promoting efficiency goals and multifunctional product preferences. Low self-esteem individuals are less satisfied with their appearance and prefer informal dress (Trautmann et al., 2007); wearing structured formal dress may amplify body image concerns and negative emotions, reducing interest in efficiency goals and multifunctional preferences.

We therefore propose:
H3: The effect of consumers' dress style (formal vs. informal) on multifunctional product preference is moderated by state self-esteem, being stronger among high

self-esteem individuals and weaker among low self-esteem individuals.
H4: The moderating effect of state self-esteem on the relationship between dress style and multifunctional product preference is mediated by efficiency goals. High state self-esteem strengthens efficiency goals, increasing multifunctional product preferences, while low state self-esteem weakens this mediating effect.

The overall research framework is shown in Figure 1 [Figure 1: see original paper].

1.4 Overview of Studies

Figure 1 Conceptual Model of This Research

As shown in Figure 1, we conducted five studies to test our hypotheses. Studies 1–3 examine the main effect: Study 1 measures real consumers' dress formality to initially test the effect while excluding alternative explanations of time scarcity and social status perception; Study 2 is a laboratory experiment manipulating dress style experience; Study 3 adds a control group and uses real advertisements to test the main effect while excluding self-efficacy and construal level as alternative explanations. Study 4 examines the underlying mechanism—efficiency goals. Finally, Study 5 tests the boundary condition—state self-esteem.

Regarding sample size, referencing previous literature (Goodman & Irmak, 2013; Yu et al., 2014), we recruited approximately 100 participants per group for online experiments and planned 100 students per group for laboratory experiments, with final recruitment around 100 per group. Study 1 used a questionnaire survey with 500 participants. For exclusion criteria, following Yang and Liu (2024), we established three criteria: (1) failed attention checks, (2) incomplete manipulation tasks, and (3) careless open-ended responses.

Table 1 Summary of Studies

Study	Purpose	Design	Key Findings
Study 1 (N=500)	Test main effect; exclude competing mediators (time scarcity, social status)	Survey measuring dress formality	Dress formality positively predicts multifunctional product preference (β=0.11, p=0.031)
Study 2 (N=213)	Causal test of dress style effect	Single-factor between-subjects (formal vs. informal)	M_{formal}=4.93 (SD=1.26); M_{informal}=4.04 (SD=1.13); F(1,211)=23.22, p=0.000, ^{2}=0.11

Study	Purpose	Design	Key Findings
Study 3 (N=240)	Test with control group; exclude self-efficacy and construal level	Single-factor between-subjects (formal vs. informal vs. control)	M_{formal}=5.49 (SD=1.67); M_{informal}=4.87 (SD=1.94); M_{control}=5.56 (SD=1.63); F(2,235)=3.96, p=0.02, ^{2}=0.033
Study 4 (N=320)	Test efficiency goal mediation; behavioral choice evidence	Single-factor between-subjects (formal vs. informal)	Efficiency goal mediation significant (indirect effect=0.27, SE=0.11, 95% CI: [0.0694, 0.4853])
Study 5 (N=320)	Test state self-esteem moderation	2 (dress style) × 2 (self-esteem) between-subjects	Moderated mediation significant (indirect effect=0.14, 95% CI=[0.0093, 0.4119]); effect holds for high self-esteem (indirect effect=0.46, 95% CI=[0.1600, 0.8278]) but disappears for low self-esteem (indirect effect=-0.007, 95% CI=[-0.0725, 0.0631])

2.1 Study 1

Participants and Design. Study 1 aimed to test the effect of dress style (formal vs. informal) on multifunctional product preference by measuring real consumers' dress formality using a "shampoo" product, while excluding alternative explanations of time scarcity and social status perception. We recruited 500 participants through the Jianshu platform. Previous research shows that online data collection platforms provide high-quality data with reliable conclusions (Baer et al., 2021; Gerpott et al., 2019). Participants ranged from 18-57 years old (M_{age} = 29.30, SD = 7.65); 158 were female (65.8%) and 82 male.

Procedure. Participants first described their current clothing and rated its formality on a 7-point scale (1 = very informal, 7 = very formal). They then imagined purchasing a shampoo with two options: Product A (single-function) and Product B (2-in-1 shampoo and body wash), similar in appearance and price. Participants indicated their relative preference (1 = strongly prefer Product A, 7 = strongly prefer Product B). Next, they completed measures of time scarcity (adapted from Rudd et al., 2012: "I feel time pressure," 1 = strongly disagree, 7

= strongly agree) and social status perception (adapted from Demakakos et al., 2018: "Compared to peers, my social status is," 1 = very low, 7 = very high). Finally, they reported demographic information.

Main Effect Test. To control for position effects, half the participants saw reversed product labels. After recoding so that 1 = strongly prefer single-function shampoo and 7 = strongly prefer 2-in-1 product, we regressed dress formality on shampoo preference. Results showed dress formality significantly positively predicted preference for the multifunctional shampoo ($\beta = 0.11$, p = 0.031).

Alternative Explanations. We recoded dress formality ratings (1-3 = informal = 0, 5-7 = formal = 1) and conducted ANOVAs with time scarcity and social status as dependent variables. No significant differences emerged between conditions for time scarcity (M_{formal} = 4.67, M_{informal} = 4.49; F(1, 497) = 1.89, p = 0.17) or social status (M_{formal} = 4.24, M_{informal} = 4.09; F(1, 497) = 3.48, p = 0.069), ruling out these alternatives.

Discussion. Study 1 used a measurement approach with real consumers to initially test the relationship between dress style and multifunctional product preference. Results provide preliminary support for H1: as dress formality increases, so does preference for multifunctional products. To obtain cleaner evidence, Study 2 employs experimental manipulation.

2.2 Study 2

Study 2 used a laboratory experiment to manipulate dress style experience and further test the effect on multifunctional product preference.

2.2.1 Pretest

First, we validated experimental materials for two dress styles (formal, informal). Previous research comparing manipulation methods (drawing, photos/slides, live models/videos, written descriptions) identified color photos as superior because they depict reality better than drawings or text while controlling for unintended effects like posture and facial expressions (Shao et al., 2004). Following Wang et al. (2021), we used color photos but concealed models' heads to avoid facial expression effects (Seidel et al., 2010). We used similar dark colors to avoid color confounds. Materials are shown in Appendix 1.

Second, we selected and pretested multifunctional products. Multifunctionality is defined by the number of features (Yu et al., 2014). To avoid unrealistic perceptions from too many features, Studies 2–5 used moderately multifunctional products based on real market offerings. Study 2 used two products: digital cameras and desk lamps. Camera materials were adapted from Thompson and Norton (2011), translated into Chinese and validated by two marketing faculty and two English PhDs for reasonableness and accuracy. The single-function camera had 7 features; the multifunctional version had 21. Lamp selection was based on an independent pretest (N = 100) rating two lamps on feature quantity

and aesthetic appeal (1 = very few features/very unattractive, 7 = very many features/very attractive). The multifunctional lamp (lighting, clock, phone storage) had significantly more features (M_{low} = 2.41, M_{high} = 5.68, t = 16.39, p = 0.000) with no aesthetic difference (M_{low} = 4.79, M_{high} = 5.00, p = 0.340).

2.2.2 Main Experiment

Participants and Design. Study 2 used a single-factor between-subjects design (formal vs. informal dress) with multifunctional product preference as the dependent variable. Conducted in a university building using laptops, we randomly recruited 213 undergraduates (M_{age} = 19.03, SD = 1.80; 97 female, 116 male).

Procedure. Participants were randomly assigned to view color photos of formal or informal dress (same gender as participant) and vividly imagine wearing the clothing. They then rated the imagined outfit' s formality (1 = very informal, 7 = very formal). Next, they imagined shopping for a digital camera and desk lamp with sufficient budget and indicated relative preference for low- vs. high-function options (1 = strongly prefer Product A, 7 = strongly prefer Product B), with positions counterbalanced. Finally, they reported demographics.

Manipulation Check. All participants passed attention checks. Using G*Power 3.1 (Faul et al., 2009) for a single-factor ANOVA with two groups, effect size f = 0.5, $\alpha = 0.05$, the power for N = 213 exceeded 0.99, surpassing the 0.80 threshold. Formal dress condition participants rated their imagined attire as more formal (M = 5.61) than informal dress participants (M = 3.11; t(211) = -13.77, p = 0.000), confirming successful manipulation.

Main Effect Test. ANOVA with dress style as the independent variable and average product preference as the dependent variable revealed that formal dress participants (M = 4.93, SD = 1.26) preferred multifunctional products more than informal dress participants (M = 4.04, SD = 1.13), F(1, 211) = 23.22, p = 0.000, $^2 = 0.11$. Separate analyses for each product yielded consistent results. Regression with dress style (formal = 1, informal = 0) predicting preference showed a significant positive effect ($\beta = 0.89$, p = 0.000), unchanged when controlling for gender and age.

Discussion. Study 2 manipulated dress style and replicated the effect across high-price (camera) and low-price (lamp) products. Formal (vs. informal) dress increased multifunctional product preference regardless of price. However, without a control group, we could not determine whether the effect was driven by formal or informal dress. Study 3 addresses this by adding a control group.

2.3 Study 3

Participants and Design. Study 3 added a control group and used real product advertisements (health pot, see Appendix 3) to retest the main effect. It

also measured self-efficacy and construal level to exclude them as alternative explanations. The experiment used a single-factor between-subjects design (formal vs. informal vs. control) with product preference as the dependent variable. We recruited 240 participants (M_{age} = 29.30, SD = 7.65; 158 female, 82 male).

Procedure. Participants were randomly assigned to three conditions. Dress style was manipulated via scenario description and photos (same as Study 2). They rated the outfit's formality (1 = very informal, 7 = very formal). They then imagined attending an event wearing the assigned outfit and choosing between two health pots: Model A (7 functions) and Model B (14 functions), indicating relative preference (1 = definitely choose Model A, 7 = definitely choose Model B) with positions counterbalanced. Next, they completed self-efficacy measures (adapted from Chen et al., 2001; two items, $\alpha = 0.741$) and construal level (10 items randomly selected from the Behavior Identification Form; higher scores = more abstract). Product images were real JD.com advertisements with slogans removed. To validate the feature manipulation, participants rated perceived feature quantity (1 = very few, 7 = very many). Product familiarity and ease-of-use were measured as controls. Finally, demographics were collected.

Manipulation Checks. Using G*Power 3.1 for a single-factor ANOVA with three groups, f = 0.5, $\alpha = 0.05$, power for N = 240 exceeded 0.99. Formal dress participants rated their outfit as more formal (M = 6.44) than informal dress participants (M = 1.67; t(158) = 43.12, p = 0.000), confirming successful manipulation. Paired t-tests showed the multifunctional product was perceived to have significantly more features (M = 6.44) than the single-function product (M = 3.78; t(239) = 35.01, p = 0.000), validating the feature manipulation.

Main Effect Test. Single-factor ANOVA with dress style as independent variable, product preference as dependent variable, and product familiarity and ease-of-use as covariates revealed significant differences, F(2, 235) = 3.96, p = 0.02, ^{2} = 0.033. Formal dress participants (M = 5.49, SD = 1.67) preferred multifunctional products more than informal dress participants (M = 4.87, SD = 1.94). Formal dress did not differ from the control group (M = 5.56, SD = 1.63), replicating the main effect.

Alternative Explanations. Using PROCESS (Model 4, 5,000 bootstraps; Hayes, 2013) with dress style as predictor (0 = informal, 1 = formal), product preference as outcome, and self-efficacy and construal level as simultaneous mediators, indirect effects through self-efficacy (indirect effect = -0.0001, 95% CI = [-0.0255, 0.0205]) and construal level (indirect effect = -0.0044, 95% CI = [-0.0406, 0.0233]) were non-significant, ruling out these alternatives.

Discussion. Study 3 replicated the main effect with a control group and real product advertisements. However, questions remain about the underlying mechanism and whether effects extend to behavioral choice. Study 4 addresses these by testing mediation and providing behavioral evidence.

3 Study 4: Testing the Mediating Role of Efficiency Goals

Participants and Design. Study 4 aimed to test the mediating mechanism and provide behavioral choice evidence. It used a single-factor between-subjects design (formal vs. informal dress) with relative preference and product choice as dependent variables. We recruited 320 participants (209 female, 111 male; M_{age} = 30.33, SD = 8.63).

Procedure. Participants were randomly assigned to imagine wearing formal or informal dress (same materials as Study 2). To reinforce the manipulation, they described the outfit and rated its formality (1 = very informal, 7 = very formal). They then imagined shopping for a digital camera with sufficient budget, choosing between Model A (7 functions) and Model B (21 functions), with positions counterbalanced. They indicated relative preference and product choice. Efficiency goals were measured using two items adapted from Han and Broniarczyk (2021): "I want to complete tasks as efficiently as possible" and "I won' t waste any time completing tasks" (1 = strongly disagree, 7 = strongly agree, $\alpha = 0.764$). Demographics were collected at the end.

Manipulation Check. Using G*Power 3.1 for a single-factor ANOVA with two groups, f = 0.5, $\alpha = 0.05$, power for N = 320 exceeded 0.99. Formal dress participants rated their outfit as more formal (M = 6.21) than informal dress participants (M = 1.82; t(318) = 40.52, p = 0.000), confirming successful manipulation.

Main Effect Test. Independent samples t-test on product preference revealed a significant main effect: formal dress participants (M = 6.00, SD = 1.17) preferred the multifunctional camera more than informal dress participants (M = 4.71, SD = 2.08; t(318) = 6.93, p = 0.000, d = 0.76). Controlling for gender and age did not change results, F(1, 316) = 48.40, p = 0.000, ^{2}p = 0.13. Chi-square test on camera choice showed significant differences: formal dress participants chose the multifunctional camera more often (62.3%) than informal dress participants (37.7%; ^{2} = 35.29, p = 0.000, $\phi = 0.332$), providing behavioral evidence.

Mediation Analysis. We tested H2 using Model 4 (5,000 bootstraps; Preacher & Hayes, 2008) with dress style (0 = informal, 1 = formal), efficiency goals, and camera preference. Results showed efficiency goals significantly mediated the effect (indirect effect = 0.27, SE = 0.11, 95% CI: [0.0694, 0.4853]), supporting H2.

Figure 2 Mediation Path Diagram for Study 4

Discussion. Study 4 replicated the main effect at the behavioral choice level and identified efficiency goals as the underlying mechanism. Formal (vs. informal) dress strengthened efficiency goals, promoting multifunctional product preference, supporting H2.

4 Study 5: The Moderating Role of State Self-Esteem

Participants and Design. Study 5 manipulated state self-esteem to test its moderating role in the dress style → efficiency goal → multifunctional preference process. Using a 2 (dress style: formal vs. informal) × 2 (state self-esteem: high vs. low) between-subjects design, we recruited 320 participants.

Procedure. Participants were randomly assigned to four conditions. State self-esteem was manipulated via a thought task (Grumm et al., 2009): high self-esteem participants listed positive personal traits and their feelings, while low self-esteem participants listed negative traits. They then completed a three-item state self-esteem scale (Webster et al., 2022; e.g., "I feel frustrated and disappointed with myself,"1 = strongly disagree, 7 = strongly agree). Next, they imagined attending an event wearing formal or informal dress (same materials) and choosing between two digital cameras (7 vs. 21 functions), rating relative preference (1 = definitely choose Model A, 7 = definitely choose Model B) with positions randomized. Efficiency goals were measured as in Study 4. Manipulation checks assessed perceived formality and state self-esteem. Demographics were collected at the end.

Manipulation Checks. After excluding 5 careless responses, 315 valid responses remained (M_{age} = 31.25, SD = 8.74; 69.1% female). Using G*Power 3.1 for a 2$×$2 ANOVA, f = 0.4, α = 0.05, power for N = 315 exceeded 0.99. Independent t-tests confirmed successful manipulation of dress formality (M_{formal} = 6.40, SD = 0.57 vs. M_{informal} = 1.83, SD = 0.94; t(313) = 52.34, p = 0.000, d = 5.89) and state self-esteem (M_{high} = 5.72, SD = 0.95 vs. M_{low} = 3.00, SD = 1.28; t(313) = 21.35, p = 0.000, d = 2.41).

Main Effect Test. A 2 × 2 ANOVA on product preference revealed a significant interaction, F(1, 311) = 4.34, p = 0.038, ^{2}p = 0.008. For high self-esteem individuals, formal dress increased preference (M = 5.91, SD = 1.29) compared to informal dress (M = 5.31, SD = 1.72), F(1, 311) = 6.23, p = 0.013, ^{2}p = 0.02. For low self-esteem individuals, dress style had no effect (M_{formal} = 5.58, SD = 1.61 vs. M_{informal} = 5.69, SD = 1.38; F(1, 313) = 0.19, p = 0.660).

Moderated Mediation. Using PROCESS Model 7 (5,000 bootstraps; Hayes, 2018), the moderated mediation was significant (indirect effect = 0.14, 95% CI = [0.0093, 0.4119]). For high self-esteem, efficiency goals mediated the effect (indirect effect = 0.46, 95% CI = [0.1600, 0.8278]). For low self-esteem, the mediation disappeared (indirect effect = -0.007, 95% CI = [-0.0725, 0.0631]).

Figure 3 Moderating Effect of State Self-Esteem in Study 5

Discussion. Study 5 supported H3 and H4: formal dress promoted multifunctional product preference among high state self-esteem participants but not low self-esteem participants. State self-esteem moderated the mediated pathway—low self-esteem weakened the efficiency goals activated by formal dress, reducing multifunctional preferences.

5.1 Research Conclusions

Given that consumers frequently make decisions while wearing different dress styles, understanding how dress influences consumption decisions is important. With multifunctional products proliferating, identifying factors affecting preferences is crucial. This paper, from the perspective of consumers' own dress, examines how dress style influences multifunctional product preferences. Five studies provide consistent support. Study 1 found that preference for multifunctional products increases with dress formality. Studies 2 and 3 provided causal evidence that formal (vs. informal) dress promotes multifunctional preferences. Study 4 revealed efficiency goals as the mediating mechanism. Study 5 showed the effect disappears under low state self-esteem. Competing explanations of time scarcity, social status, self-efficacy, and construal level were ruled out.

5.2 Theoretical Contributions

This research makes three main theoretical contributions. First, it advances marketing literature on consequences of consumer dress style. While previous research examined effects on overall purchase intentions (Cutright et al., 2019) and healthy food preferences (Wang et al., 2021), we investigate multifunctional product preferences, expanding the boundary conditions of dress style effects. Additionally, we show state self-esteem moderates these effects—high self-esteem strengthens the effect, while low self-esteem eliminates it—providing boundary considerations for dress style research.

Second, we contribute a new antecedent variable to multifunctional product preference literature. Previous research focused on impression management motivation (Thompson & Norton, 2011), construal level (Yu et al., 2014), usage frequency estimates (Goodman & Irmak, 2013), and price cues (Lee & Zhao, 2014). We identify a dress style effect in multifunctional product marketing, offering a new antecedent and research perspective, while answering the practical question of when consumers prefer multifunctional products.

Third, we supplement efficiency goal literature in human resources and marketing. While HR surveys suggest formally dressed employees perceive higher productivity (Karl et al., 2013), no empirical test of the dress style-efficiency goal relationship existed. We empirically demonstrate that efficiency goal activation drives formally dressed consumers' multifunctional preferences in a consumption context. Additionally, while marketing research found formal dress activates clothing-image congruence (Wang et al., 2021) and increases purchase confidence (Cutright et al., 2019), we reveal efficiency goals as a novel mechanism through which dress style influences consumers.

5.3 Practical Implications

This research provides guidance for companies and marketers in designing and promoting multifunctional products. At the product design level, companies

should consider multifunctional designs for office supplies. At the promotion level, sales staff should tailor recommendations based on consumers' dress styles —specifically, recommending multifunctional products to formally dressed consumers.

5.4 Limitations and Future Directions

This research has several limitations. First, conclusions apply only to moderately multifunctional products. Across five studies, we used products with 2–3× feature ratios (cameras: 7 vs. 21; lamps: 1 vs. 3; shampoo: 1 vs. 2; health pots: 7 vs. 14). While the main effect holds at this ratio, we did not test whether it persists or reverses as feature count increases further. More features increase perceived usage costs (Yu et al., 2014; Mukherjee & Hoyer, 2001), potentially hindering preference. Although Study 3 measured perceived difficulty and found it higher for multifunctional products, this did not affect the main effect. Future research should examine whether the effect disappears beyond a critical feature threshold.

Second, we only examined state self-esteem as a moderator. Other potential moderators warrant investigation, such as dress style preference, as previous research found it affects self-perception (Peluchette & Karl, 2007). Individuals who prefer formal dress may have higher efficiency goals, affecting multifunctional preferences. Future research should explore additional moderators and other consequences of consumer dress style on decision-making preferences, a currently understudied area with substantial exploration potential.

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Appendix 1

Study 1 Dress Formality Measurement Instructions
Please describe your current clothing, e.g., top is···, pants are···, shoes are···

Appendix 2

Study 2 Dress Style Manipulation Instructions
Both formal and informal conditions received identical instructions: "Please carefully view the photo and vividly imagine yourself wearing the same clothing as shown. Answer subsequent questions based on this imagination."

Study 2 Product Materials

Appendix 3

(1) Study 3 Dress Style Manipulation Instructions
A company named "TUEV" has invited you to their event and arranged clothing for you to wear, as shown in the photo (same as Study 2). Please carefully observe the clothing and vividly imagine yourself wearing it.

(2) Study 3 Multifunctional and Single-Function Product Materials

Note: Figure translations are in progress. See original paper for figures.