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Article — Published Version

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Journal of Product Innovation Management

Provided in Cooperation with:

John Wiley & Sons

Suggested Citation: Hettich, Dominik; Bornemann, Torsten; Hattula, Stefan (2025) : Understanding older consumers' new product-related information behaviors - A life-span theory perspective, Journal of Product Innovation Management, ISSN 1540-5885, Wiley, Hoboken, NJ, Vol. 42, Iss. 6, pp. 1068-1088,
<https://doi.org/10.1111/jpim.12779>

This Version is available at:

<https://hdl.handle.net/10419/330150>

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Understanding older consumers' new product-related information behaviors—A life-span theory perspective

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Associate Editor: Anna Shaojie Cui

Abstract

For firms facing an aging society, substantial adoption gaps that often exist for new product alternatives between older and younger consumers pose a significant challenge. To examine the root cause of this phenomenon, our research draws on life-span theory and is based empirically on a set of studies involving 2050 participants in both field and controlled settings. As a first contribution, we show that, in contrast to growth-oriented younger consumers, older consumers exhibit lower levels of novelty seeking because of their relatively higher prioritization of maintenance goals. This predisposition leads older consumers to perceive the inconvenience induced by the possible behavior change associated with purchasing new (vs. established) products in a given category as more salient than potential benefit gains. In comparison, younger consumers perceive benefit gains to be more salient. For established product alternatives with familiar benefits, there is no such clear age-related difference. As a second contribution, we propose easy-to-implement adaptations of the communication strategy to address this issue, and we examine the effectiveness of these adaptations in a field study at the point-of-purchase. Specifically, since prevention-framed (vs. promotion-framed) claims are more compatible with older consumers' maintenance orientation, they can increase the salience of benefit gains over behavior change for new product alternatives and foster older consumers' product-related information behaviors and new product consideration. These results have important implications for researchers and managers as they refine the understanding of older consumers' acceptance of new products.

KEYWORDS

aging, information processing, life-span theory, new product adoption, regulatory focus theory

1 | INTRODUCTION

The European Commission Report on the Impact of Demographic Change (European Commission, 2020, p. 19) states that “older consumers account for a large part of the economy and the consumption of people above 50 across the European Union was €3.7 trillion in 2015. It is projected to rise at around 5% per year, reaching €5.7 trillion by 2025.” A similar development can be observed in the United States, where in 2035, older adults will outnumber children for the first time in U.S. history (U.S. Census Bureau, 2018).

At the same time, this decisive group of older consumers engages less with new product alternatives—on average—as compared to younger ones. New products in the context of this research denote products for which established alternatives exist in the same category. What differentiates these new products is that they may provide a benefit over the established alternatives that may come at the (perceived) cost of a required change (e.g., in terms of product usage behavior/habits; Heidenreich & Kraemer, 2015; Moreau et al., 2001). Research on consumer buying behavior reveals that with increasing age, a tendency to prefer established product alternatives at the expense of such new alternatives in a given product category emerges (Lambert-Pandraud et al., 2005; Laukkanen et al., 2007). Likewise, market research shows that the segment of consumers aged 64–74 is least likely to try out new product alternatives—only 31% of that age group indicate that they try out new product alternatives as compared to 55% of those aged less than 31 (Beer, 2019). For firms marketing innovative alternatives in existing product categories, the growth of a consumer segment that exhibits a lower tendency to adopt new products poses a significant challenge.

Life-span theory, a meta-theoretical perspective in developmental psychology, suggests that with increasing age, an individual's goals shift from a focus on growth, knowledge acquisition, and developmental gains to a focus on maintenance of the status quo and the avoidance of developmental losses (Baltes et al., 1998; Heckhausen, 1997). The relative prioritization of maintenance goals over growth and knowledge acquisition goals may help explain why older consumers are less likely to learn about and try out new product alternatives. While established products inherently align with an orientation toward maintaining the status quo based on known benefits, new products may be associated with perceptions of potential benefits *and* behavior changes (Heidenreich & Kraemer, 2015).

We argue that older consumers are predisposed to perceive a potential change that may be induced by a

Practitioner points

- Firms should recognize that older consumers prioritize maintenance over growth, leading to lower levels of novelty seeking compared to younger, growth-oriented consumers.
- Given their motivational disposition, older consumers perceive the inconvenience of behavior change with new products as more significant than potential benefits, explaining their lower adoption rates compared to younger consumers who focus more on benefit gains.
- To encourage older consumers to adopt new products, marketing communications should be adapted to align with their maintenance orientation by using prevention-framed claims that emphasize how a product helps to avoid negative outcomes.

new product alternative and endanger the status quo as relatively more salient, due to the age-related prioritization of maintenance goals. Therefore, they may be less likely to engage in seeking further new product-related information—a prerequisite to discern potential benefits over existing alternatives (Talke & Heidenreich, 2014). In contrast, growth-oriented younger consumers should be more likely to perceive potential benefit gains of the new product.

A first goal of our research, therefore, is to provide a sound theoretical rationale, backed by empirical evidence, for elderly consumers' lower tendency to seek out information about and ultimately purchase new product alternatives as compared to younger consumers.

The observation that older consumers tend to favor an established product alternative over a new one when (re)purchasing in an existing product category, however, does not rule out innovative buying behavior per se. When the first e-bikes became available as an alternative to conventional bikes, older consumers were the first to embrace this new alternative: “It started with elderly people. They used it because they weren't able to cycle on their own strength. [...] However, with the e-bike they could stay mobile” (Peine et al., 2017, p. 439). What stands out in this case is that the new alternative in the bike category had a compelling benefit for older consumers—it enabled them to maintain something they value (mobility) obviously better than the existing alternative, hence directly catering to a maintenance goal.

For the average new alternative in a given product category that is marketed broadly (such as most

consumer electronics or home appliances), however, benefits may be less obvious, and their appreciation requires a certain level of information processing. In such contexts, the tendency to favor an existing over a potentially behavior-disrupting new alternative likely emerges since older consumers may forego the evaluation of information about new alternatives.

As a second goal, we therefore build on our understanding of how older consumers' adoption behavior differs from younger consumers to identify communication measures that align with older consumers' goal priorities to help shift their new product perception from the anticipation of disrupting changes to the acknowledgment of potential benefits.

Practitioner-oriented outlets suggest that marketing communication often does not get it right when addressing older consumers to promote new product alternatives: "Why marketing to seniors is so terrible" (Beer, 2019); "Why businesses misunderstand old people" (Coughlin, 2017). At the same time, analysts suggest that a key issue to increase acceptance may be the alignment of new product perception (using appropriate communication) with older consumers' goals (Coughlin, 2017; Starkey, 1997).

Drawing on life-span theory and regulatory-framing literature, we show in both controlled and field settings that for older consumers, marketing communication should stress a new product's benefits as a means to preventing deterioration of the status quo—that is, employ prevention-framed (as opposed to promotion-framed) claims (Mogilner et al., 2008). Resonating with older consumers' maintenance orientation (Cole et al., 2008), such claims can mitigate perceptions of disruption and foster information processing (Aaker & Lee, 2001).

The manuscript is organized as follows. In the next section, we introduce life-span theory, discuss how concepts such as maintenance orientation and growth orientation relate to information-related behaviors, and hypothesize how these concepts potentially align with different types of regulatory framing. We then present the results of four studies. Study 1 is a large-scale survey study with both younger and older consumers that tests basic assumptions made by life-span theory more generally. The subsequent studies examine consumers' evaluation of specific product stimuli. Study 2, an online experiment, demonstrates an age-related increase in perceived disruption when consumers face the replacement of a product with a new alternative. Study 3 explores how regulatory-framing affects older consumers' perception of disruption and decisions about product replacement in an online setting. Finally, Study 4 examines the effectiveness of regulatory framing for both younger and older consumers at the point-of-purchase. We conclude with a

discussion of implications and an agenda for future research.

2 | THEORETICAL BACKGROUND AND HYPOTHESES

2.1 | Life-span theory—Age-related shifts in goal priorities and novelty seeking

Life-span theory explains an integral part of human goal-directed behavior by perceptions related to the remaining lifetime (Löckenhoff, 2018). A key assumption is that over the course of life, "individuals in general adapt their regulatory strategies to the opportunities and constraints encountered" and that "older adults [...] respond to a more constrained developmental ecology" as compared to younger adults (Heckhausen, 1997, p. 177). Life-span theory further postulates that individuals adapt to the respective life stage by altering the relative priority of two broad motivational forces: (i) a *growth orientation* that aims at realizing developmental gains, reaching higher levels of functioning, and acquiring knowledge, and (ii) a *maintenance orientation* that aims at preserving the current level of functioning and the avoidance of a deterioration of the developmental status quo (Baltes et al., 1998).

While both motivational domains are supposed to exist over the course of life, life-span theory argues that the motivational goal priorities shift with age from a prioritization of growth orientation over maintenance orientation in early adulthood to a reverse pattern in later life, where maintenance and loss prevention become more important (Baltes et al., 1998; Heckhausen, 1997). Hence, for younger adults, "when time is perceived as open-ended, goals that become most highly prioritized are most likely to be those that are preparatory, focused on gathering information, on experiencing novelty, and on expanding breadth of knowledge" (Carstensen, 2006, p. 1914). The shifting goals proposed by life-span theory directly imply a higher openness to novel information in early adulthood that decreases over the course of life.

In the context of new products, different types of information-related behaviors exist. First, at the most general level (i.e., not tied to the immediate evaluation of a specific product), consumers may exhibit variation in their *general tendency to seek out novel information* through some internal drive or motivating force—referred to as *novelty seeking* in the innovation adoption literature (Hirschman, 1980). Second, in the context of evaluating a specific product, consumers may exhibit variation in the extent to which they (a) *seek (more)*

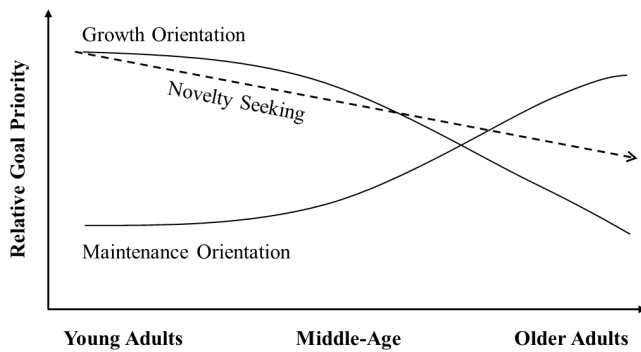


FIGURE 1 Relative goal priority and novelty seeking over the life span.

information about a given product and (b) *process available information* about a given product.

Life-span theory, as a general motivational theory, has direct implications for novelty seeking, the first and more general type of information-related behavior. A core aspect of novelty seeking is that “the consumer may wisely decide to seek information that is not ‘useful’ now, but may assume great importance in the future” (Hirschman, 1980, p. 284). Mapping the concept of novelty seeking on the motivational forces discussed in life-span theory, novelty seeking should be more likely to emanate from a growth orientation (seeking for information and novelty; Carstensen, 2006), hence in the case of younger individuals who foresee relatively more future time than do older ones. Figure 1 (partly adapted from Baltes et al., 1998, p. 578) visualizes this idea by bringing together motivational tendencies proposed by life-span theory and the assumed pattern of novelty seeking over the life span.

Formally, we hypothesize:

Hypothesis 1. With increasing age, consumers perceive a more limited future time perspective that—on average—increases the relative priority of maintenance orientation over growth orientation and leads to a lower tendency to seek out novel information (i.e., novelty seeking).

Since new product-related information acquisition behavior is an important precursor of new product adoption (Manning et al., 1995), a generally lower tendency to seek out novel information may at least partly explain heterogeneity in new product adoption behavior between younger and older consumers. We now turn to potential differences in information-related behaviors when evaluating specific established and new product alternatives.

2.2 | Linking goal priorities, (new) product perception, and product-related information behaviors

To understand the lower acceptance of new over established products among older consumers, we complement our theoretical perspective based on life-span theory with the literature on goal compatibility. This literature proposes that the alignment of situational goals with an individual’s mastery target goal is a crucial determinant of intrinsic motivation and task engagement (Durik & Harackiewicz, 2003). In the context of concrete purchase decisions, consumers’ responses to a product are influenced by how well product characteristics align with their goals (Pena-Marin & Yan, 2021), leading to the most positive consumer responses when characteristics and goals are compatible (White & Simpson, 2013).

In this regard, established and new product alternatives are assumed to trigger different perceptions. While established products are perceived as a continuation of the status quo, new alternatives may be perceived as potentially providing a benefit over the status quo that, however, may entail some degree of change or discontinuity, such as the adaptation to new usage patterns (Castaño et al., 2008; Heidenreich & Kraemer, 2015; Ma et al., 2014).

Life-span theory suggests that established products align with older consumers’ maintenance goal priority, providing a good means of maintaining continuity. For novel product alternatives, however, perceptions of potential discontinuity and change that are incompatible with their maintenance orientation may induce them to forego further information processing that would be required to discern the new alternative’s potential benefit (Heidenreich & Kraemer, 2015; Oreg, 2003). Conversely, growth-oriented younger consumers will tend to perceive the sense of discontinuity introduced by new products to be goal compatible and hence focus more on the potential benefits of new products. Thus, we hypothesize:

Hypothesis 2a. For older consumers, when considering new versus established products, the possible inconvenience of behavior change will—on average—be relatively more salient than the potential benefit gains of the new product, whereas for younger consumers, the potential benefits will be more salient.

Hypothesis 2b. High salience of a potential behavior change will lead older consumers to exhibit less product-related information seeking and ultimately consideration.

The preceding considerations suggest that—in the absence of an obvious benefit that clearly and directly caters to a maintenance goal—older consumers may resist new alternatives prior to engaging in processing information with regard to such products and instead tend to prefer an established option (Heidenreich & Kraemer, 2015; Talke & Heidenreich, 2014). In the following, we therefore turn to the question of how older consumers' information-related behaviors with regard to new product alternatives can be stimulated.

2.3 | Prevention framing—Motivating information-related behaviors through goal compatibility

We propose that communication that is congruent with the mastery goal of maintenance orientation can shift older consumers' perception from the salience of disruption-induced inconvenience to the potential benefits of new product alternatives. In this respect, product claims may employ different frames to emphasize the benefit of a product, inducing either prevention-focused or promotion-focused goals (Crowe & Higgins, 1997; Mogilner et al., 2008). Promotion claims use words that highlight a product's ability to achieve positive outcomes, while prevention claims point to the ability to avoid negative outcomes. These two communication frames align well with the motivational forces suggested by life-span theory, implying that products inherently deviating from consumers' mastery goals can still be appealing when (nonobvious) linkages to the mastery goal become salient.

Specifically, prevention claims can highlight new products as vehicles to protect consumers from unfavorable changes, providing a situational goal that addresses older consumers' mastery goal to preserve the current level of functioning (Baltes et al., 1998; Cole et al., 2008). Older consumers, who prioritize a maintenance orientation, should hence be more receptive toward new product communication that uses prevention claims. In contrast, promotion claims do not align with a maintenance orientation but inherently activate a future-related discontinuity potential that may aggravate the motivational mismatch. Thus:

Hypothesis 3. Compared to promotion-framed claims, prevention-framed product claims shift older consumers' relative focus from the possible inconvenience of behavioral change to the potential benefits of adopting new product alternatives.

Research on goal compatibility further suggests that the presence of goals leads to selective information processing in that consumers prefer goal-compatible information and avoid goal-incompatible information (Ahluwalia, 2002). People are motivated to invest more effort—that is, seek out and process information—to achieve a situational goal (such as obtaining a maintenance-compatible benefit) when this investment increases the likelihood of realizing the mastery goal.

We propose that communication that is congruent with older consumers' mastery goal of maintenance orientation may shift their focus from anticipated changes toward potential benefits. Therefore, we hypothesize that prevention claims will increase older consumers' attention to information on the benefits of new products, thus stimulating information-related behaviors. More formally:

Hypothesis 4. Compared to promotion-framed product claims, prevention-framed claims stimulate older consumers' information-related behaviors and subsequent consideration and choice of new products.

3 | EMPIRICAL APPROACH

3.1 | Operationalizing age

According to life-span theory, human development is not linear but marked by both commonalities and individual differences. Thus, the onset and offset of life stages vary among individuals (Baltes et al., 1998). Researchers adopting a life-span perspective have sought to generalize patterns of typical life trajectories (Lövdén et al., 2005). By defining age ranges at which major life events, such as retirement and age-related health conditions, are expected to be anticipated or experienced by most aging individuals (Lowe et al., 2022), they aim to study age-related behavioral differences as cumulative life course processes (e.g., Carstensen, 2006). For instance, young adults are frequently defined as those aged 18–35, and older adults as those aged 55 and above (Sherman et al., 2001), with further subdivisions like late adulthood (55–69) and old age (70–89; Li et al., 2004).

The relatively early age threshold of 55 is based on assumed significant cognitive and role transitions around this age, supported by neuropsychological and social psychological insights (e.g., Lemire et al., 2024; Meyer-Wyk & Wurm, 2024). However, higher thresholds, particularly 65 (e.g., Williams and Drolet, 2005), are also common, reflecting societal changes in the perception of old

age due to increased life expectancy and better health in older age. Moreover, other authors suggest treating age as a continuous variable to circumvent such cutoffs altogether (e.g., Wagner et al., 2019).

As outlined in our studies, we employ both a comparative approach between age groups and age as a continuous variable. For robustness purposes in the former case, we analyzed our data employing both common old age thresholds (i.e., 55 and 65) and recruited participants from the broad and inclusive age ranges of 18–35 and 55 and older.

3.2 | Overview of studies

We test our hypotheses in a series of five studies involving 2050 participants—four studies are part of the main manuscript, and one additional study is featured in Appendix E, Supporting Information S1. All studies received institutional review board (IRB) approval.

Study 1 is a survey study with 604 participants, aimed at examining the relationships between central constructs from life-span theory (age, future time perspective, and motivational goal priority) and novelty seeking. Results provide evidence for the reasoning that older consumers (as compared to younger consumers) perceive a more limited remaining lifetime and exhibit a goal priority on maintenance orientation over growth orientation that subsequently is associated with a lower tendency to seek out novel information (i.e., novelty seeking; Hypothesis 1). Study 2 is an online experiment with 539 participants, designed to examine age-related differences in consumers' perceptions of new and established product alternatives in terms of the salience of a possible behavior change against potential product benefits when facing a purchase decision (Hypotheses 2a and 2b). Study 3, an online experiment with 407 participants, builds on this observation. It introduces regulatory framing of product claims as a possible intervention to shift older consumers' focus from perceptions of behavior change to potential product benefits of new product alternatives (Hypothesis 3), subsequently enhancing information seeking and consideration (Hypothesis 4). Study 4 is a field experiment in a retail environment, where we observe information processing and product choice behavior of 286 older and younger shoppers for new and established products across four product categories. Moreover, we systematically vary the respective product claims as being either promotion-framed or prevention-framed. Results reveal that older consumers spend significantly more time on processing information about a new product when it is advertised with a prevention claim (as compared to a promotion

claim). This extended information processing is also reflected in later product choice (Hypothesis 4). Finally, one additional study replicates these latter findings in an online experiment involving 214 participants, thus providing additional evidence for Hypothesis 4. This latter study (Study 5) is presented in Appendix E, Supporting Information S1.

4 | STUDY 1: SURVEY STUDY ON MOTIVATIONAL GOAL PRIORITY ACROSS THE LIFE SPAN AND NOVELTY SEEKING

Study 1 is a large-scale survey to examine whether older consumers' relative motivational shift from growth orientation toward maintenance orientation resulting from age-related changes in future time perception relates to their self-reported novelty-seeking tendency (Hypothesis 1).

4.1 | Method

4.1.1 | Sample and design

We recruited 604 United Kingdom- and Ireland-based Prolific Academic panelists (60.430% female, 0.003% non-binary) to participate in this survey by completing a self-administered questionnaire online. Respondents were either aged 35 years and younger (representing younger consumers, $N = 304$, mean age = 26.533) or 55 years and older (representing older consumers, $N = 300$, mean age = 62.107; following Laukkanen et al., 2007; Price et al., 2000). As a robustness check, we also provide results of the analyses for participants aged 65 and older.

4.1.2 | Procedure and measures

The questionnaire started with a brief welcome page followed by an initial section in which participants gave their informed consent and answered demographic questions about their gender and age. The latter information was used to verify that the targeted age ranges were matched, which was true for all respondents. To reduce common method variance, we instructed participants to answer the questions as honestly as possible, while we assured them that there were no right or wrong answers and that only their personal experience or knowledge was required to answer the questions. We also prevented participants from navigating backward through the questionnaire and reversed the wording of some items to

discourage erratic response patterns (MacKenzie & Podsakoff, 2012).

Subsequent screens of the questionnaire included measures to examine consumers' reflections on life changes and their motivational dispositions with respect to seeking information related to new products. Specifically, we asked respondents to rate their level of agreement with 10 statements adopted from Lang and Carstensen (2002) capturing future time perspective ($\alpha = 0.916$; see Appendix A, Supporting Information S1 for all items). Unless otherwise specified, all items included in our studies were assessed using 7-point Likert scales ranging from "strongly disagree" to "strongly agree." Next, participants were asked to self-assess their motivational goal priorities. Participants' growth orientation was measured based on three items taken from Van de Walle et al. (2001) ($\alpha = 0.862$); maintenance orientation was assessed via three items from Mares, Oliver, and Cantor (2008) ($\alpha = 0.704$). Finally, we used seven items from the scale developed by Manning, Bearden, and Madden (1995) ($\alpha = 0.929$) to measure participants' novelty-seeking tendencies. After completion of the study, participants were thanked and debriefed.

4.2 | Results

In addition to a priori procedural techniques, we employed two statistical methods to empirically assess the extent of common method variance among our self-report measures of future time perspective, developmental goal orientation, maintenance goal orientation, and novelty seeking. First, the Harman's single factor test indicated that only 28.394% of the variance in the data was accounted for by the first factor, pointing to the presence of multiple factors in the data and a low threat of common method variance. Second, we explored the effect of an unmeasured latent methods factor in confirmatory factor analysis (Podsakoff et al., 2003). The results of the confirmatory factor analysis showed acceptable fit values for the proposed four-factor model ($\chi^2 = 999.185$, $df = 224$, $p < 0.001$, comparative fit index [CFI] = 0.912, Tucker-Lewis-index = 0.901, root mean square error of approximation [RMSEA] = 0.076). When the unmeasured latent factor was included in the model, the inter-correlations among the latent factors did not change substantially, and the pattern of results did not change, as the parameter estimates in the measurement models remained significant in the same direction (Stock et al., 2019). Thus, both tests suggest that common method variance does not pose a threat in our study.

Next, we analyzed our measured constructs in terms of age-related differences. To ensure robustness, we also

analyzed a subset of older consumers aged 65 years and older (65+), reporting these results alongside those from the broader sample of participants aged 55 years and above (55+). The findings were consistent, the group size for the 65+ subset, however, was reduced to $n = 91$, compared to $n = 300$ for the 55+ group. Our findings demonstrate age-group differences in future time perspective. Younger consumers tended to see their future time as extensive ($M_{\text{young}} = 4.982$), whereas older consumers perceived their remaining time in life as rather limited (55+: $M_{\text{old55+}} = 3.758$, $F(1, 602) = 205.235$, $p < 0.001$, *partial* $\eta^2 = 0.254$; 65+: $M_{\text{old65+}} = 3.507$, $F(1, 393) = 158.480$, $p < 0.001$, *partial* $\eta^2 = 0.287$). Moreover, life-span theory suggests a priority of maintenance over growth-oriented goals for older consumers and vice versa for younger ones. We therefore followed previous research (Lockwood et al., 2002; Sinha & Wang, 2013) and constructed a measure reflecting the motivational goal priority by subtracting scores on the z-standardized growth orientation subscale from the scores on the z-standardized maintenance orientation subscale. Positive (negative) scores reflect relative dominance (subordination) of maintenance compared to developmental goals. Indeed, we find the proposed positive and significantly higher scores for older in contrast to younger consumers; for the latter, we find a negative mean score ($M_{\text{young}} = -0.321$, 55+: $M_{\text{old55+}} = 0.325$; $F(1, 602) = 29.404$, $p < 0.001$, *partial* $\eta^2 = 0.047$; 65+: $M_{\text{old65+}} = 0.291$; $F(1, 393) = 12.281$, $p < 0.001$, *partial* $\eta^2 = 0.030$). Finally, with respect to consumers' novelty seeking, we also find age-related differences, with younger consumers showing higher tendencies ($M_{\text{young}} = 3.752$, 55+: $M_{\text{old55+}} = 3.400$; $F(1, 602) = 9.437$, $p = 0.002$, *partial* $\eta^2 = 0.015$; 65+: $M_{\text{old65+}} = 3.104$; $F(1, 393) = 15.634$, $p < 0.001$, *partial* $\eta^2 = 0.038$).

Next, to test for an indirect age effect via future time perspective and motivational goal priority on novelty seeking, we conducted a serial mediation analysis with bootstrapping using 5000 resamples (Preacher & Hayes, 2008). In this model, novelty seeking served as the dependent variable, age group (contrast-coded: -1: young, 1: old) was the independent variable, while future time perspective and motivational goal priority were sequential mediators. All variables were z-standardized.

The results (see Figure 2) revealed a significant negative sequential indirect effect from age group via future time perspective and motivational goal priority to novelty seeking (55+: $\beta = -0.021$, standard error [SE] = 0.010, 95% confidence interval [CI] [-0.043, -0.003]; 65+: $\beta = -0.036$, SE = 0.016, 95% CI [-0.073, -0.010]) as the bias-corrected CI did not include zero. We conducted an additional mediation analysis with future time

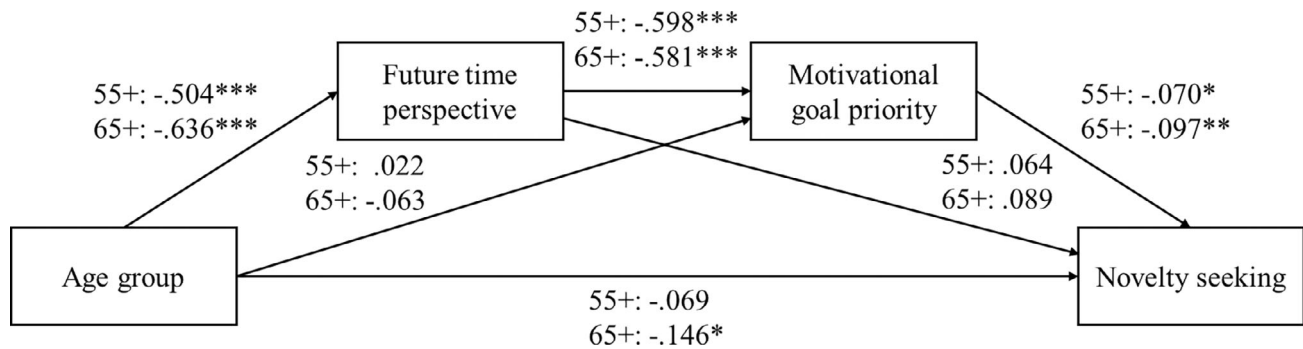


FIGURE 2 Mediation model Study 1. Standardized regression coefficients. 55+ refers to the effect for the sample of participants aged 55 and older, 65+ refers to the effect of the subset of the sample aged 65 and above. * $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$.

perspective as a single mediator. The results revealed that future time perspective mediates the age group effect on novelty seeking (55+: $\beta = -0.053$, $SE = 0.025$, 95% CI $[-0.104, -0.005]$; 65+: $\beta = -0.092$, $SE = 0.040$, 95% CI $[-0.176, -0.012]$). However, when we added motivational goal priority to the model, the mediation effect via future time perspective became insignificant (55+: $\beta = -0.032$, $SE = 0.027$, 95% CI $[-0.085, 0.021]$; 65+: $\beta = -0.057$, $SE = 0.044$, 95% CI $[-0.144, 0.032]$).

4.3 | Discussion

The results of Study 1 provide empirical evidence on the interrelationships between age, future time perspective, and motivational goal priority as suggested by life-span theory (Baltes et al., 1998). Moreover, it links these concepts to novelty seeking as an important precursor of innovation adoption behavior (Manning et al., 1995). The results confirm Hypothesis 1, suggesting that in general, motivational differences make it less likely that older consumers actively seek novel information as compared to younger ones. Study 2 focuses on the evaluation of a specific product to test whether a new (vs. established) alternative is more likely to induce change-related perceptions as compared to benefit-related perceptions, hence blocking further information seeking with regard to the new product.

5 | STUDY 2: ONLINE EXPERIMENT ON NEW PRODUCT PERCEPTION

The objective of this online experiment was to examine age-related differences in consumers' perceptions of new and established product alternatives regarding the salience of a possible behavior change-induced inconvenience against potential product benefits when facing a purchase decision (Hypothesis 2a). Furthermore, we

sought to explore how this relationship influences consumers' subsequent consideration of product alternatives through their engagement in product-related information seeking (Hypothesis 2b).

5.1 | Method

5.1.1 | Sample and design

In this study, we employed a continuous age measure and recruited 613 United Kingdom-based panelists from [Prolific.com](https://www.prolific.com), stratified evenly across three age groups—35 and younger, aged 36–54, and 55 and older—to ensure equal representation of different age ranges (Iacobucci & Churchill, 2010). These participants were pre-screened to meet a minimum acceptance rate criterion of 95%.

The study employed a two-condition (innovativeness: established vs. new) between-subjects design with random treatment assignment. Participants engaged in a hypothetical shopping scenario in which they were presented with either an established or a new electric toothbrush. To prevent the perception of the established toothbrush as an innovative product, we specified in the study description that only regular users of electric toothbrushes were eligible for participation in the study. Based on a screening question, we had to exclude 65 individuals who did not report regular use of electric toothbrushes. Additionally, 11 participants were excluded for failing one or two attention checks, leaving a final sample of 539 participants (62.523% female; 0.009% nonbinary; minimum age = 18, maximum age = 78, mean age = 46.423).

5.1.2 | Procedure, manipulation, and measures

After reading a short welcome page and giving informed consent, participants indicated their age and gender

identity. Additionally, we assessed their reflections on life changes and motivational dispositions, using the same scales from Study 1, with 10 items on future time perspective ($\alpha = 0.917$) and three items each to measure growth ($\alpha = 0.855$) and maintenance orientation ($\alpha = 0.653$).

Beginning with our screening question on whether participants were regular users of electric toothbrushes, we introduced the hypothetical shopping scenario. The task description required participants to imagine themselves in the following situation: “Your electric toothbrush, which you rely on daily, has unfortunately stopped functioning. Faced with this situation, you head to your preferred store (whether online or offline) in search of a replacement.” In the established condition, they additionally received: “At the store, you may choose from several established electric toothbrushes which are comparable to the product described below.” In the new condition, the message read: “At the store, some of the available alternatives include new products that are referred to as automatic toothbrushes, which are comparable to the product described below.” Following this introduction, participants were presented with a description and illustration of either the established or new product¹ (the new automatic alternative deviated in form and functioning from established electric toothbrushes; see Appendix B, Supporting Information S1 for details).

After viewing the product information, we captured participants' change versus benefit anticipation using a 7-point Likert scale anchored by 1 = “cause inconvenience” and 7 = “provide benefit”: “How do you expect replacing your current electric toothbrush with a product like the one described in the scenario will influence the way you prefer to complete your toothbrushing routine?” All following items were measured using 7-point Likert scales (1 = “strongly disagree” and 7 = “strongly agree”). First, we assessed information seeking by three items ($\alpha = 0.938$): “I want to seek out more information about the features and brands available for this type of toothbrush,” “I want to invest time in reading about the features and brands available for this type of toothbrush,” and “I want to seize opportunities to learn about this type of toothbrush, seeking information about its features and characteristics.” Participants' consideration of the product alternative in their next purchase decision was measured with two items ($\alpha = 0.900$), adapted from Griffith and Chen (2004): “I would like to try this type of toothbrush,” and “I would consider buying this type of toothbrush.” As a manipulation check, we asked participants to indicate the innovativeness of the presented product on two

items ($\alpha = 0.905$): “The type of toothbrush from the product description is very innovative,” and “The type of toothbrush from the product description is very novel.” Finally, we asked whether participants were familiar with the type of toothbrush described before reading the scenario as a binary yes/no question. After the study was completed, participants were debriefed and thanked.

5.2 | Results

The manipulation worked as intended. Participants rated the new electric toothbrush as more innovative than the established alternative ($M_{\text{established}} = 4.071$, $M_{\text{new}} = 5.720$; $F(1, 537) = 273.224$, $p < 0.001$, *partial* $\eta^2 = 0.337$). In addition, our analyses of consumers' motivational dispositions confirmed the same age-related relationships as in Study 1. Age had a significant negative association with future time perspective, such that as consumers age, they perceive future time as increasingly limited ($\beta = -0.455$, $SE = 0.003$, $p < 0.001$). Like in Study 1, we derived a motivational goal priority indicator reflecting the relative dominance of maintenance over developmental goals (by subtracting scores on the z-standardized growth orientation subscale from the scores on the z-standardized maintenance orientation subscale). Our analysis revealed that this indicator was positively and significantly affected by age ($\beta = 0.265$, $SE = 0.003$, $p < 0.001$), indicating an age-related shift from developmental to maintenance goals.

We conducted a linear regression with the perception of change as the dependent variable and innovativeness (contrast-coded: established = 1, new = -1), mean-centered age, and their interaction effect as independent variables. The results (see Figure 3) showed a significant interaction effect ($\beta = 0.112$, $SE = 0.004$, $p = 0.008$) and a significant main effect of innovativeness ($\beta = 0.176$, $SE = 0.058$, $p < 0.001$). In contrast, the main effect of age was not significant ($\beta = -0.033$, $SE = 0.004$, $p = 0.432$). To decompose the interaction, we conducted a floodlight analysis (Spiller et al., 2013) and identified the age range(s) where the simple effect of innovativeness was significant. This analysis revealed that the Johnson–Neyman point for a significant negative effect of newness on the perception of change was at an uncentered age above 35.604 ($b_{JN} = 0.276$, $SE = 0.140$, $p = 0.050$). Consumers younger than 35.604 did not perceive significant differences regarding benefit or inconvenience between established and new conditions. In support of Hypothesis 2a, the simple effect of innovativeness on the perception of change (i.e., the difference in perceptions between new and established products) increased with age (see Figure 3). We find that the older consumers are,

¹The product illustrations were generated with the help of AI, specifically Microsoft Copilot.

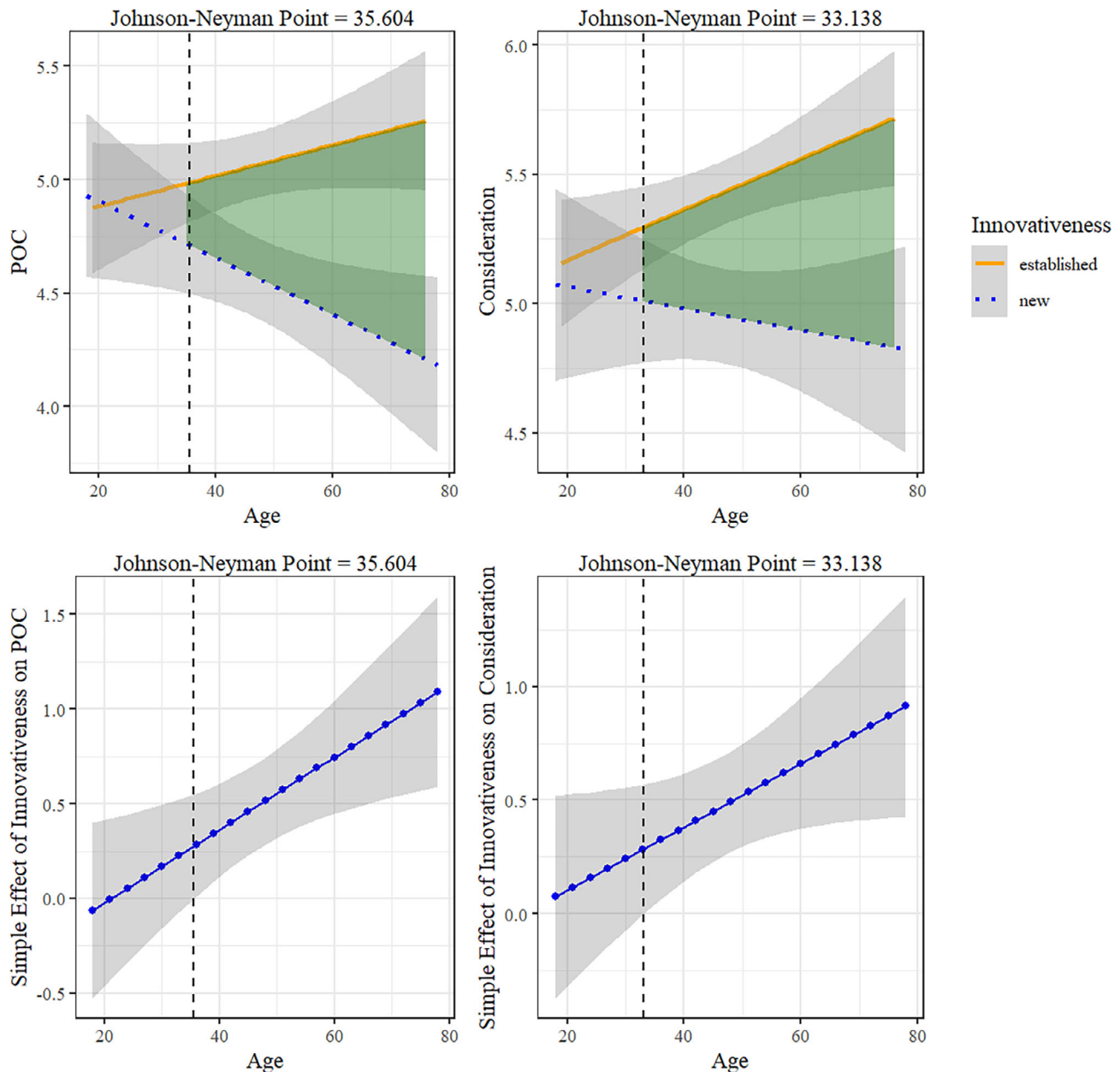


FIGURE 3 Study 2: Product innovativeness \times age interactions with Johnson–Neyman points. Green shaded area indicates Johnson–Neyman region of significance. Lower values of perception of change (closer to 1) indicate that the inconvenience of behavior change is more salient than potential benefit gains. Conversely, higher values (closer to 7) suggest that the potential benefit gains are more salient than the inconvenience of behavior change. POC indicates perception of change.

the more their expectation regarding benefits and inconvenience shifts toward expecting relatively more benefits from established products and relatively more inconveniences from new products.

Employing the same independent variables as in the previous analysis, we conducted further linear regression with consideration as the dependent variable. The results (see Figure 3) revealed a significant interaction effect of innovativeness and age ($\beta = 0.085$, $SE = 0.003$, $p = 0.045$) and a significant main effect of innovativeness

($\beta = 0.178$, $SE = 0.056$, $p < 0.001$). The main effect of age was not significant ($\beta = 0.034$, $SE = 0.003$, $p = 0.421$). A floodlight analysis identified the Johnson–Neyman point at an age of 33.138 ($b_{JN} = 0.286$, $SE = 0.145$, $p = 0.050$). Consumers younger than 33.138 showed no significant differences in consideration between established and new products. However, the simple effect of innovativeness on consideration (i.e., the difference between both product alternatives) increased with age (see Figure 3). These findings indicate an age-related trend where older

consumers increasingly favor established products over new alternatives, providing initial support for Hypothesis 2b.

We further conducted a serial moderated mediation analysis to examine the role of perception of change (salience of inconvenience vs. benefit gains) for consumers' information seeking and consideration regarding new and established product alternatives. In this model, we used consumers' consideration as the dependent variable, perception of change and information seeking were sequential mediators, and innovativeness (dummy-coded 0: established, 1: new), age, and their interactions were the independent variables. All continuous variables were z-standardized. The results based on the bootstrapping technique (5000 resamples) for conditional indirect effects (Preacher et al., 2007) yielded a significant index of moderated mediation ($\beta = -0.055$, $SE = 0.022$, 95% CI $[-0.101, -0.014]$). The (negative) conditional indirect effect for a high age (+1 SD) was the strongest ($\beta = -0.141$, $SE = 0.034$, 95% CI $[-0.213, -0.079]$); it was weaker but still significant for a medium age ($\beta = -0.086$, $SE = 0.024$, 95% CI $[-0.136, -0.042]$), and for a young age (-1 SD) it was insignificant ($\beta = -0.031$, $SE = 0.031$, 95% CI $[-0.096, 0.023]$). This included a significant negative innovativeness \times age interaction effect on the perception of change as already discussed above ($\beta = -0.224$, $SE = 0.086$, 95% CI $[-0.391, -0.058]$). Additionally, we found a significant effect of perception of change on information seeking ($\beta = 0.705$, $SE = 0.063$, 95% CI $[0.596, 0.815]$), indicating that consumers are more likely to seek information when the benefit gains are more salient. Furthermore, the effects of perception of change ($\beta = 0.361$, $SE = 0.040$, 95% CI $[0.297, 0.426]$) and information seeking on consideration ($\beta = 0.346$, $SE = 0.029$, 95% CI $[0.302, 0.390]$) were significant. This implies that when benefit gains are more salient and information seeking is high, there is an increase in consideration. Moreover, we found no further direct interaction effect of innovativeness and age on consideration ($\beta = -0.024$, $SE = 0.058$, 95% CI $[-0.136, 0.087]$), suggesting full mediation.

5.3 | Discussion

In line with Hypothesis 2a, the results of Study 2 reveal that older consumers tend to perceive the inconvenience associated with behavior change as more salient than the potential benefits of new products, unlike younger consumers, who see the potential benefits as more salient. Additionally, the study shows that this perception influences consumers' consideration of new and established product alternatives through their engagement in

product-related information seeking. Specifically, older, as compared to younger, consumers engage in less information seeking for new products and consequently show lower consideration (Hypothesis 2b).

6 | STUDY 3: ONLINE EXPERIMENT ON PREVENTION-FRAMED PRODUCT CLAIMS

The goal of Study 3 is to investigate how product claims aligned with older consumers' goals may mitigate their reluctance to adopt new products. This study aimed to determine whether claims addressing either expansive (growth orientation) or limited (maintenance orientation) time perspectives—which, according to life-span theory, shift over the life span—can effectively redirect older consumers' relative focus from the inconvenience of behavioral change to the potential benefits of adopting new product alternatives (Hypothesis 3). Additionally, the study explored whether this shift leads older consumers to show greater consideration of new products, facilitated by increased information seeking (Hypothesis 4), which was used as the measure of information-related behavior in this study.

6.1 | Method

6.1.1 | Sample and design

Focusing on older consumers only, we recruited 453 United Kingdom-based panelists aged 55 and older from [Prolific.com](https://www.prolific.com), who were pre-screened to meet a minimum acceptance rate of 95%. The experiment employed a 2 (innovativeness: established vs. new) \times 2 (product claim: promotion- vs. prevention-framed) between-subjects design with random treatment assignment. Participants completed a hypothetical electric toothbrush purchase scenario similar to the setting in Study 2, where only regular users of electric toothbrushes were eligible for participation (indicated in the study details). After a screening question, 29 individuals were excluded because they did not indicate regular use of electric toothbrushes. Additional exclusions comprised 15 participants for failing one or two attention checks, two for not meeting the age requirement, and one for duplicate responses. This resulted in a sample of 407 participants (61.425% female; 0.00% nonbinary; minimum age = 55, maximum age = 89, mean age = 67.828). This study was preregistered on [AsPredicted.org](https://aspredicted.org) (https://aspredicted.org/VZP_SMV).

6.1.2 | Procedure, manipulation, and measures

After providing informed consent, participants completed questions about their age, gender identity, future time perspective (10 items; $\alpha = 0.907$), growth orientation (3 items; $\alpha = 0.862$), and maintenance orientation (3 items; $\alpha = 0.680$), using the same scales as in the previous studies.

Next, participants engaged in the hypothetical purchase scenario. They received the same task description in the established and new product conditions used in Study 2. Moreover, they viewed a product advertisement featuring illustrations of one of the two toothbrush alternatives, identical to those used in Study 2. The advertisements contained either promotion-framed or prevention-framed product claims and descriptions. Additionally, we added short claims of three words in the product illustration. The text in the promotion condition highlighted the product's ability to achieve positive results. In contrast, the prevention claim and description pointed to the ability to avoid negative outcomes. The complete set of stimuli is available in Appendix C, Supporting Information S1.

For example, the primary claim and description in the established product, promotion-framed condition read: "Invest in the established option for dental hygiene: Explore our selection of established electric toothbrushes, each offering optimal cleaning performance to enhance your dental health with interchangeable heads available in oval, round, or rectangular shapes. With these toothbrushes, you can achieve a better tooth feeling and create a healthy, radiant smile. Your ideal choice depends on what maximizes comfort and fits perfectly in your mouth."

Conversely, the text in the new product, prevention claim condition, was: "Engineered to prevent dental problems right now: Explore the latest innovation in fully automatic toothbrushes. Engineered with a revolutionary design, these toothbrushes allow you to brush all your teeth simultaneously. The automatic feature eliminates the risk of missing spots and offers the protection you need to preserve your dental health. With these toothbrushes, you can avoid dental problems and maintain a healthy, radiant smile. They are designed to prevent any discomfort while using."

Using the same items from Study 2, we followed the advertisement with a series of questions. Specifically, we measured participants' perception of change regarding the advertised product (single item), information seeking (three items; $\alpha = 0.960$), and consideration of the product alternative (two items; $\alpha = 0.927$). We also included manipulation checks for product innovativeness (same

two items as in Study 2; $\alpha = 0.940$) and the product claim manipulations. The latter required participants to rate the extent to which the claim in the advertisement was related to enhancement or avoidance ("The toothbrush advertisement claim primarily concerned ..."), measured on a 7-point semantic differential scale with the anchors 1 = "enhancement" and 7 = "avoidance." Finally, we asked whether participants had been aware of the type of toothbrush before viewing the scenario, using a binary yes/no format. Upon completion of the study, participants were debriefed and thanked for their participation.

6.2 | Results

Analyses of the manipulation checks confirmed the success of both manipulations. Participants provided higher ratings of product innovativeness in the new product compared to the established product condition ($M_{\text{established}} = 4.255$, $M_{\text{new}} = 5.914$; $F(1, 405) = 185.234$, $p < 0.001$, *partial* $\eta^2 = 0.314$). Moreover, the product claim manipulation check item produced higher scores of avoidance over enhancement in the prevention-framed condition ($M_{\text{promotion}} = 2.332$, $M_{\text{prevention}} = 2.907$; $F(1, 405) = 14.619$, $p < 0.001$, *partial* $\eta^2 = 0.035$).

Our analysis of consumers' motivational dispositions again revealed the age-related associations observed in the previous studies. We found a significant negative relationship between age and future time perspective ($\beta = -0.245$, $SE = 0.010$, $p < 0.001$) and a significant positive effect of age on the relative dominance of maintenance over developmental goals ($\beta = 0.146$, $SE = 0.010$, $p = 0.003$), as reflected by the motivational goal priority indicator, calculated the same way as in our previous studies. However, the regression analysis revealed that the transition from negative to positive indicator scores occurred at a later age in this study than we observed in our previous studies (i.e., the scores turned significantly positive at the age of 50 in Study 2), with the regression line crossing the x-axis at an age of 64.910 in this study. From the age of 65 and older, we observed a significant deviation from zero. To align with our theoretical framework, we therefore focus our analysis on a subsample of the age range that showed positive indicator scores, significantly different from zero. Therefore, the following analyses include only individuals aged 65 and older ($n = 353$, 61.190% female, 0.000% nonbinary, mean age = 69.142). To assess the robustness of our findings, we also conducted analyses for the full sample (i.e., for the age range 55+). These additional analyses, which reveal a consistent pattern of effects, are provided in Appendix C, Supporting Information S1.

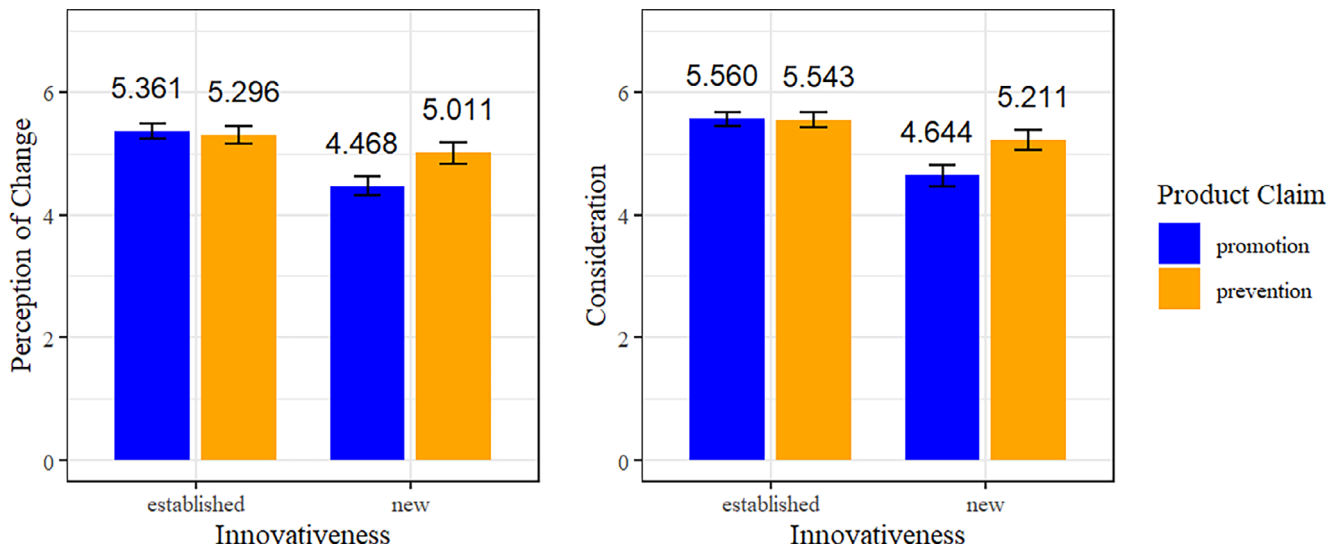


FIGURE 4 Study 3: Product innovativeness \times product claim interaction. Error bars represent the standard error of the mean.

To examine the impact of prevention framing on older consumers' perception of change, we conducted an analysis of variance (ANOVA) with the perception of change as the dependent variable and innovativeness (contrast-coded: established = 1, new = -1), product claim (contrast-coded: promotion-framed = 1, prevention-framed = -1), and their interaction as independent variables. The results (see Figure 4) revealed a significant interaction effect ($F(1, 349) = 3.969$, $p = 0.047$, $partial \eta^2 = 0.011$) and a significant main effect of innovativeness ($F(1, 349) = 14.898$, $p < 0.001$, $partial \eta^2 = 0.041$), while the main effect of product claim was marginally significant ($F(1, 349) = 2.926$, $p = 0.088$, $partial \eta^2 = 0.008$). A series of planned contrasts revealed a significantly greater relative salience of benefit gains over inconvenience in the new product/prevention claim ($M_{new, prevention} = 5.01$) compared to the new product/promotion claim ($M_{new, promotion} = 4.468$) condition ($t(349) = -2.610$, $SE = 0.208$, $p = 0.046$). While the difference between the established ($M_{established, promotion} = 5.361$) and new alternative ($M_{new, promotion} = 4.468$) in the promotion condition was significant ($t(349) = 4.151$, $SE = 0.215$, $p < 0.001$), we found no significant difference between the established ($M_{established, prevention} = 5.296$) and new alternative ($M_{new, prevention} = 5.011$) in the prevention condition ($t(349) = 1.323$, $SE = 0.216$, $p = 0.549$). Moreover, for the established alternative, we also found no significant difference between prevention and promotion claims ($t(349) = 0.292$, $SE = 0.223$, $p = 0.991$). Thus, we found support for Hypothesis 3.

The results of an additional ANOVA, which utilized the same independent variables with consideration as the dependent variable (see Figure 4), revealed an interaction effect between innovativeness and product claim that

was marginally significant ($F(1, 349) = 3.784$, $p = 0.053$, $partial \eta^2 = 0.011$), a significant main effect of innovativeness ($F(1, 349) = 17.384$, $p < 0.001$, $partial \eta^2 = 0.047$), and a significant main effect of the product claim ($F(1, 349) = 3.899$, $p = 0.049$, $partial \eta^2 = 0.011$). Planned contrast analyses revealed significant differences in consideration across conditions. In particular, our results provide support for Hypothesis 4. When the new product was advertised with a prevention claim ($M_{new, prevention} = 5.211$), it received higher consideration than when advertised with a promotion claim ($M_{new, promotion} = 4.644$; $t(349) = -2.771$, $SE = 0.205$, $p = 0.030$). When presented via a promotion claim, the established product ($M_{established, promotion} = 5.560$) was considered significantly more than the new alternative ($t(349) = 4.327$, $SE = 0.212$, $p < 0.001$). In contrast, we found no significant difference between the established ($M_{established, prevention} = 5.543$) and new alternative in the prevention condition ($t(349) = 1.564$, $SE = 0.213$, $p = 0.401$). For the established alternative, we also found no difference between prevention and promotion claims ($t(349) = 0.078$, $SE = 0.220$, $p = 0.999$).

A serial moderated mediation analysis tested the effectiveness of product claims for attenuating older consumers' perception of change regarding the relative salience of inconvenience versus benefit gains to motivate information seeking and consideration of new product alternatives. In this model, consumers' consideration served as the dependent variable, perception of change and information seeking were sequential mediators, and the experimental manipulation of product innovativeness (dummy-coded 0: established, 1: new), product claim (dummy-coded 0: promotion-framed, 1: prevention-framed), and their interaction were the

independent variables. All continuous variables were z -standardized. The bootstrapping technique (5000 resamples) for conditional indirect effects (Preacher et al., 2007) revealed a significant index of moderated mediation ($\beta = 0.115$, $SE = 0.059$, 95% CI [0.005, 0.233]). The conditional indirect effect was significantly negative in the promotion-framed condition ($\beta = -0.169$, $SE = 0.043$, 95% CI [-0.260, -0.089]), while it was insignificant in the prevention condition ($\beta = -0.054$, $SE = 0.043$, 95% CI [-0.142, 0.027]). This included a significant innovativeness \times product claim interaction on the perception of change ($\beta = 0.414$, $SE = 0.207$, 95% CI [0.005, 0.823]). We further found a significant effect of perception of change on information seeking ($\beta = 0.835$, $SE = 0.070$, 95% CI [0.693, 0.976]) and of perception of change ($\beta = 0.388$, $SE = 0.039$, 95% CI [0.315, 0.461]) as well as information seeking on consideration ($\beta = 0.333$, $SE = 0.030$, 95% CI [0.287, 0.380]). Moreover, we found no further direct interaction effects of innovativeness and product claim on consideration ($\beta = 0.146$, $SE = 0.122$, 95% CI [-0.097, 0.389]).

6.3 | Discussion

The results of Study 3 suggest that prevention claims can effectively shift older consumers' product perception toward a greater salience of the potential benefits of new products over the anticipation of disrupting changes (Hypothesis 3). The results further show that this shift can increase older consumers' new product consideration by promoting new product information seeking (Hypothesis 4).

7 | STUDY 4: FIELD STUDY ON PREVENTION-FRAMED PRODUCT CLAIMS

The aim of this field study was to test whether product claims that address consumer goals associated with either expansive (growth orientation) or limited (maintenance orientation) time perspectives can encourage older consumers' information-related behavior and subsequent adoption of new products. Specifically, we utilized information processing—the actual time consumers spent processing information with regard to the respective products—as the measure of information-related behavior and expected that prevention claims stimulate older consumers' information processing and subsequent choice of new products.

The study was conducted in the field, involving real product choice and multiple product categories to ensure

the generalizability of the results. We observed the behavior of randomly selected shoppers of a consumer electronics store located in the pedestrian area of a large European city. Subjects were both younger and older consumers who were identified based on their outer appearance (see below for the detailed procedure). Their responses to products from different product categories, where both new and established products were offered, were tracked across 4 days. Each of these 4 days constituted one of four innovativeness \times product claim conditions. In addition, we included consumers' age group as an additional (measured) factor.

7.1 | Method

7.1.1 | Sample and design

In this field experiment, we collected data on 286 shoppers (31.469% female) in a consumer electronics store located in the pedestrian area of a large European city. Specifically, participants were 161 younger and 125 older consumers who were identified based on their outer appearance. We employed a 2 (innovativeness: established vs. new) \times 2 (age group: young vs. old) \times 2 (product claim: promotion- vs. prevention-framed) between-subjects design.

7.1.2 | Procedure, manipulation, and measures

Three trained research assistants observed and tracked the in-store behavior of consumers. In preceding training sessions, the research assistants, who were not aware of our underlying rationale, and the authors discussed observable characteristics of aging and how to assess age by appearance. This discussion involved the evaluation of individuals based on hair color and fill, facial features (e.g., skin folds), walk (e.g., bent over), and age-related devices (e.g., a walking stick), since these characteristics can help classify individuals as younger or older (Rexbye & Povlsen, 2007). The training also included supervised trial observations in which the three observers collected data on their own, compared their results, and discussed any variation. In the main study, the trained observers were disguised as stock clerks.

In line with previous research (e.g., Iyengar & Lepper, 2000), consumers were randomly selected based on their arrival within the observation period on four consecutive weekdays between 10:30 a.m. and 4:00 p.m. We chose this time span because employees indicated in interviews that both age groups usually frequented the

store around this time. The observers recorded the aforementioned age-identifying characteristics and features, together with the estimated age and gender (James et al., 1984).

To quantify the extent of point-of-purchase information processing, observers used stopwatches to record the time (in seconds) consumers spent reading product information, trying out products, and receiving advice. The stopwatches started when the consumers arrived at the respective store shelves and stopped when they left the shelf with/without a product. If the consumers came back to the shelf, tracking restarted, and time was accumulated if needed. Moreover, the observers recorded the choice of the respective products (buy or not buy). If consumers had no interaction with any of our target products, they were not considered.

We manipulated the product claims of established and new products in four product categories (fans, cell phones, vacuum cleaners, and radios). These categories were selected carefully to fit several criteria. First, both new and established products had to be offered simultaneously in each category, so consumers could choose between options. In addition, we selected new and established products with similar prices. To allow for the investigation of age effects that were not confounded by product category, the categories had to be frequented by younger and older consumers. This was ensured by several store visits of the author team.

The manipulation appeared in information displays placed in front of the shelves where the products were located. In these displays, advertisements of the products included a product claim, a subclaim, a product illustration, and a detailed description of the product features (see Appendix D, Supporting Information S1 for details).

To rule out biases from showing different manipulations to consumers at once (i.e., using one manipulation in one product category and another one in a second category), the advertisements varied across the 4 weekdays but not between product categories on a given day. That is, on the first day, the established products were promoted with promotion claims. On the second day, the advertisement showed the established products with prevention claims. Then, on Day 3, the new products were promoted with promotion claims. Finally, on the fourth day, the advertisement showed the new products with a prevention claim. The product claims were manipulated by varying the wording. They highlighted the products' ability to achieve positive outcomes in the promotion-framed condition and pointed to the products' superior ability to avoid negative outcomes in the prevention-framed condition. We then recorded consumers' information and choice behavior with respect to the manipulated products.

To test the effectiveness of the product innovativeness and regulatory-framing manipulations, we conducted a pretest (58.025% female; 53 younger participants, mean age = 25.604 years; 28 older participants, mean age = 65.929 years). Participants were asked to rate the extent to which the claim concerned enhancement (promotion claim) or avoidance (prevention claim) on a 7-point semantic differential item (Poels & Dewitte, 2008). Moreover, participants rated the perceived product innovativeness based on three items ("the product is very innovative," "the product is very novel," "the product is very original"; $\alpha = 0.931$; Schweitzer & den Hende, 2016). The results of the manipulation check for every framed claim and product category showed that the manipulations were perceived as intended (product innovativeness: $M_{\text{established}} = 2.826$, $M_{\text{new}} = 3.892$, $F(1,565) = 76.016$, $p < 0.001$, $\text{partial } \eta^2 = 0.119$; product claim regulatory framing: $M_{\text{promotion}} = 2.065$, $M_{\text{prevention}} = 5.034$, $F(1,565) = 470.128$, $p < 0.001$, $\text{partial } \eta^2 = 0.454$). Moreover, we performed additional two-way ANOVAs examining interactions between product innovativeness or regulatory framing and age group to test if newness ratings or claim perceptions were affected by participants' age. Only for the claim we used in the product category "radios" we found an interaction effect of regulatory framing and age group ($F(1,158) = 5.610$, $p = 0.019$, $\text{partial } \eta^2 = 0.034$), while the manipulation of the claims was correctly perceived within both age groups (see Appendix D, Supporting Information S1 for details).

7.2 | Results

To examine the impact of regulatory framing of product claims on younger and older consumers' information processing, we conducted an analysis of covariance (ANCOVA). The dependent variable was information processing,² while the independent variables included innovativeness (contrast-coded: established = 1, new = -1), age group (contrast-coded: young = 1, old = -1), product claim (contrast-coded: promotion-framed = 1, prevention-framed = -1), and their 2- and 3-way interaction effects. We controlled for three further information processing variables: (1) whether consumers tried out products from the category, (2) whether they received advice, and (3) whether other customers were present at the same shelf, and for category effects by using dummy variables for each product category. The analysis yielded a significant three-way interaction effect

²Note that we used the natural logarithm of fixation time (i.e., extent of information processing) to compress higher values.

Innovativeness

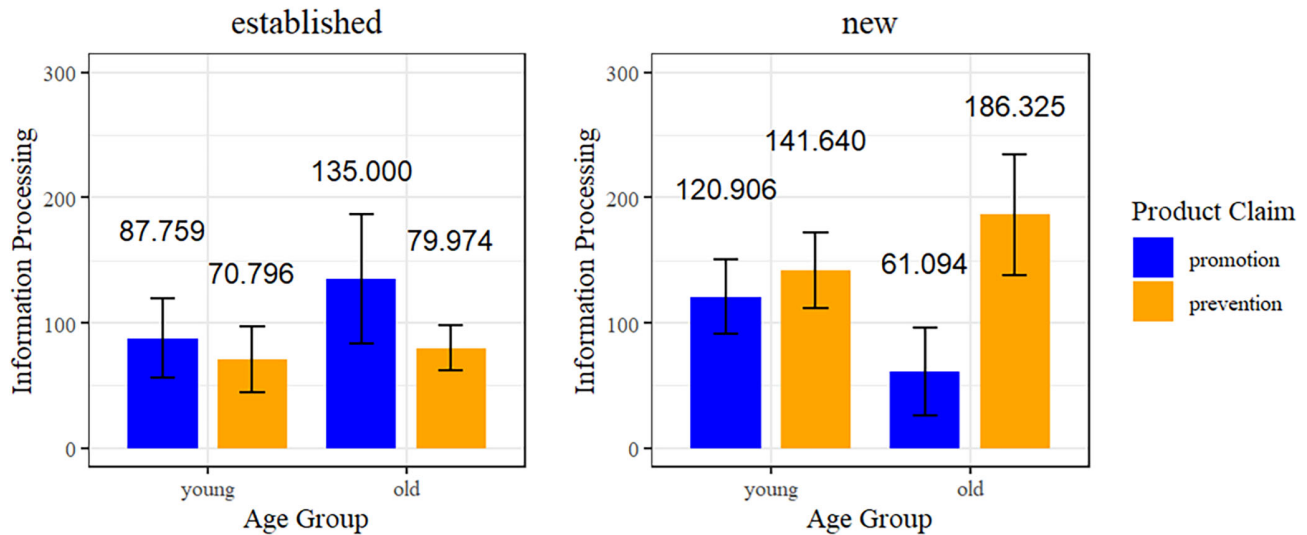


FIGURE 5 Study 4: Product innovativeness \times age group \times product claim interaction. Information processing bars represent the means of the absolute time participants spent on the information in seconds. Error bars represent the standard error of the mean (statistical analysis was based on the natural logarithm transformation of time to compress higher values).

(see Figure 5; $F(1, 272) = 4.638$, $p = 0.032$, *partial* $\eta^2 = 0.017$), a significant main effect of innovativeness ($F(1, 272) = 7.331$, $p = 0.007$, *partial* $\eta^2 = 0.026$), and a significant main effect of product claim ($F(1, 272) = 4.028$, $p = 0.046$, *partial* $\eta^2 = 0.015$). However, the main effect of age group was not significant ($p = 0.970$).

Decomposing the interaction by innovativeness, we found no significant interaction effect between age group and product claim within the established product condition ($p = 0.311$). However, we observed a significant main effect of age group ($F(1, 126) = 5.74$, $p = 0.018$, *partial* $\eta^2 = 0.044$), indicating that, on average, older consumers processed more information on established products than younger consumers ($M_{\text{young, promotion}} = 87.759$, $M_{\text{young, prevention}} = 70.796$ vs. $M_{\text{old, promotion}} = 135.000$, $M_{\text{old, prevention}} = 79.974$). In contrast, for new products, our analysis indicated a significant interaction between age group and product claim on information processing ($F(1, 140) = 4.265$, $p = 0.041$, *partial* $\eta^2 = 0.030$), demonstrating that the effect of product claim on information processing varied depending on consumers' age group. Additionally, the ANOVA results showed significant main effects for age group ($F(1, 140) = 6.840$, $p = 0.010$, *partial* $\eta^2 = 0.047$) and product claim ($F(1, 140) = 11.033$, $p = 0.001$, *partial* $\eta^2 = 0.073$). Further probing of the two-way interaction effect in the new product condition revealed that older consumers exhibited significantly higher levels of information processing in the prevention claim as opposed to the promotion claim condition ($M_{\text{old, promotion}} = 61.094$, $M_{\text{old, prevention}} = 186.325$;

$t(140) = -3.953$, $SE = 0.401$, $p < 0.001$). These findings lend support to our Hypothesis 4. For younger consumers, we found no significant difference in information processing between the prevention claim and promotion claim conditions ($M_{\text{young, promotion}} = 120.906$, $M_{\text{young, prevention}} = 141.640$; $t(140) = -1.079$, $SE = 0.401$, $p = 0.282$). Similarly, for established products, the type of product claim used in the advertisement (prevention or promotion) did not significantly affect the time spent on information processing, for both younger ($t(126) = -0.340$, $SE = 0.295$, $p = 0.734$) and older consumers ($t(126) = 0.986$, $SE = 0.396$, $p = 0.326$).

We employed the bootstrapping technique for conditional indirect effects, using 5000 resamples (Preacher et al., 2007), to further examine the effects of product claims through information processing on younger and older consumers' choice of products. Our model included information processing as a mediator, choice as the dependent variable, and the dummy-coded independent variables innovativeness, age group, product claim, and their two- and three-way interactions. Furthermore, as done in the preceding analysis on information processing, we controlled for the same three information processing variables and category effects, using product category dummy variables. The bootstrapping analysis revealed a significant indirect interaction between product innovativeness, age group, and product claim on product choice, which was mediated by information processing ($b = 1.963$, $SE = 1.203$, 95% CI [0.017, 4.616]). The conditional indirect effect of product claim was

significant in the new product condition for older consumers ($b = 1.927$, $SE = 0.736$, 95% CI [0.772, 3.417]). This suggests that older consumers processed more product information in the new product, prevention-frame, than in the new product, promotion-frame condition, which led to a significantly higher likelihood of purchasing the product.

In line with the ANCOVA results, this indirect effect included a significant innovativeness \times age group \times product claim interaction effect on information processing ($b = 1.677$, $SE = 0.815$, 95% CI [0.145, 3.245]) and a significant and positive effect of information processing on choice ($b = 1.171$, $SE = 0.325$, 95% CI [0.665, 1.751]). Concerning the control variables, we found significant effects of trying out products ($b = 1.889$, $SE = 0.453$, 95% CI [1.446, 2.918]), advice ($b = 2.209$, $SE = 0.375$, 95% CI [0.145, 3.245]), and whether customers were present at the same shelf ($b = 1.150$, $SE = 0.259$, 95% CI [0.987, 2.779]) on information processing.

7.3 | Discussion

The results of this mediation analysis provide additional support for Hypothesis 4: aligning new product-related communication with older consumers' goal priority of maintenance over growth—that is, using a prevention claim—enhances their information processing and subsequent choice.

8 | GENERAL DISCUSSION

The current research takes up the notion voiced by previous research (Evanschitzky & Woisetschlaeger, 2008) and practitioner-oriented publications (Coughlin, 2017) that new product-related communication often does not align with older consumers' goals. We propose the use of goal-compatible message framing to enhance the salience of potential benefit gains over the inconveniences of behavioral change in older consumers' product perception, thereby increasing their receptivity to new product-related communication.

Our findings reveal that older consumers' preference for maintenance over growth leads to lower levels of novelty seeking as compared to younger consumers—an important antecedent of new product adoption (Manning et al., 1995). We further find that older consumers' new product perception involves a relatively higher salience of inconvenience due to possible behavior changes over benefit gains, leading to less information seeking and lower consideration, unlike younger consumers, who see

the benefit gains as more salient. This research also shows that cost-efficient and easy-to-implement adaptations of the communication strategy can mitigate these effects of goal incompatibility for older consumers without diminishing younger consumers' interest in new products. We show that prevention-focused framing of product claims is effective in redirecting older consumers' product perception, stimulating information-related behavior, and innovation acceptance. These findings hold important implications for researchers and managers.

8.1 | Research contributions

Bringing together insights from life-span theory and regulatory framing, our empirical evidence suggests that communicating effectively with older consumers about new products requires a prevention-framed approach. This aligns with older consumers' maintenance orientation and shifts their attention from the inconvenience of behavioral change to the benefits of new product adoption. As a result, they demonstrate a higher willingness to engage with the information about new products. Life-span theory offers a rationale for consumers' primary goals—that is, younger consumers focus on knowledge gain, whereas older consumers prefer current state preservation—and regulatory framing offers mechanisms for addressing these mastery goals on a lower level. We refine the understanding of regulatory-framing's impact on older consumers (Cole et al., 2008) by showing that especially prevention-framing influences their new product-related information behaviors; for established products, however, prevention framing does not trigger changes in behavior, as such products naturally resonate with their maintenance orientation.

We contribute to the literature on innovation adoption by challenging the prevailing notion that “marketers can frame communications to encourage promotion focus and shift consumer focus toward positive outcomes” (Herzenstein et al., 2007, p. 259). In contrast, we find that such a general statement may not be valid since the effects of regulatory framing may change throughout the consumer's life course. Interestingly, existing research even excluded the examination of older peoples' reaction to regulatory framing: “We selected the upper bound of 65 years of age because older consumers may not be interested in highly technological goods” (Herzenstein et al., 2007, p. 253). Instead of sparing out older consumers from the analysis of adoption behavior, we explicitly account for the potentially differing motivational drivers of interest in new products across the life span by introducing life-span theory to the new product adoption context. In doing so, we contribute to a more nuanced

understanding of the effects of regulatory framing (e.g., Mogilner et al., 2008), taking up the notion by Cole et al. (2008, p. 357) that “these theories [life-span theories] and findings suggest a clear but as yet unexplored connection with regulatory focus theory.”

In addition, the results of Study 4 and Study 5 (see Appendix E, Supporting Information S1) seem to suggest that older consumers might process more information about established products when these are advertised with a promotion (vs. prevention) claim. While this contrast is only statistically significant in Study 5 (but not in Study 4), one may speculate that a plausible explanation for the observed tendency could be that older consumers are expecting information that is consistent with the familiar benefits of established products. However, promotion claims suggest novel and unexpected benefits. Despite this, established products inherently align with older consumers' maintenance orientation. This apparent ambiguity may heighten consumers' attentiveness as they seek to confirm whether the product still meets their expectations, thereby stimulating information seeking and processing (e.g., Huettel et al., 2006).

In addition, the finding that younger consumers are less susceptible to regulatory framing and instead generally show a strong interest in novel product alternatives is in line with literature demonstrating that younger consumers on average exhibit more innovative buying behavior (Im et al., 2003). Taken together, we thus address the recent call by MacInnis et al. (2020, p. 5) to challenge the implicit boundary in current consumer research to rely on student samples and instead “address questions regarding distinct consumer segments based on age.”

8.2 | Managerial implications

The good news for product managers is that older consumers are not a “lost” segment for marketing new products. Lower innovation adoption rates are not so much the result of lower interest in innovations among older individuals (Lambert-Pandraud & Laurent, 2010) but the result of reduced motivation to deal with any disruption those products might cause. This finding suggests that adoption rates for new products can be increased among older consumers by explicitly accounting for their motivational goals.

Specifically, our results fuel the suggestion “that consumers are never too old to choose, but sometimes, marketers just don't find the right words” (Evanschitzky & Woisetschlaeger, 2008, p. 632). To be effective, claims used to advertise new products should be framed as prevention-focused using words that point to the

product's ability to avoid adverse outcomes (e.g., “secure” or “preserve”). Prevention-focused claims align well with older consumers' motivation to preserve the current level of functioning and to avoid a deterioration of the developmental status quo (Baltes et al., 1998)—thus serving to increase the relevance of these products. Interestingly, our results also seem to explain why current communication practice fails to stimulate older consumers' innovation adoption rates. An investigation of 1057 print advertisements published between January 2017 and July 2018, which were made available by “Ads of the World,”³ revealed that in marketing new products, managers predominantly use product claims that are promotional (highlighting products' ability to achieve positive outcomes in the future; 76%) or, to a far lesser extent, neutral (6%). However, both types of claims contrast with older consumers' focus on maintenance orientation. In contrast, prevention-focused claims were used in only 18% of the advertisements. Given that prevention claims not only stimulate older consumers' purchase behavior but at the same time do not harm younger consumers' preference for innovations, our results suggest that marketers of new products should rethink their communication strategy and consider highlighting products' ability to avoid negative outcomes.

8.3 | Limitations and future research

Our research is subject to limitations that may provide avenues for future research. First, the products studied were mostly related to consumer electronics and selected to meet both younger and older consumers' needs. While we are confident that our findings also apply to other product categories that are marketed broadly, studying older consumers' response to new products exclusively targeted to them would be a worthwhile endeavor. For instance, the e-bike example mentioned in the introduction or other concepts such as smart homes for elderly healthcare, which are designed as preventive care systems, show that such new products might themselves already address a maintenance goal (Chang, 2007), thus reducing the need for prevention claims.

Moreover, our results on the impact of regulatory framing may potentially be related to aspects of an advertising message's valence. Future research should therefore elaborate on the differentiation between both concepts. A positively framed claim focuses on the

³“Ads of the World” is an online advertising archive that collects advertisements worldwide and across industries (adsoftheworld.com). Some of the recorded ads are part of the same advertising campaigns—in this case, we considered only one ad of a campaign.

positive behavioral outcome of complying with a message, whereas a negatively framed claim emphasizes the costs of noncompliance. Previous research has found differing effects for promotion and prevention claims when presented with either positive or negative valence (Zhao & Pechmann, 2007). The impact of valence may also be stronger if consumers have little or no related product experience, as with new products (Chang, 2007).

Finally, we recognize the low power of our field experiment in Study 4. We only had 4 days to carry out the experiment in the consumer electronics store, which constrained our ability to gather a larger sample size. Despite these constraints, the experiment provides valuable additional (also descriptive) evidence for our hypotheses from a real-world setting that could be extended in future research.

ACKNOWLEDGMENTS

The authors thank Conrad Electronic SE for their cooperation in the field study. Open Access funding enabled and organized by Projekt DEAL.

CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

Data available on request from the authors.

ETHICS STATEMENT

The authors have read and agreed to the Committee on Publication Ethics (COPE) international standards for authors.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

How to cite this article: Hettich, Dominik, Torsten Bornemann, and Stefan Hattula. 2025. "Understanding Older Consumers' New Product-Related Information Behaviors—A Life-Span Theory Perspective." *Journal of Product Innovation Management* 42(6): 1068–88. <https://doi.org/10.1111/jpim.12779>