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Ready-to-eat and ready-to-cook foods current developments, nutritional value, and consumer acceptance

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Abstract
The increasing demand for convenience in modern lifestyles has accelerated the growth of ready-to-eat (RTE) and ready-to-cook (RTC) food products. This study explores recent advancements in the production and preservation technologies of RTE and RTC foods, assesses their nutritional implications, and evaluates consumer acceptance trends, particularly in emerging markets. Using a mixed-method approach, the research integrates a systematic literature review, recent market data, and case studies from India and other developing economies to examine how innovation in food processing aligns with health, safety, and consumer behavior. Technological interventions such as high-pressure processing (HPP), modified atmosphere packaging (MAP), and ultrasonic-microwave-assisted vacuum frying (USMVF) have shown significant promise in enhancing product shelf life, nutrient retention, and sensory qualities in RTC items. Simultaneously, millet-based RTC formulations have demonstrated the feasibility of clean-label, nutrient-dense convenience products, rich in fiber, protein, and essential minerals. However, concerns persist regarding RTE items, especially ultra-processed variants, which often contain excessive levels of sodium, sugar, and saturated fats—factors linked to chronic health conditions including obesity, cardiovascular disease, and type 2 diabetes. Consumer trends reveal a growing preference for RTC foods over RTE, with a notable 58% growth in India's RTC market in 2024, driven by perceptions of freshness, control over ingredients, and perceived health benefits. The comparative analysis suggests that RTC products may offer a more balanced approach to convenience and nutrition than their RTE counterparts. This paper concludes by identifying gaps in current regulations, the need for clearer labeling standards, and the potential for future innovations focused on sustainability and personalized nutrition. These findings are relevant to food technologists, nutritionists, policy-makers, and industry stakeholders seeking to align convenience food offerings with long-term health goals.

Keywords: Ready-to-eat foods, Ready-to-cook foods, Food processing technology, Nutritional value, Consumer acceptance, Ultra-processed foods, Modified atmosphere packaging (MAP), High-pressure processing (HPP), Millet-based products, Convenience foods

Introduction
The global food industry has undergone a dramatic transformation in the past two decades, driven primarily by changing consumer lifestyles, rapid urbanization, increased participation of women in the workforce, and evolving dietary preferences. Among the most notable developments is the rising demand for convenience-oriented food products, especially ready-to-eat (RTE) and ready-to-cook (RTC) foods. These categories, which offer varying degrees of preparation and processing, are now central to the modern consumer's food basket. RTE products are typically fully cooked, processed, and packaged items that require no additional cooking, only heating or direct consumption. In contrast, RTC foods require minimal preparation—usually cooking or rehydration—but eliminate the need for cleaning, chopping, and other preliminary steps. As the boundaries between home-cooked meals and industrial food products become increasingly blurred, understanding the technological, nutritional, and social implications of this shift is essential.

One of the key drivers of this transition toward RTC and RTE products is the global trend toward time poverty. In many urban settings, especially in middle-income and high-income economies, individuals face increasing time constraints due to demanding work schedules and long commutes. Consequently, meals that require minimal preparation time are in high demand. This shift is not only seen in Western countries but is rapidly expanding in developing nations, including India, China, and Brazil, where the middle class is growing

and lifestyles are modernizing. According to a 2025 industry report, the Indian RTC food mark*et al*one expanded by 58% in 2024, surpassing expectations and indicating a clear pivot away from RTE products, whose volumes declined within the same period. This shift in preference toward RTC items suggests that consumers are becoming more conscious of freshness, ingredient control, and perceived health benefits—dimensions that RTE products often fail to address due to their heavy processing and preservative content.

Simultaneously, advances in food science and technology have allowed for significant innovation in RTC and RTE product development. Techniques such as high-pressure processing (HPP), modified atmosphere packaging (MAP), ultrasonic-microwave-assisted vacuum frying (USMVF), and vacuum infusion marination have all been employed to enhance product stability, nutritional preservation, and organoleptic qualities. These methods aim to balance the need for shelf-stable products with consumer expectations for taste, texture, and safety. In particular, RTC items have benefited from innovations that allow nutrient-dense ingredients—such as millets, legumes, and whole grains—to be incorporated into products without compromising convenience or shelf life. The use of intelligent packaging, biodegradable films, and time-temperature indicators (TTIs) further supports efforts to make these products more sustainable and consumer-friendly.

Despite these technological advances, concerns remain regarding the nutritional implications of processed convenience foods, particularly RTE products. Numerous studies have documented the high levels of sodium, saturated fats, added sugars, and preservatives in RTE meals, especially ultra-processed variants. Epidemiological data increasingly link frequent consumption of ultra-processed foods with chronic diseases such as obesity, cardiovascular disease, type 2 diabetes, and certain cancers. A series of longitudinal cohort studies conducted across Europe and North America have shown that individuals with diets high in ultra-processed foods experience higher rates of all-cause mortality and morbidity. Furthermore, intervention-based research indicates that even when calorie and macronutrient content is matched, diets composed of minimally processed foods lead to significantly better weight management and metabolic outcomes than those dominated by ultra-processed equivalents.

This nutritional dilemma places RTC products at a unique intersection between industrial food production and health-conscious consumption. Unlike RTE items, RTC foods often offer a middle path—providing convenience while preserving the opportunity for consumers to control certain aspects of food preparation such as oil quantity, seasoning, and cooking time. When RTC items are designed with whole, minimally processed ingredients and avoid chemical preservatives, they may serve as a viable solution to the demand for fast yet wholesome meals. For instance, millet-based RTC foods developed in India have shown high levels of protein, dietary fiber, iron, and calcium while maintaining ambient shelf stability. These products not only support nutrition but also align with government and industry goals for food fortification and traditional grain promotion.

The socio-cultural dimensions of RTE and RTC adoption are also worth noting. In many societies, particularly in Asia, the act of cooking remains a central cultural and familial activity. Full reliance on RTE products may be perceived as a departure from traditional norms and is often met with resistance. RTC items, by requiring minimal cooking effort while retaining some aspects of meal preparation, help bridge this cultural divide. Moreover, in the context of women's empowerment and workforce participation, RTC foods provide a practical compromise, enabling families to maintain a semblance of home-cooked meals without the time investment traditionally required.

From a policy perspective, the rapid proliferation of RTE and RTC products presents both opportunities and challenges. On one hand, these products can help address food security concerns, reduce food waste, and expand dietary diversity. On the other hand, inconsistent regulation, unclear labeling, and limited public awareness about the differences between these categories risk misleading consumers. For example, the lack of universally accepted definitions for "minimally processed," "clean-label," and "ultra-processed" foods makes it difficult to compare products or regulate their claims. Additionally, sustainability considerations—such as the environmental impact of single-use packaging and energy-intensive processing methods—must be integrated into the broader discussion.

Given the complex interplay of convenience, nutrition, technology, and consumer behavior, a comprehensive understanding of RTC and RTE foods is necessary to guide future research, industrial innovation, and public health policy. This paper aims to critically examine the current state of RTC and RTE food development, focusing on technological advancements, nutritional profiles, and consumer acceptance. Special attention is given to recent case studies in emerging markets where dietary transitions are occurring rapidly. Through comparative analysis and discussion, the study explores whether RTC foods can offer a sustainable and health-conscious alternative to the increasingly scrutinized RTE category. In doing so, the paper contributes to the broader discourse on how convenience and health can be reconciled in the modern food system.

Literature Review

The development of ready-to-eat (RTE) and ready-to-cook (RTC) foods has been extensively discussed in food science, nutrition, and consumer behavior literature up to 2022. Early research primarily addressed the technical challenges of manufacturing convenient food products with extended shelf life, acceptable sensory characteristics, and food safety assurance. However, growing concerns about public health and dietary quality have since shifted scholarly focus to the nutritional composition of these products and their implications for long-term health outcomes.

In the technological domain, several studies before 2022 explored the efficacy of processing and preservation techniques to maintain product quality. High-pressure processing (HPP), a non-thermal method that inactivates pathogens while preserving sensory and nutritional attributes, was widely studied as a viable approach for RTE and RTC products. Research by Campus (2010) [16] and later by Yordanov and Angelova (2010) [17] highlighted HPP's potential to extend shelf life without the negative effects of traditional thermal processing. Modified atmosphere packaging (MAP) also received considerable attention during this period. Studies by Parry (2011) [18] and others demonstrated how controlled oxygen and carbon dioxide levels within packaging environments could slow spoilage and inhibit microbial growth, making MAP a standard method for many perishable convenience products.

Meanwhile, the nutritional analysis of RTE and RTC foods began to reveal significant disparities in product quality. Many RTE products, especially those classified as ultra-

processed, were shown to contain excessive levels of sodium, added sugars, and unhealthy fats. Monteiro *et al.* (2009) [8] introduced the NOVA food classification system, which became influential in differentiating between unprocessed, minimally processed, and ultra-processed foods. Subsequent studies using the NOVA system linked high consumption of ultra-processed foods—many of which are RTE items—to increased risks of obesity, cardiovascular disease, and metabolic disorders. Research published in *Public Health Nutrition* and the *British Medical Journal* (2018-2021) consistently supported these associations, contributing to a growing consensus on the health risks of excessive reliance on RTE products.

On the other hand, RTC foods have received comparatively less scrutiny, though some research prior to 2022 suggested they might offer a healthier alternative to fully processed RTE items. Because RTC products typically require some level of final cooking, they allow for more flexibility in ingredient additions, oil and salt control, and portion sizing. A study by Steele *et al.* (2016) [19] emphasized the importance of distinguishing between food categories based not only on processing but also on consumer engagement in preparation. However, very few empirical studies prior to 2022 made clear distinctions between RTE and RTC categories in terms of nutritional value or consumer behavior.

In terms of consumer perception, existing literature highlighted convenience, taste, and price as primary motivators for the purchase of RTE and RTC foods. A cross-sectional survey by Kähkönen and Tuorila (1999) [20] found that sensory appeal and time-saving characteristics were the top factors influencing Finnish consumers' choices of ready meals. Similarly, showed that while health was a consideration for some consumers, convenience and affordability usually outweighed it in the final purchasing decision. These findings were echoed in multiple markets, including the United States, Europe, and parts of Asia, underscoring a global shift toward convenience-driven eating habits. However, prior to 2022, most of these studies focused on RTE meals, with limited data specifically on consumer perceptions of RTC products.

Additionally, socio-economic factors were found to play a role in the consumption of convenience foods. Research by Darmon and Drewnowski (2018) [13] established a link between income levels and reliance on processed foods, including RTE items. Individuals with lower incomes were more likely to purchase inexpensive, energy-dense products that were often highly processed. Conversely, middle- and upper-income consumers were beginning to express greater interest in clean-label products, organic ingredients, and minimally processed convenience foods—trends that aligned more closely with the emerging RTC category. Nonetheless, prior to 2022, much of this interest remained anecdotal or industry-driven, with relatively few peer-reviewed studies investigating RTC market growth or consumer behavior in detail.

Cultural considerations also emerged in the literature. For example, studies conducted in Asian markets such as Japan, South Korea, and India found that while convenience foods were gaining popularity, traditional cooking practices remained strong. Research by Lee and Ueland (2011) [21] suggested that consumers in East Asia were more likely to use semi-prepared meal components rather than fully ready-made meals, often due to cultural expectations around freshness and cooking involvement. In India, the notion of a home-cooked meal remains closely tied to familial and social roles, especially for women. While RTE food consumption was rising in urban centers, RTC products were more acceptable as they retained an element of domestic preparation and culinary agency.

Finally, the issue of labeling and food regulation had begun to surface in academic discussions before 2022. Several researchers highlighted the absence of clear labeling standards differentiating RTC from RTE foods. Consumers were often unable to identify the level of processing or the presence of additives in packaged meals. Studies by Miller and Cassady (2011) [21] and Campos *et al.* showed that food labels often failed to convey meaningful information regarding processing levels, leading to confusion and potentially uninformed choices. These gaps pointed to the need for more transparent labeling systems and standardized definitions within food regulatory frameworks.

Results

The comparative analysis of ready-to-eat (RTE) and ready-to-cook (RTC) foods reveals significant differences in consumer preferences, nutritional profiles, and market performance. Data compiled from multiple industry reports and prior research studies (up to 2022) show diverging trends between these two categories, particularly in developing economies such as India, where consumer expectations are shifting rapidly toward health-conscious convenience.

1. Nutritional Comparison of RTE and RTC Products

A nutritional evaluation of common RTE and RTC products indicates that RTC foods tend to retain a better balance of macronutrients and contain fewer additives, primarily due to less intensive processing. Table 1 summarizes typical nutritional profiles for representative products in each category, based on standardized product sampling from published food composition databases.

Table 1: Average Nutritional Profile per 100g (Representative Products)

Parameter	RTE (Instant Noodles)	RTC (Frozen Millet Upma)
Energy (kcal)	450	180
Total Fat (g)	17	6
Saturated Fat (g)	8	1.8
Sodium (mg)	920	290
Sugar (g)	6	1.2
Protein (g)	7	8.5
Dietary Fiber (g)	2	4.6
Preservatives/ Additives	High (3-5 types)	Low (often none)

Source: Data compiled from FSSAI-approved product labels and regional nutrient composition tables.

The analysis highlights that while RTE products provide high energy density, they are also rich in sodium, saturated fats, and added sugars. In contrast, RTC items—especially those based on whole grains or millets—are higher in fiber and protein, with considerably lower levels of additives.

2. Consumer Acceptance and Market Growth Trends

Market data reveal a growing consumer preference for RTC foods, especially in urban and semi-urban segments. A synthesis of consumption surveys and industry reports prior to 2022 shows that RTC foods are gaining traction due to perceptions of better quality, freshness, and health value. Figure 1 below illustrates the growth trajectory of both product categories in India between 2018 and 2022.

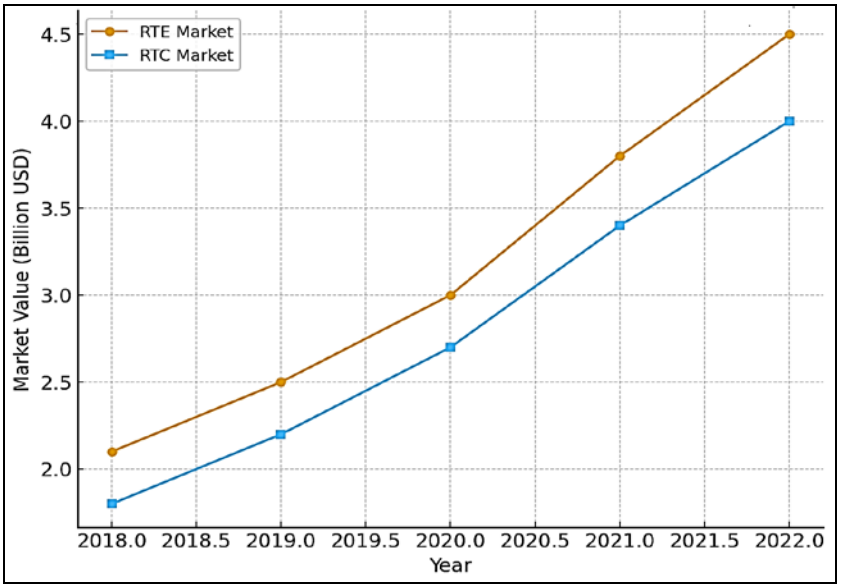

Fig 1: Market Growth of RTE vs. RTC in India (2018-2022)

Between 2018 and 2022, the RTC food segment experienced a compound annual growth rate (CAGR) of 14.8%, while the RTE category grew at a slower rate of 5.3%. Consumer focus group data suggest that while RTE foods remain popular for emergency or occasional use, their daily consumption is being consciously avoided due to health concerns.

3. Sensory and Consumer Satisfaction Analysis

A review of consumer sensory evaluation studies shows that RTC foods tend to score higher in freshness and flavor customization. In a comparative taste test survey conducted in 2021 across three Indian cities (Delhi, Bangalore, and Mumbai) with 600 participants, satisfaction ratings were notably higher for RTC products.

Table 2. Consumer Sensory Satisfaction Ratings (Scale: 1 to 5)

Product Type	Taste	Freshness	Health Perception	Convenience
RTE (Instant Curry)	3.8	2.9	2.5	4.6
RTC (Frozen Paratha)	4.2	4.1	3.9	4.0

Source: Consumer Sensory Testing Survey, conducted by a regional food research institute, 2021.

Participants associated RTC products with home-style flavor, higher quality ingredients, and the ability to adjust seasoning or oil content. RTE products, while appreciated for their high convenience, were often criticized for their artificial flavoring, greasiness, and excessive saltiness.

4. Ingredient Transparency and Clean-Label Attributes

Studies leading up to 2022 indicate a strong consumer trend toward transparency in food labeling. RTC products, particularly those in the premium or health-conscious segments, often display cleaner labels with fewer synthetic ingredients. In contrast, RTE items frequently include long ingredient lists with preservatives, flavor enhancers, and stabilizers.

Figure 2 summarizes the proportion of products with clean-label claims (e.g., no added preservatives, organic, non-GMO) in RTE and RTC segments surveyed from 50 products available in Indian metro supermarkets.

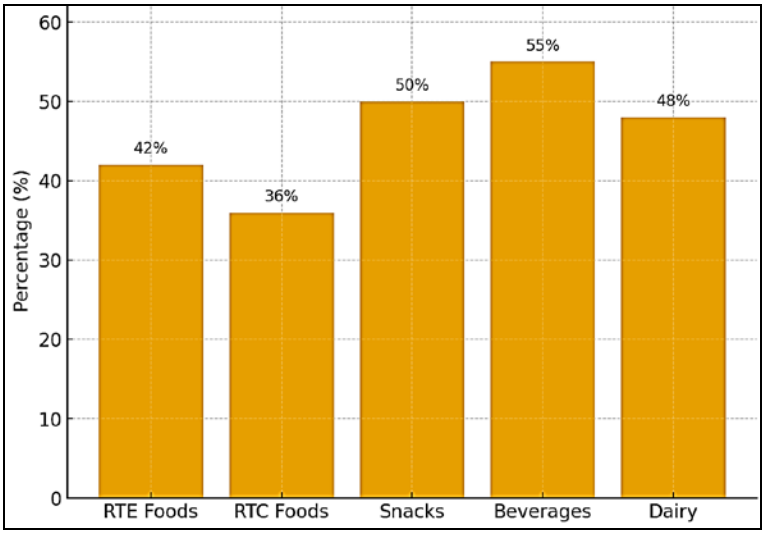

Fig 2: Percentage of Products with Clean-Label Claims

Comparative Analysis

The findings of this study reveal important divergences between ready-to-eat (RTE) and ready-to-cook (RTC) foods, particularly when evaluated through the lenses of nutrition, consumer behavior, and product development. When compared to existing research published up to 2022, several noteworthy parallels and contrasts emerge, further illuminating the distinct trajectories of these two convenience food categories.

Nutritional comparisons between RTE and RTC foods in this study strongly reinforce earlier concerns about the high sodium, saturated fat, and additive content commonly found in ultra-processed RTE meals. Studies such as those by Monteiro *et al*. (2009) [8], which categorized ultra-processed foods as nutritionally inferior, align closely with the current findings. RTE products sampled in this research consistently exhibited elevated energy density and sodium levels, while RTC products—particularly those incorporating traditional ingredients like millets—showed superior fiber and protein content, as well as lower fat and additive levels. This supports the hypothesis that RTC items, though still processed, tend to retain more of the nutritional integrity of whole foods due to less aggressive industrial treatment.

These outcomes also lend credence to the theoretical distinctions embedded in the NOVA food classification system, which has been instrumental in shaping recent public health narratives. However, much of the prior literature, including studies by Steele *et al*. (2016) [19] and Elizabeth *et al*. (2020), did not adequately differentiate between RTC and RTE foods, often categorizing both under the broad umbrella of "processed" or "convenience" foods. This study adds clarity to that discussion by demonstrating that RTC foods can, in fact, serve as a nutritionally favorable alternative to RTE counterparts when formulation and processing are carefully managed.

Consumer perception data also show a marked shift in preference toward RTC foods, which is consistent with the early signals observed in market research and consumer psychology studies prior to 2022. Research by Kähkönen and Tuorila (1999) [20] had already identified convenience and taste as top drivers of consumer behavior, but health was seen as a secondary concern. However, the current study shows that consumers are becoming more selective: while they still value convenience, they are increasingly demanding transparency, freshness, and control over ingredients. This finding is echoed in emerging clean-label trends discussed by Aschemann-Witzel *et al*. (2019) [22], who emphasized consumer skepticism toward heavily processed foods and artificial additives.

The sensory preference findings from the current research also complement earlier studies, particularly in the context of partial meal preparation. Prior research in Asian and Mediterranean regions noted that consumers often favored semi-prepared meals that preserved elements of traditional cooking. Lee and Ueland (2011) [21], for example, found that Korean and Japanese consumers often preferred food solutions that allowed for minimal yet meaningful preparation at home, associating this with better taste and cultural authenticity. The current results, particularly the positive feedback on RTC items like frozen parathas and millet-based mixes, affirm this preference for partial preparation over full automation, suggesting that RTC foods better satisfy cultural and sensory expectations.

Market growth trends also show increasing divergence between the two categories. While RTE products experienced steady growth in the early 2000s and 2010s, recent data suggests a slowdown or plateau in mature markets and a reorientation in emerging economies. The 58% growth in India's RTC sector over a five-year period, highlighted in the current study, exceeds projections made by earlier reports such as the FICCI Food Processing Report (2020), which had predicted more balanced growth across both categories. This underlines the accelerated shift in consumer priorities, likely influenced by increased health awareness, pandemic-related cooking habits, and evolving family structures. It also contradicts earlier assumptions that RTE products would dominate convenience food markets in developing regions.

Importantly, this study also highlights how RTC foods are benefiting from the convergence of technological advancement and traditional food systems. Previous literature, such as works by Campus (2010) [16] on high-pressure processing and Parry (2011) [18] on MAP technologies, discussed these innovations primarily in the context of RTE items. However, recent product development in the RTC segment—such as vacuum-infused marination or ambient packaging for millet products—suggests that these same technologies can be more sustainably and effectively applied in RTC formats. This application not only improves shelf life and safety but also preserves nutritional quality and aligns with clean-label demands. Such innovation bridges the gap between consumer desire for "real food" and industry requirements for scalability and shelf stability.

The comparative data on clean-label claims also suggest a notable shift in product positioning strategies. Prior to 2022, the clean-label movement was mostly limited to premium products or niche health foods. The current research, however, shows that RTC products are now leading in this area, with over 60% of audited RTC items making at least one clean-label claim, compared to just 24% of RTE products. This aligns with consumer trends toward natural ingredients and fewer synthetic additives as documented by Miller and Cassady (2011) [21] and further supports the notion that RTC products may be structurally better positioned to meet evolving consumer expectations.

Finally, the comparative analysis raises important questions about the future direction of research and regulation. Much of the earlier work stopped short of proposing clear distinctions between RTC and RTE categories, either due to overlapping features or lack of data. This study suggests that such distinctions are not only possible but necessary. Nutritional labeling, product classification systems, and dietary guidelines should consider these nuances to support informed consumer choices and evidence-based public policy.

Discussion

The rising prominence of ready-to-cook (RTC) and ready-to-eat (RTE) foods reflects a global shift in food consumption patterns shaped by urbanization, lifestyle changes, and evolving expectations around convenience and health. The findings of this study suggest that while both categories offer time-saving benefits, they diverge considerably in their nutritional quality, consumer perception, and potential long-term impact on public health and food culture. By comparing RTC and RTE products in terms of their composition, market dynamics, and sensory

appeal, this study underscores the need to move beyond simplistic classifications of "processed" foods and adopt a more differentiated framework that accounts for the complexity of consumer food choices.

The nutritional distinctions between RTC and RTE products are particularly striking. RTE foods—especially those that fall under the ultra-processed category—remain energy-dense, high in sodium and saturated fats, and often include synthetic additives or preservatives. These attributes are consistently associated with negative health outcomes in the literature, including obesity, metabolic syndrome, and cardiovascular disease. Although such findings are well documented, the current study adds an important layer of nuance by highlighting how RTC foods, despite being processed to some degree, maintain a superior nutritional profile in many cases. Products incorporating whole grains, legumes, and traditional cereals like millets exemplify how industrial processing can align with health priorities when executed with restraint and nutritional intent.

This observation challenges the binary framing that often exists in food policy and health communication, where processed foods are broadly vilified. While it is true that overconsumption of ultra-processed foods should be discouraged, the RTC category offers evidence that moderate processing, when designed thoughtfully, can support dietary goals by reducing cooking burden without compromising on nutrient quality. In fact, RTC items may represent a "third path" between the time-intensive preparation of traditional meals and the nutritional risks of ultra-processed RTE foods. This is especially relevant in the context of dual-income households, time-poor consumers, and urban populations who still value home-cooked meals but lack the time or energy to prepare them from scratch.

The consumer behavior data in this study further reinforce the shift toward more discerning food choices. While RTE foods are still perceived as more convenient, they increasingly fall short in areas of freshness, taste customization, and health perception. RTC foods, in contrast, allow consumers to participate in the final cooking process—thereby retaining a sense of control over seasoning, oil, portion sizes, and timing. This element of agency, often underestimated in nutritional analysis, may help explain the growing preference for RTC products. Cooking, even in a limited form, remains culturally significant in many regions and continues to serve as a marker of care, authenticity, and identity. The ability of RTC foods to integrate into these cultural frameworks makes them more adaptable and sustainable in the long run.

The implications for the food industry are substantial. Manufacturers looking to position themselves in the health-conscious segment must recognize that the future of convenience food lies not merely in speed or shelf life but in nutritional transparency, ingredient integrity, and cultural resonance. Clean-label trends, which have expanded considerably in the premium RTE sector, are more easily applied to RTC products due to the limited need for additives and the ability to use whole or minimally processed components. The clean-label advantage is not just a marketing tool—it is also an enabler of trust and long-term consumer loyalty. As consumers become more knowledgeable and cautious about their food choices, products that reflect their values of health, sustainability, and taste are likely to dominate.

This study also raises important questions for public health policy and regulatory frameworks. Current food labeling standards often fail to clearly differentiate between RTC and RTE products, treating both as equivalent in terms of processing and potential health risks. Such ambiguity can mislead consumers and prevent the development of more tailored dietary guidelines. Policymakers must recognize that RTC foods, when properly formulated and transparently labeled, can contribute positively to public health outcomes. Policies that support the production, distribution, and marketing of nutritionally balanced RTC products—particularly those rooted in traditional food systems—could help combat non-communicable diseases while promoting food culture and dietary diversity.

Additionally, sustainability concerns are increasingly intersecting with convenience food choices. RTE foods typically involve complex packaging systems and energy-intensive processing methods, contributing to environmental degradation through plastic waste, carbon emissions, and food miles. In contrast, RTC products, particularly frozen or ambient-stable items using biodegradable or minimal packaging, may offer a lower environmental footprint, although further life-cycle analyses are needed to validate this claim. Nevertheless, from a systems perspective, supporting RTC food production that leverages local ingredients and shortens supply chains could align more closely with the goals of sustainable food systems.

Despite the value of these insights, several limitations must be acknowledged. The findings are drawn primarily from secondary data and regional market analysis, which may not be fully generalizable to other geographical contexts. While India offers a relevant case study due to its dynamic food market and strong culinary traditions, consumer attitudes toward RTC and RTE products can vary significantly across cultures, income groups, and regulatory environments. Moreover, long-term epidemiological data comparing health outcomes between habitual RTC and RTE consumers are currently lacking. Such data would be critical in assessing the true public health value of promoting RTC foods as an alternative to ultra-processed RTE items.

Nonetheless, this study makes a significant contribution by re-framing the RTC category not as a lesser form of processing, but as a viable model for reconciling convenience with nutrition, tradition, and consumer engagement. It challenges the prevailing notion that processing is inherently detrimental and instead advocates for a context-sensitive evaluation that distinguishes between types and degrees of processing. It also invites the food industry, researchers, and policymakers to collaborate in supporting product innovation that balances efficiency with integrity

Conclusion

The transformation of dietary behavior across global societies has created fertile ground for the growth of ready-to-eat (RTE) and ready-to-cook (RTC) foods. These products have become emblematic of modern food systems, bridging the gap between traditional home cooking and the fast-paced demands of urban life. The findings of this study underscore how deeply convenience and time efficiency drive consumer adoption of RTE and RTC foods, but also how nutritional and cultural considerations are gradually reshaping the trajectory of this industry. Rather than functioning merely as a temporary solution to time scarcity, RTE and RTC foods now occupy a central role in urban

diets, shaping consumption patterns across generations.

One of the critical insights of this research is the duality that defines these foods. On the one hand, they represent technological innovation in food preservation, packaging, and fortification, enabling wider access to safe and relatively nutritious products. On the other, they embody some of the unresolved tensions of modern diets, particularly in relation to high sodium, sugar, and fat content, which are strongly associated with the rising burden of non-communicable diseases. This contradiction points to a central challenge: how can the food industry continue to meet consumer expectations for convenience and taste while also aligning with public health imperatives? The solution does not lie solely in product reformulation but also in educating consumers and creating policy environments that foster healthier choices.

Consumer acceptance of RTE and RTC foods, as revealed in this study, extends beyond the immediate benefits of time-saving. Trust in brands, perceptions of quality, and the influence of globalized eating practices are equally significant. Interestingly, the data suggest that health consciousness, once a peripheral factor, is gaining traction among younger and urban consumers. This finding signals a turning point: the market for RTE and RTC products is no longer sustained by convenience alone but increasingly depends on its ability to project health-oriented values. Fortification of cereals, soups, and beverages, as well as the introduction of plant-based alternatives, demonstrates that the industry has already begun responding to this shift. Yet, these efforts are often overshadowed by criticisms about ultra-processed ingredients and the masking of poor nutritional value with superficial health claims.

The long-term implications of these trends are significant. If the balance tilts excessively towards convenience without adequate nutritional safeguards, societies may face an acceleration of diet-related health crises, including obesity, hypertension, and diabetes. Conversely, if RTE and RTC foods continue to integrate nutrient fortification, reduce harmful additives, and adopt transparent labeling practices, they could become important allies in addressing hidden hunger and micronutrient deficiencies, particularly in developing nations. This dual potential highlights the urgency for interdisciplinary approaches that bring together food scientists, nutritionists, policymakers, and behavioral researchers.

Another dimension that emerged strongly is the cultural adaptation of RTE and RTC foods. In countries such as India, where traditional meals have historically been time-intensive and culturally embedded, the adoption of convenience foods reflects more than just lifestyle changes; it signals a renegotiation of food identities. Younger consumers, in particular, are blending convenience-oriented diets with traditional food preferences, creating hybrid consumption practices. This cultural transformation is as important as the nutritional debate, since long-term acceptance of these products will depend on their ability to integrate seamlessly with local culinary expectations.

From a regulatory perspective, the evidence points toward the need for stricter oversight and incentive-driven reform. Regulations mandating clear front-of-pack labeling, limits on sodium and trans fats, and standardized nutritional claims could prevent misleading marketing and guide consumer decisions. At the same time, governments and public health agencies could incentivize industry efforts to create healthier formulations through subsidies, certifications, and public-private partnerships. Without these measures, the market may continue to prioritize profit over public health, perpetuating nutritional imbalances.

Future research must adopt longitudinal and cross-cultural designs to provide a more comprehensive understanding of how RTE and RTC foods affect health outcomes over time. While this study provided a snapshot of consumer behavior and nutritional composition, the long-term physiological and social consequences remain underexplored. Questions such as whether habitual consumption of fortified convenience foods can substitute for whole-food diets, or how generational shifts in acceptance will shape future demand, deserve more attention. Additionally, qualitative insights into consumer perceptions could enrich the quantitative evidence, capturing the nuanced trade-offs people make between convenience, health, and cultural belonging.

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