



GENERATIONAL STUDY ON MOBILE APPLICATION ADOPTION FOR GEN X AND GEN Y - A MULTI-INDUSTRY ANALYSIS

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Abstract

Smartphones are today an integral part of daily life and mobile based applications are the key point of consumer engagement across different sectors. Yet assumptions about how Generation X (born between 1965–1980) and Generation Y (born between 1981–1996) adopt these technologies are dependent on an empirical foundation which differs widely by industry. This study conducts a systematic literature review, grounded in Generational Cohort Theory and operationalized through the TAM and UTAUT2 framework to examine generational adoption patterns across seven sectors - Banking, E-commerce, Food delivery, Telecom, Beauty and Personal care, Mobile Health, and OTT streaming.

Findings showed that PEOU acts as a threshold condition for Generation X, who prefer to clear a usability bar before adopting, whereas Generation Y treats usability as a given and is driven more by PU, and in some sectors, hedonic or social value. Perceived risk emerged as a stronger deterrent for Generation X, with trust functioning as an independent predictor rather than a strict precondition for adoption. Several assumed generational patterns such as differential SI and habit-based differentiation among them had weaker support than expected. The study revealed a distinct imbalance in research depth : Banking, E-commerce, and mHealth are well studied, while Telecom self-service, Beauty, and OTT streaming show a clear absence of direct comparative evidence. From this synthesis, a conceptual model and seven propositions were formed to guide future empirical work, particularly within the identified gap industries.

Keywords: generational cohort theory, mobile application adoption, Generation X, Generation Y, cross-industry study

1. Introduction

1.1 Background and Context

Mobile applications (apps) are deeply rooted in the daily life of a consumer behavior. Across the world and in fast growing digital economies like India, apps outline how people shop, use banking services, order food, manage health and use entertainment. With over 1.1 billion smartphone users and the lowest mobile data prices globally, India has evolved from a market where apps were considered to be luxury to one where they are now a part of daily life (ResearchAndMarkets, 2025, Statistica, 2025).

1.2 Motivation for the Study

Even though app usage appears to be widespread, all users do not engage with technology in the same way. The actual adoption behavior differs based on individual comfort with digital tools, trust in the technology and motivation to use. The generation background plays a significant role in shaping these differences. A Gen X and a Gen Y both may be using smartphones, yet their choice to adopt and consistently use an app differs. These differences are due to the different environment each generation grew up in. Gen X grew up much before the availability of internet and later in life adapted to digital tools, whereas Gen Y grew up alongside social media, e-commerce and early smartphones, adopting to digital interaction from a young age (Calvo-Porral & Persqueira-Sanchez, 2020).

1.3 Research Gap

Even with the growing academic interest in mobile app adoption, several gaps remain. First, most existing studies examine adoption within a single industry (Banking, Food delivery or Health care) without exploring generational patterns across multiple sectors simultaneously, leaving cross industry comparison largely unaddressed. Second, while direct comparisons do exist in the literature for Generation X and Y, they are concentrated in small number of industries – Banking, e-commerce and mHealth. Third, while India features prominently in some industries research mentioned above, it is under presented in generational adoption studies for Telecom, Beauty and OTT studies. Majority of the empirical studies have been conducted in Southeast Asia (Indonesia, Vietnam, Thailand), Europe (Romania, Poland) and South Korea.

1.4 Research Objectives

This paper intends to address these gaps by comparing the mobile application adoption behavior of Gen X and Gen Y across seven key service industries.

The study is guided by the research questions stated below :

1. How do Gen X and Gen Y differ in the mobile application adoption behavior ?
2. How does generational cohort influence the relationship between UTAUT2, TAM adoption constructs and mobile app adoption intention across different industries ?
3. Which industries show sufficient generational evidence to support clear conclusions, and which represent priority areas for future empirical research ?

The paper is structured as follows, Section 2 explains the theoretical foundation supporting the study. Section 3 presents a review of literature, organised by both theoretical construct and industry context. The conceptual model developed is presented in Section 4. The findings and discussion are covered in Section 5 and 6. Section 7 and 8 address the limitations and give directions for future research.

2. Theoretical Framework

The study is based on three theories; each theory contributes a different aspect. First explains how users evaluate technology, second builds its relevance to everyday use and the third explains the differential behavior between people born in different times.

2.1 The Technology Acceptance Model (TAM)

The TAM Model was introduced by Fred Davis in 1989, and later expanded by Davis et al. (1989). It is a widely used framework for understanding adoption behavior to a new technology. As per TAM, the usage of a technology depends on two perceptions, Perceived Usefulness (PU) - Would it genuinely help to achieve something faster or better and Perceived Ease of Use (PEOU) - can the technology be used without putting in much efforts or easily. These two perceptions shape a person's attitude towards the technology, which in turn shapes the user intention and leads to actual use. Over the years, extensive research across different sectors – Banking, Healthcare, Food delivery and many more have supported this concept.

2.2 UTAUT and UTAUT2

While TAM is reliable, it does not completely account for the social and situational factors which also influence technology adoption. To address this, Venkatesh et al. (2003) combined eight adoption theories into a single framework – the Unified Theory of Acceptance and Use of Technology (UTAUT). This model introduced four key factors : Performance Expectancy (PE) – how much someone believes that technology will benefit them, Effort Expectancy (EE) – the ease of using the technology, Social Influence (SI) – whether people around them encourage its use and Facilitating conditions (FC) – if the right support and infrastructure is available to support use.

Later, this model was extended into UTAUT2 by Venkatesh et al. (2012), for consumer contexts. UTAUT2 added three more factors : Hedonic motivation (HM) – is the technology enjoyable to use, Price Value – is it worth the cost and Habit (HB) – does the use happen automatically because it's there. These additions made UTAUT2 useful for understanding how users adopt mobile apps in their daily life.

2.3 Generational Cohort Theory

Generational Cohort Theory, rooted in the sociological work of Karl Mannheim (1928/1952) and later popularised in consumer research by Strauss and Howe (1991), argues that people who grow up during the same historical period, share formative experiences that shape their values and behaviours for life. Their framework was subsequently adopted widely in consumer and marketing research to segment audiences by generational cohort. These shared experiences created a kind of generational identity, a common way of seeing the world, including the world of technology. Generation X grew up with analogue media, entered the workforce before smartphones existed, and adopted digital tools as adults in professional settings. This gave them a utility first relationship with technology : they use it when it clearly works and clearly helps. Generation Y grew up with the facility of internet, social media, and early smartphones making their relationship with digital technology far more experiential, social, and hedonic (Calvo- Porral & Pesqueira-Sanchez, 2020 ; Kumar et al., 2025). This theory provides the moderating lens through which TAM/UTAUT2 constructs are filtered in the conceptual model proposed in this paper.

3. Literature Review

This review is organised into two parts. The first part looks at the key factors which influence app adoption while the second part covers studies industry wise covering E-commerce, Banking, Food delivery, Telecom, Beauty & care, Healthcare and OTT streaming.

3.1 Perceived Usefulness(PU)

PU and its UTAUT2 counterpart, performance expectancy is a frequently tested construct in mobile app adoption related study. It appears as a significant predictor of adoption intention for both Generation X and Generation Y across several industries reviewed in this study, though its relative weight and specific meaning vary by industry and generation.

3.2 Perceived Ease of Use (PEOU)

PEOU along with its UTAUT2 counterpart effort expectancy consistently shows up as a more decisive factor for Generation X than for Generation Y. Across several industries, Gen X users appear to treat ease of use as threshold that must be cleared before adoption, while Gen Y tends to treat it as a baseline assumption rather than a driver. This is explored in depth in the sections that follow and forms one of the dominant findings of this study.

3.3 Trust and Perceived Risk (TPR)

TPR appear together throughout the literature, most prominently in Banking, e-commerce and Healthcare contexts. Perceived risk generally functions as a stronger adoption barrier than trust functions as an enabler, particularly for Generation X. However, the evidence does not support trust acting as a strict precondition for adoption. In most studies, trust operates as one significant factor among several, rather than a gate that other factors depend on.

3.4 Social Influence (SI)

SI is commonly assumed to matter more for Generation Y than for Generation X, because of Millennials' greater exposure to peer driven and social media-based platforms. The literature reviewed here complicates

this assumption. While some studies suggest peer influence plays a larger role for Millennials in specific contexts, recent cross generational study found SI's effect on adoption did not differ significantly by generation, only the degree of exposure to it did. This contested finding is discussed in the sections that follow.

3.5 Hedonic Motivation (HM)

Hedonic motivation or enjoyment caused by using an app is often assumed to matter more to Generation Y than to Generation X. The evidence reviewed here suggests this is not consistently true. In some industries, such as e-commerce, HM was found to significantly influence Gen X's adoption as well. In others, like Food delivery, it did not differentiate the two generations. This suggests HM's importance depends on industry context than on generation alone.

3.6 Habit and Facilitating Conditions (HB & FC)

HB from the UTAUT2 model appear in the literature but with less consistent generational evidence. Habit based usage patterns are often assumed to differ by generations, but the studies found no substantial difference between Gen X and Gen Y with a sharper divergence by this difference observed between Gen Y and Z. Facilitating conditions such as network reliability or infrastructure support appear relevant in banking and telecom context, though without any consistent generational pattern.

3.7 E-Commerce Mobile Applications

One of the most active E-commerce markets worldwide is found in India. Platforms such as Flipkart, Amazon, Meesho and Myntra have built strong mobile first shopping experiences. Quick e-commerce apps like Blinkit, Zepto and Swiggy has further pushed the shift to app-based shopping. In this context, generational differences in E-commerce app use are commercially important.

Lissitsa and Kol (2016) who conducted one of the earliest direct comparisons of Generation X-Y online shopping behavior found meaningful differences in loyalty, digital engagement and purchasing patterns between the two cohorts despite higher digital engagement from Generation Y. This was extended in Lissitsa and Kol (2021) who studied hedonic mobile shopping across four generational cohorts and linked generational differences in m-shopping purchase intention to underlying personality traits, providing a psychological mechanism for why younger generation engaged more readily with mobile first shopping experience.

In the Indian context, Arora, Malik and Chawla (2020) found that Generation Y users in Delhi-NCR engaged with mobile apps more extensively than Gen X and displayed greater innovativeness and openness towards app-based experiences. Gen X users formed more negative perceptions about the app despite the convenience. This finding is supported by Yoga and Triami (2021) whose UTAUT2 based study of Indonesian Gen X E-commerce users found that HM, PE, HB and price value significantly predicted acceptance while SI did not - suggesting that Gen X's engagement with E-commerce apps was driven by personal utility and enjoyment.

Trust and risk perception emerged as the second major reason of generational differences. Panjaitan et al. (2019) found that although e-commerce users from Generation X perceived online shopping positively in terms of PU and PEOU, their perceived risk levels remained comparatively high, indicating that functional confidence did not completely resolve Generation X's trust concerns. This was reinforced by Cabeza-Ramírez, et al. (2022) who compared Gen X and millennials on their responses to product recommendations driven by influencers. They found systematic differences in product involvement, perceived trustworthiness and perceived risk between both the generations.

Rachbini et al. (2024) examined how utilitarian browsing, hedonic browsing, electronic word of mouth, satisfaction and loyalty differed among Millennials, Generation X and Baby Boomers in Indonesian online marketplaces. They found systematic generational differences in how these factors affected online shopping behavior. At a theoretical level, Kowalska and Nguyen (2025) in a large-scale study of 2400 respondents across four generations in Poland, found that SI significantly predicted mobile application adoption intention but the strength of this relationship did not differ significantly across the generational cohorts. The generations only differed in their perceived exposure to SI and not in how strongly it shaped their behavior. This finding contradicts assumptions that Generation Y is more responsive to SI than Generation X, suggesting that the generational gap in the E-commerce app adoption could be better explained by differences in trust, risk perception and habitual usage patterns

This body of literature suggests that Gen X and Gen Y diverge in e-commerce application adoption along dimensions of trust, risk tolerance and habitual engagement. Generation X's adoption is more dependent on

reliability and personal utility while Generation Y's adoption is shaped by habitual, low friction engagement patterns formed through early and sustained digital exposure.

3.8 Mobile Banking Applications

Mobile banking is an industry where trust and risk perception are consequential, since financial loss carries high stake than a poor experience. The 2016 demonetisation led to fast growth of UPI and growth of digital banks like Paytm, Jupiter. These developments overcame nearly a decade of digital banking adoption into just a few years, turning India into a fast forward case study on how different generations respond to banking apps under pressure.

Singh and Sharma (2023) looked at Gen X and Millennial adoption in FinTech payment services in Delhi-NCR during COVID-19. Using an extended TAM model, they found that PEOU, PU, perceived COVID-19 risk and mobility restrictions shaped the user intention. Peer influence (subjective norm) was significant for Millennials but not for Gen X. Complementing this, Mer and Viridi (2023) in their study of Indian Millennial e-banking users found that adoption was discouraged by perceived risk, while encouraged by trust, SI and ease of use. Risk had a stronger negative effect than positive effect of trust, highlighting that reducing risk matters more than building trust when it comes to winning over cautious users. Shams et al.(2020) in a qualitative study of mobile banking users across Generation X, Y and Z found that Generation X perceived mobile banking as complicated and expected simpler, user friendly functions whereas Generation Y focused more on transactional speed and convenience. This study supported that ease of use is a distinguishing adoption factor.

Jena (2023) in a study of 456 senior citizens across Central India found EE as the strongest predictor of e-banking adoption intention along with significant effects of PE, self-efficacy, TPR and anxiety. This indicated that adoption of older users was shaped by a wider and more risk sensitive set of concerns than younger users. This was supported by Rahman et al. (2024)'s findings who found that PE, EE, trust and personal innovativeness significantly influenced Malaysian Millennials' mobile banking adoption during the COVID-19 phase while there was no impact due to SI and facilitating conditions. Boonsiritomachai and Pitchayadejanant (2017) identified PE as a significant driver of Generation Y's adoption intention, though this study did not include a Gen X comparison. The study indicated even within Gen Y; adoption was driven by demonstrated reliability than by social pressure.

Research from Çera et al.(2022) in South Eastern Europe found no statistically significant variation between Gen X and Gen Y in their mobile banking adoption intentions. Stronger divergence in their study emerged between Gen Y and the younger generation Gen Z where UTAUT2 constructs explained adoption intention less strongly for younger generation. This finding complicates the assumption that habitual, mobile first engagement separates Gen X from Gen Y in banking sector. Srivastava et al. (2024) offered a partial resolution, finding that customer satisfaction, shaped by PE and EE was the key mediating variable in Gen Y's digital payment adoption. This suggests that, the quality of app experience mattered equivalent to the trust in the system even where a strict generational behavioral gap was not statistically evident.

Arruda Filho et al. (2022) examined how perceived risk moderated the relationship between SI, personal innovativeness, PU and trust in mobile banking adoption establishing risk as moderator relevant to designing trust building interventions across user segments though this study did not isolate a generation specific usage frequency effect. Similarly, Alvi et al. (2026) studied digital banking adoption among the Indian digital natives. They used an extended UTAUT3 framework and found that digital literacy and confidence in data security were the two biggest factors driving adoption. The study also found a rural urban divide within the millennial group suggesting more research attention.

These findings suggest that TPR shape mobile banking adoption for both Gen X and Gen Y. The studies find risk sensitivity and reliance on demonstrated reliability characterising both cohorts, with clear divergence emerging between Gen Y - Z rather than between Gen X – Y.

3.9 Food Delivery Mobile Applications

The Indian food delivery sector anchored by platforms such as Zomato, Swiggy and Foodpanda, offers a distinct lens on generational technology adoption because ordering food, unlike banking or e-commerce blends functional convenience with hedonic and social consumption motives. Pinto et al. (2021) noted the rise of Millennials in the Indian workforce, combined with fast paced urban lifestyle as a key driver of sustained growth in the online food delivery market.

Chakraborty et al.(2022), who studied 328 Indian Millennials using the theory of planned behavior, found that HM, utilitarian motivation, price and time saving orientation together shaped Millennials attitude and

behavioral intentions towards food delivery apps. This indicated that for this generation, adoption was driven by a blend of enjoyment and practicality. This was complimented by An, S et al. (2023) in a Korean OFD study using extended TAM, who found that personal innovativeness influenced PEOU while trust affected both PU and PEOU shaping the adoption intention.

Rungruangjitgit and Charoenpornpanichkul (2024) compared three generations in a study of 745 Thai food delivery app users. They found significant differences among Generations X, Y and Z using the Theory of Consumption values with Gen Y placing highest importance on epistemic and social value, while Gen X's behavior centred on functional and conditional value, driven by family, friends and practical considerations and displaying more caution and skepticism towards new technology. Emotional value did not differ significantly across the three generations complicating any assumption that enjoyment alone separated Gen X from Gen Y.

Nguyen et al. (2023) found that personal innovativeness positively influenced Gen Z consumers attitude towards food delivery apps in Vietnam with continuance intention driven by attitude, PU of promotions and subjective norms, while perceived risk acted as a significant barrier. A study by Sen et al. (2026) on young consumers in West Bengal found that attitude, perceived behavioral control, subjective norms and accountability were significantly associated with intention to select environmentally sustainable delivery options with approximately 77% respondents preferring this choice. This suggests sustainability may be an emerging adoption driver among younger app users.

The India food delivery market study of 943 Indian college students (Vaidya, K et al., 2025) found that living arrangement significantly influenced food ordering frequency. Students living in solo arrangement were 4.3 times more likely to order food multiple times a week in comparison to those living with family pointing to lifestyle stage as a moderator of usage intensity within the same generational cohort. This distinction is reinforced by industry data, a YouGov survey found that delivery apps were more popular among younger cohort, with nearly two in five Gen Z and Millennial respondents ordering weekly compared to just 21.5% of Gen X and 10% of Baby boomers providing a real-world behavioral confirmation of the adoption gap.

These studies suggest that Gen X's limited and occasion driven engagement with food delivery apps reflects a combination of lower exposure to social value, greater caution towards new technology and stronger reliance on practical, trust-based consideration. Higher engagement of Gen Y is formed by hedonic and utilitarian motivations with emerging sustainability concerns beginning to influence the youngest cohort.

3.10 Telecommunications Self-Service Applications

Telecommunications self-service applications such as My Jio, Airtel Thanks, Vi app and BSNL's self-care platform occupy a distinct position in the generational adoption literature. Unlike E-commerce, Banking or Food delivery apps, their function is not to introduce customers to a new service category but to shift an existing customer relationship from human assisted channels (call centres, retail stores) towards digital self-management. This makes the underlying adoption dynamics different from the other sectors examined in this review.

Moisescu and Gică (2020) conducted a multigroup structural equation analysis of 445 Generation X and 601 Generation Y telecom customers in Romania. They found that while corporate environmental responsibility drove loyalty more strongly for Gen Y customers, corporate social responsibility had a stronger effect on Gen X customers. This finding established that Gen X and Gen Y Telecom customers responded to different dimensions of a brand's identity and conduct with direct implications for how telecom brands position their apps. Gen X customers in this study were more loyal to the Telecom brand but less likely to switch to digital self-service channels, while Gen Y customers were more open to app-mediated service management but more willing to switch providers.

The launch of My Jio with free data offer, was first adopted by the Millennials consistent with their pattern as early adopters. But Jio's low prices and the app's simple features of recharging, checking data balance and getting support eventually drew Gen X adoption, especially urban professionals who found value in the self-service model once they tried it. The India Mobile Data Consumption Trends Report (2025) predicts that Millennials would lead in adopting 5G, consistent with their new technology openness, while Gen X is expected to lag by around two to three years. This points out that Gen Y tend to adopt first and Gen X follows once the experience feels dependable and well-supported. ResearchAndMarkets (2025) reported that Indian consumers lead the word in mobile data consumption while paying the lowest per GB prices globally, a market condition that shapes the infrastructure environment in which telecom self-service apps operate.

Deloitte's 2025 survey on connectivity and mobile trends found that Gen X users are far more likely than Millennials to call customer service instead of solving a problem themselves through an app. This brings two

observations : Gen X tends to feel less confident troubleshooting issues on their own, and they generally prefer talking to a real person when something goes wrong.

The role of having the right conditions like good network coverage is important in the Telecom context, since app performance depends on the network quality. In places where the network is unstable such as many tier 2 and tier 3 Indian cities, Gen X users are more likely to give up on self-service apps if they malfunction and prefer human channels. Gen Y users on the other hand are more likely to try troubleshooting the issue themselves or find workarounds. This suggests that improving network reliability and making the apps more resilient could be more effective at driving Gen X adoption than redesign or marketing.

3.11 Beauty and Personal Care Mobile Applications

India has the world's fastest growing online beauty market, with sales rising by 39% between June and November 2024 as compared to the previous year. This is overtaking the 3% growth recorded in physical retail (NielsenIQ, as reported by India Brand Equity Foundation, 2025). This growth spans product discovery and shopping apps such as Nyka, Purplle and Myntra Beauty alongside virtual try on tools powered by Augmented Reality (AR). While most of this growth has come from the younger shoppers, Gen X's spending power is beginning to draw increased attention from beauty brands and platforms.

Academic research on AR enabled beauty applications has examined the psychological mechanisms driving adoption and purchase intention, but at the level of the general customer rather than by generation. Micheletto et al. (2025) found that enjoyment, informativeness and PEOU were significant predictors of intention to use cosmetic AR try-on applications among Italian consumers. Barta et al. (2023) identified that AR functionality significantly boosts purchase intention and willingness to pay by helping consumers more easily identify differences between similar options. Whang et al. (2021) similarly found that AR features shape purchase intention in beauty product contexts through control related and experiential mechanisms. None of these studies however report findings basis generational cohort. A partially relevant segmentation study by Zarkada et al. (2025) identified hedonic enthusiast and utility focused segments among beauty virtual try on users. However, this study did not specify age or generation as the defining segmentation variable.

This absence is noteworthy given the theoretical expectation established in other sectors reviewed in this study that Generation X prioritises utilitarian, trust and information driven engagement with mobile applications, while Generation Y engages more readily with hedonic, socially embedded features. A systematic search across Indian and International sources found no study directly examining Gen X vs Gen Y adoption behavior, motivations or usage patterns specific to beauty and personal care mobile applications. This represents a genuine gap in the literature, with the significant growth in this sector. This section is retained in this review where the present study's own comparative analysis of generations is positioned to make an original empirical contribution.

3.12 Mobile Health Applications (mHealth)

Mobile health apps covering everything from fitness tracking and telemedicine to chronic disease management and mental health support represent one of the most consequential areas of mobile app adoption. In India, even though the government has invested heavily in digital health infrastructure through the Ayushman Bharat Digital Mission, access to healthcare is still uneven across the country, hence getting mHealth adoption right really matters.

Subramaniam et al. (2025) found that PEOU was the biggest factor driving Gen X adoption of mHealth apps alongside system quality, mobile experience, playfulness, usefulness and attitude. Gen X users in this study were deterred by interface complexity, uncertain data privacy, and a lack of awareness about what the app actually does with their personal health data. This was supported by Mishra (2018), who directly compared Generation X and Generation Y health app users in India and found that Gen X scored significantly higher than Gen Y on PEOU and PU with no significant difference in trust or usage intention between both the generations indicating PEOU and PU was separating the two generations.

Halvadia et al. (2024) surveyed 537 users and found that app characteristics (data access, interactivity, AI integration, playfulness) and user characteristics (self-efficacy, technological awareness, health consciousness, personal innovativeness) jointly predicted continuance intention. Dhagarra et al. (2020) found PU, PEOU, trust and privacy concern were significant direct predictors of healthcare, technology acceptance among 416 patients in New Delhi while Singh et al. (2024) studying 570 Delhi-NCR telemedicine users, found PE, EE, technology readiness and perceived crowding significantly predicted adoption. Privacy concern was not significant in this sample.

Among Generation Y users, the picture is quite different. Rahman and Uddin (2025) studied 220 Gen Y mHealth users and found that PE was the most influential adoption factor while EE was non-significant. This means that Millennials adopt mHealth apps primarily because they perceive health benefit, treating ease of use as baseline assumption rather than a driver. Park et al. (2023), studying wellness and spiritual self-care apps among younger Millennials and Gen Z, found that app engagement and perceived helpfulness for managing anxiety and sleep quality were key retention drivers, a finding that suggests emotional and wellbeing value dimensions are important for maintaining Gen Y mHealth engagement beyond initial adoption.

Together these findings suggest Generation X's mHealth adoption as more dependent on PEOU and demonstrated functional reliability. While Generation Y's adoption is driven by perceived health benefits and emotional value, with PEOU functioning as an assumed baseline for the younger cohort.

3.13 Over-the-Top (OTT) Entertainment Streaming Applications

The seventh industry covered in this paper is OTT entertainment streaming. OTT entertainment platforms - Netflix, Amazon Prime video, Disney Hotstar, ZEE5 and SonyLIV represent one of the fastest growing mobile app categories, both in India and globally. The adoption acceleration has sharply gone up during the COVID-19 pandemic as broadband penetration and reduced data costs converged with rising demand for home entertainment (Madnani et al.,2020).

Menon (2022) applied Uses and Gratifications Theory to a sample of 576 Indian OTT users across different ages and found that navigation, binge watching and relaxation predicted subscription intentions while entertainment, information seeking and binge watch predicted continuation intentions, entertainment, information seeking and the need for social interaction each played a different role in why people subscribed with the need for social interaction. This established a general motivational framework for OTT engagement, without any generational breakdown. Polisetty (2023) examined OTT adoption across two waves in India (302 respondents in 2020 and 547 in 2022) using Innovation Resistance Theory with TAM. It was found that resistance factors dominated the earlier adoption phase while PEOU and usefulness perceptions drove the later phase. This was a time-based pattern that indicates how Gen X may experience OTT adoption differently from earlier adopting cohorts.

Nagaraj, Singh, and Yasa (2021) examined factors affecting Indian consumers' inclination to subscribe OTT platforms and Patnaik et al. (2024) in a study of 720 Indian OTT users, found that socio-economic and technological factors such as affordability, accessibility and content preference shaped adoption and continued use during the pandemic. Neither of the studies reported a generational breakdown, though the socio-economic framing is directly relevant to understanding the urban-rural and income-based disparities that interconnect with generational adoption patterns.

Liu and Muhammad (2023) conducted a systematic review of factors influencing Generation Z' OTT adoption while Shukla et al. (2024) directly compared Generation Y and Z users in an Indian city context, finding a statistically significant variation in perception between these two cohorts. Generation Y showed stronger attachment to established, broadly popular content compared to Generation Z's fragmented preferences. Sinha et al. (2024) studied millennials OTT subscription intentions and added further Gen Y focused evidence though a direct Gen X comparison group was absent here.

4. Conceptual Model

Drawing from the theories covered in Section 2 and the research findings brought together in Section 3, this paper proposes a conceptual model that brings together how Gen X and Gen Y adopt mobile apps. The model identifies seven factors that influence adoption – Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Social Influence (SI), Trust and Perceived Risk (TPR), Hedonic Motivation (HM), Habit (HB) and Facilitating Conditions (FC). These factors work as predictors of mobile app adoption, measured through Behavioural Intention to Use (BIU) and Continued Use (CU). Generational cohort (Gen X vs Gen Y) is the central moderating variable. Industry type influences the strength of each relationship.

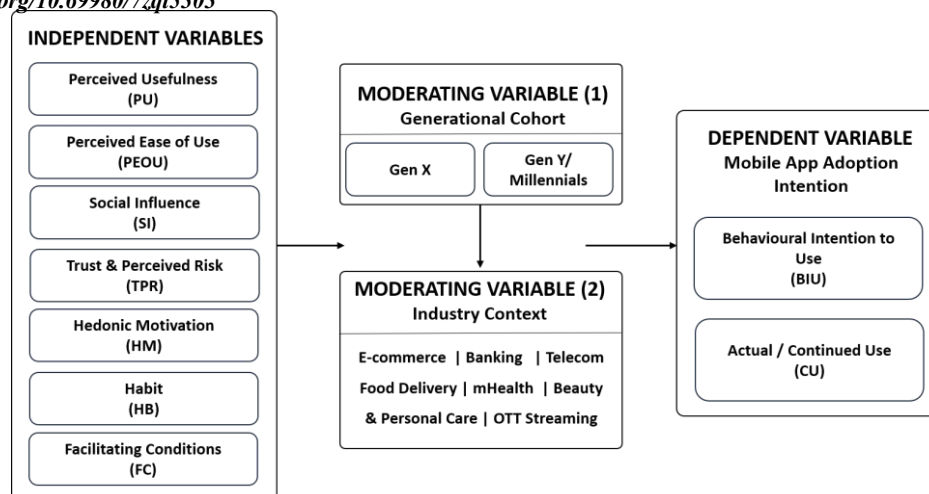


Figure 1: Conceptual Model of Cross-Generational Mobile App Adoption

Based on the relationships shown in the above figure, the following seven propositions have been drawn based on the literature. They are intended as a starting point to future testing.

P1: The effect of PEOU on mobile application adoption intention is stronger for Generation X than for Generation Y, while Generation Y's adoption is driven more by PU or perceived benefit with ease-of-use functioning as an assumed baseline.

P2: The effect of SI on adoption intention does not vary significantly for Generation X and Y; where generational differences appear.

P3: The effect of HM on adoption is not uniformly stronger for Gen Y across industries; its influence on Gen X varies by industry context.

P4: The negative effect of TPR on adoption intention is stronger for Generation X than for Generation Y. Trust functions as a significant but parallel predictor of adoption.

P5: The effect of HB on continued application usage does not differ significantly between Generation X and Y in some industries, while emerging as a differentiated construct in others, suggesting Habit's role as a generational differentiator is industry specific rather than universal.

P6: The relationships between the independent variables and application adoption are moderated by Industry sector.

P7: The maturity and availability of generational adoption research vary by industry.

5. Findings

This section synthesises the findings that emerged from the cross-industry literature review conducted across seven mobile application sectors. As this study is literature based, the findings presented here are patterns, convergences and contradictions identified through systematic synthesis of available details rather than statistically tested results. Two categories of findings are reported:

1. Substantive findings regarding Generation X and Generation Y adoption behavior across the identified constructs.
2. A meta-level finding regarding the uneven state of generational research itself across industries.

5.1 PEOU functions as a Threshold Condition for Gen X, not a Differentiator for Gen Y

Across the industries, PEOU consistently emerged as a more decisive factor for Generation X than for Generation Y. In banking, EE was found to be the strongest adoption predictor among Gen X users. Gen X Telecom and Banking users showed similar lower tolerance for complicated interfaces. In health apps, Generation X scored significantly higher than Generation Y on both PEOU and PU while a separate Gen Y specific mHealth study found EE to be non-significant. This indicates Millennials treat usability as a baseline assumption rather than as an adoption driver. This supports that PEOU operates as a threshold for Gen X while Gen Y's adoption is shaped by perceived benefit.

5.2 Social Influence's behavioral effect may not actually differ by Generation

The popular assumption of "Gen Y is inherently more responsive to SI than Gen X" was not supported from the literature review. The findings stated that SI predicted the behavioral intention equally across all

generations, with generational differences limited to perceived exposure to SI. The impact of SI was not found to be significant in e-commerce and mobile banking adoption as well. This constitutes an important finding that assumptions about generational SI gaps are more contested in the literature.

5.3 Hedonic Motivation is Industry Contingent, not a Uniform Gen Y trait

Conflicting to “Gen Y is more hedonically driven” narrative, hedonic motivation’s role varied by sector. In E-commerce, HM was found to be a significant predictor of Generation X’s adoption, opposite to the commonly assumed pattern. In Food delivery, emotional value showed no significant variation between Gen X, Y and Z, even though social value was significantly higher for Gen Y. This divergence of SI and HM moving independently and sometimes counter to generational stereotypes is a substantive finding.

5.4 Risk Aversion Outweighs Trust as Gen X Adoption Barrier, but Trust is not a Strict Gate

Perceived risk consistently emerged as a stronger deterrent than trust which was an enabler specially for Gen X users. Perceived risk’s negative effect on Millennial e-banking adoption was found to be more consequential than trust’s positive effect. This pattern extended to Gen X specifically in banking and e-commerce, where it was found elevated perceived risk among Gen X despite positive usefulness and ease of use perceptions. The literature available does not support a strict “gating” mechanism in which trust is a precondition without which usefulness or SI cannot operate across mHealth and telecom. Trust and other predictors operated as parallel, direct predictors rather than sequential gates.

5.5 Habit’s role as a Generational Differentiator is inconsistent

Evidence on habit as a distinguishing factor between Gen X and Gen Y was mixed and industry dependent. While some literature suggested habitual mobile first engagement should have differentiated the two cohorts, a few studies found no significant variation between the generations overall, with the more meaningful divergence emerging between Generation Y and Z instead.

5.6 Predictor Relevance and Strength vary systematically by Industry

A cross cutting finding of this study is that no single set of predictors operates uniformly across all seven industries. For example, SI was absent as a construct in the Gen X specific mHealth study while it was central to banking and general mobile app research. Trust operated differently across banking, healthcare and e-commerce contexts both in significance and in relative strength compared to other predictors. This indicates that a single universal model of Gen X/Gen Y adoption cannot be applied across all sectors without accounting for sector specific moderation.

5.7 Generational Research Maturity is highly Uneven Across Industries

A systematic, quality filtered search revealed a stark asymmetry in research maturity across the seven industries examined. This asymmetry is itself a substantive contribution of this review. The maturity of generational technology adoption research is not evenly distributed by industry importance or market size with financial services and e-commerce benefiting from generational consumer research while a few industries such as Beauty, OTT and Telecom remain under examined despite substantial market scale.

5.8 Summary of Findings

The findings suggest that Generation X and Generation Y adoption behavior diverges along specific, identifiable dimensions such as ease of use, threshold, risk sensitivity and industry dependent hedonic/social responsiveness rather than along a single uniform “digital native vs digital adopter” description. Several assumptions common in the industry and popular discourse receive weaker support in the literature than assumed. The uneven distribution of generational research across industries represents a finding in its own right and motivates the original contribution of the present study in three industries – Telecommunications self-care, Beauty and personal care and OTT streaming where this review identified the clearest and most consistent research gaps.

6. Discussion

This section examines the findings from the previous section in light of the theoretical framework supporting this study – Generational Cohort Theory as operationalised through TAM and UTAUT/UTAUT2. The findings section reported *what* the literature shows while this section addresses *what* it means for theory, practice and the for the scope and limitations of the study.

6.1 Theoretical Implications

6.1.1 Refining the Generational Cohort Theory

The theory rooted in Mannheim's proposition that shared formative experiences shapes lasting values and behavior and popularised by Strauss and Howe provided the moderating lens for this study. The findings support as well as complicate this framework. On one side, clear industry dependent patterns emerged – most notably, the recurring finding that ease of use functions as a threshold condition for Generation X but as a baseline assumption for Generation Y (Finding 1). This is consistent with the theory's core foundation : a cohort that adopted digital tools as adults (Gen X) relates to technology differently than a cohort for whom digital tools were present from early life (Gen Y).

On the other hand, this study's most theoretically interesting contribution is where the evidence complicates the simple cohort assumption. The finding that social influence's behavioral effect may not differ significantly by generation at all (Finding 2) suggests that some assumed generational differences may actually be due to differences in exposure or context rather than differences in underlying psychological responsiveness. This distinction matters theoretically as it suggests that Generational Cohort Theory should be applied with more granularity specifying which mechanisms differ by generation and which do not rather than treating generation as a uniformly explanatory variable across every construct.

6.1.2 The case for Industry as a Co-Equal moderator

A second theoretical contribution concerns the role of industry section. Findings 3, 5 and 6 collectively demonstrate that constructs vital to adoption in one industry (hedonic motivation in E-commerce) are non-significant or absent in another (emotional value in Food delivery, SI in Gen X mHealth). This suggests that TAM/UTAUT2 based generational method should not be applied as a single universal framework across mobile application categories. Instead, the study proposes that industry sector functions as a co-equal moderating variable along with generational cohort. This is a refinement to how generational technology adoption research is framed, which tends to treat the mobile app adoption as a single behavioral category rather than a family of related but distinct behaviours.

6.1.3 Reassessing the “Gating” assumption in Trust literature

Finding 4 challenges a common assumption in applied and practitioner literature that trust functions as a precondition or “gate” without which other predictors such as usefulness, SI cannot operate. The evidence reviewed supports a **parallel predictors model** in which trust, risk, usefulness and ease of use each contribute independently to intention to adopt with risk's negative effect outweighing trust's positive effect particularly for Generation X. This is a meaningful theoretical distinction : a gating model and a parallel predictors model imply very different design and intervention priorities, and the literature strongly supports the later.

6.2 Practical and Managerial Implications

6.2.1 For Product and UX Design

The threshold condition finding for Generation X (finding 1) suggests that app designers targeting this segment should prioritise interface simplicity and reliability improvements over feature expansion or gamification. Conversely for Gen Y, the features that appeal would be utility, personalisation or in selected industries hedonic and social features.

6.2.2 For Marketing and Trust-Building Strategy

Finding 4's refinement of the trust risk relationship has direct implications for customer acquisition strategy, particularly in sectors such as Banking and mHealth where the stakes are high. Because perceived risk appears to weigh more heavily than trust building efforts in overcoming Generation X's adoption resistance, risk mitigation communication may be a more effective way than trust building campaigns alone.

6.2.3 For Sector-Specific Strategy

Finding 6's demonstration of industry specific predictor relevance implies that a single generational playbook cannot be applied uniformly across a diversified app portfolio. An OTT industry, for instance, cannot assume that lessons from a banking app's Gen X strategy will directly transfer to self-service channel design based on the limited evidence in that sector.

6.2.4 For the Three Underexamined Sectors

The noticeable research gaps identified in the Telecom self-service, Beauty and personal care and OTT streaming (finding 7) carry a distinct practical implication. Business operating in these sectors are currently making generational targeting decisions with very less or no direct empirical grounding, relying on assumptions transferred from better studied sectors. This is a meaningful practical risk as strategies calibrated on one sector Gen X may not transfer cleanly to another sector.

7. Limitations

There are a few limitations that should be kept in mind. First, this is a literature review that brings together and synthesises existing research, it is not a new empirical study of its own.

1. Evident asymmetry across industries : Three of the seven industries examined did not have Gen X/Gen Y comparative studies. Conclusions in these sectors are more provisional and rely on adjacent domain inference.
2. Geographic and cultural heterogeneity of sources : The literature studies are from India, Southeast Asia, Europe and other regions while its breadth strengthens generalizability in some respects, cultural and infrastructural differences, all the findings may not reflect across contexts.
3. Variable operationalization differences : Constructs “trust”, “social influence” and “hedonic motivation” were operationalised differently across the studies reviewed which limits the precision of direct cross study comparison.
4. No primary data collection / statistical testing : The study is conceptual and synthesis derived rather than empirically tested.
5. The mobile app world is changing very rapidly. AI features, voice interfaces, 5G capabilities may be reshaping how people adopt apps in ways that published studies couldn't capture.

8. Suggestions for Future Research

Several clear directions for future research have emerged from this review:

1. Empirical testing of propositions 1-6 within a single unified survey instrument across multiple industries with direct statistical comparison of predictor strength by generation and by sector.
2. Primary empirical research in the three underexamined sectors (Beauty and personal care, Telecom self-service and OTT streaming) representing opportunity for original contribution.
3. Reconciliation studies targeting the specific contradictions identified through comparative multi country, multi-industry designs.
4. AI powered features in consumer app context should be studied to understand the generational behavior.

9. Conclusion

This study aimed to examine how Generation X and Generation Y adopt mobile applications across seven industries – Banking, E-commerce, Food delivery, Telecom, Beauty and personal care, Mobile health and OTT entertainment streaming. Study was conducted using Generational Cohort Theory, operationalised through TAM and UTAUT /UTAUT2 framework. The review finds that generational differences in mobile application adoption are real but more nuanced than commonly assumed. PEOU consistently functions as a threshold condition for Generation X while for Generation Y, usability is a baseline and is driven by perceived benefit, utility and in selected industries hedonic or social value. Perceived risk, more than trust, appears to be the dominant barrier to Gen X's adoption though trust operates as a parallel predictor rather than a precondition. Several widely assumed patterns received weaker support than expected. Social influence's behavioral effect did not differ significantly by generation and habit-based differentiation was better supported between Generation Y and Z than between Generation X and Y suggesting cohort theory should be applied with more precision about which mechanisms genuinely vary by generation.

From the literature it was observed that the research maturity varies across industries – Banking, E-commerce and mHealth which are well supported by direct comparative evidence, while Telecom self-service, Beauty and personal care and OTT streaming remain under researched. This gap has consequences as business in these industries are likely extrapolating generational assumptions from other sectors without empirical basis.

This study does not test hypothesis empirically but developed seven propositions (P1-P7) intended to guide future research. The most immediate next step is targeted empirical investigation in the three identified gap sectors, where this study's conceptual model can be translated into original, data driven findings. Ultimately,

this study's contribution lies not only in synthesizing what is known about generational mobile application adoption, but in clearly mapping the boundary between established evidence and genuine gaps offering future researchers, and the businesses that depend on their findings, a more honest starting point.

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