

Original Research Article

Traditional cultural values vs. modern consumption trends: Analyzing generational differences in U.S. consumer behavior via big data from online shopping platforms

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Abstract: This study tries to investigate intergenerational differences of U. S consumers who have been influenced by cultural values which are intermixed with consumption habits and is based on Big Data obtained from e-commerce platform such as Amazon. Up to now existing researches based on these issues are small sample surveys which seldom combine fintech and data science for findings which leads to the gaps in finding a proper model to fit the real world behavior pattern. The Desensitized Data used here (2022-2023) encompasses transaction history of order, by investigating browsing trajectory, and product preferences among Gen Z, Millennials, and Baby Boomers in the contemporary age of e-commerce, this paper aims to discover what drives their respective consumption behaviors based on cluster analysis, regression modeling, and sentiment mining. Both traditional values such as individualism and materialism as well as modern trends in consumption like sustainability and experiential consumption differentially impact purchasing frequency, brand loyalty, and price sensitivity of different generations. The results provide data-driven evidence to assist fintech-powered e-commerce businesses in segmenting the U. S. market with more precise approaches toward consumption patterns of different age groups.

Keywords: conventions of traditional cultural values; new trends in consumption; generational differences among consumers; e-commerce big data; fintech

1. Research background and significance

The US consumer market exhibits an obvious difference between generations, rooted deep in how older traditions and more recent modern conventions interact with each other to shape our culture and by consequence influence our purchasing habits. Older generations continue to cling on to values such as individualism and materialism which were created by their unique historical circumstances and the countries societal shifts. Newer trends like sustainable/experiential consume cater to more current, modern aspirations of a younger generation.

due to the change of attitude toward technology and social development leading edge of technological innovation and shifting social attitudes transforms how youth live and behave, i. e., altering current generation of people's life, work, entertainment, learning lifestyle. On the one hand, enterprise, such as fintech companies, encounter difficulties in shaping youth behaviors but find more approaches for youngsters to accept marketing and product strategy. However, existing research lacks adequate exploration of such issues, due to (1) relying largely on a small survey sample and (2) an insufficient integration of fintech and data science into work to probe causal relationships among variables.

Theoretical speaking, this study fills the above gaps with a "traditional values-modern trends-generational behavior" analytical framework, which enriches the interdisciplinary research landscape at the intersection between cultural sociology and data science. Practically speaking, this study uses big data from major U. S. e-commerce platforms (e. g., Amazon), generating practical benefits such as: providing foundations for designing personalized recommendation systems targeted toward Gen Z's consumption tendency; providing references for designing green financial products that cater to Millennials' value choices. All these insights can help businesses narrow the generational gap of consumer demand in the US market that is driven by fintech.

2. Core concept definition and theoretical foundation

To provide a solid theoretical basis, this chapter introduces three important core concepts that underlie an analysis of generational consumer behavior and their meanings.

2.1. U.S. traditional cultural values shaping consumer behavior

Two major traditional cultural factors deeply impacting U. S. consumer actions can be traced back to individualism and materialism. As one of the most basic American traits, individualism highlights people's value of self-development and expression. This is embodied in consumption choices, like how Generation Z focuses on purchasing customized goods such as engraved electronic products or unique garments in order to make them special and different from other ones. Viewing consumption as a tool to showcase one's distinctive personality, while materialism was aroused during post-World War II era after the general economic improvement and concern towards purchasing more favorable and lasting items such as household gadgets. Baby Boomers used this period to associate themselves with product brands. Thus, Boomer generation exhibits strong brand loyalty and maintain their lives for numerous years due to reliability of household device products like vacuum cleaner.

2.2. Modern consumption trends in the U.S. market

A couple of crucial modern trends that have completely remolded US markets recently are sustainable consumption and experiential consumption. Driven by enhanced global climate consciousness and environmental worries, people tend to be picky about eco-friendly goods, especially among Generation Z and millennials who commonly explore products featuring eco-labelling (e. g.,). people prefer items with organic certifications or ones saying they use recycled materials, as well as being happy to pay extra for brands that can show commitment towards the environment. Experiential consumption involves people valuing less physical things like services or enjoyment rather than possessing more objects. There is more emphasis on emotion and intangible things which bring more satisfaction and contentedness rather than buying more things. Subscription services (beauty box subscriptions, meal kits, TV streaming services etc.) fit in nicely here too, appealing most to young subscribers such as Gen Z and Millennials, due to their easy and convenient nature combined with personalized services.

2.3. Generational division and typical consumption characteristics in the U.S

Generational distinctions of American consumerism are punctuated by three distinct groups: Gen Z (born 1997–2022), Millennials (born 1981–1996), and Baby Boomers (born 1946-1964)—Each of which is created through varied historical, economic, and technological influences. In this era, Gen Z members, also known as "digital natives," grew up in a time full of technology and social media, which has given rise to high sensitivity toward current trends such as sustainability and experiential consumption. their choice of buying things tends to be authentic and personalized. Because of the financial crisis in 2008, Millennials take the mixture of thriftiness and sustainability awareness—Unwilling to consume excessive goods but can still spend money on things according to their environmental awareness, they often use digital tools to find cheaper products and discounts. Baby Boomers grow up in the time of economic prosperity and attach importance to the quality and durability of a product. In addition, Baby Boomers adhere to traditional values and are resistant to changes in consumption trends. They are also more brand loyal, not so inclined to pursue novelty, and not apt to accept new consumption patterns without good reasons.

3. E-Commerce big data processing and generational consumer behavior statistical results

This chapter records the research data source, processing method, statistical result based on the desensitized big data of American main e-commerce platforms such as Amazon, and the processing and statistics are all carried out on the data in the whole 2022-2023 period, covering three age groups: Generation Z, Millennials, and Baby Boomers. In addition, it also covers multi-dimension information that captures the comprehensive consumer behaviors. transaction records reflect how often people make purchases every week as well as the average amount spent per purchase. Browsing trajectory records how long users spend in each category and their click-through rate for each category. Product preference tags, which show what products buyers prefer (for example, "sustainable" for eco-friendly goods or "experiential" for subscription services), together these comprise

a diversified data set that makes it possible to capture everything from an individual's purchasing behavior, such as making a transaction, to an individual's preference by evaluating which categories or products they viewed online.

(IQR)make sure that data quality and reliability was maintained in all stages of the data pre-processing. Outliers were eliminated from the transactional data, including abnormal spending amounts (likely to be representative of a business purchase or system error), using the IQR (Interquartile range). The IQR defines an outlier as a value less than $Q1 - 1.5(Q3-Q1)$ or greater than $Q3+1.5(Q3-Q1)$, with Q1 and Q3 representing the first and third quartile of the sample set.

Utilizing the K-means clustering algorithm, consumers were classified according to their preferences based on their browsing behavior and purchasing history, highlighting common behavioral characteristics among individuals in each generation; also, multiple linear regression modeling isolated influences on purchase frequency with generation, product category and monthly income serving as independent variables.

The statistics demonstrate strong distinctions between generations across the three main behaviours purchased. When it comes to purchase frequency, Millennials are most likely to make a purchase weekly (i. e., 3.2 purchases), which is primarily due to being in a life stage where many are establishing families and are buying items like food, home and childcare goods on a regular basis. Generation Z follows (2.1 weekly purchases), while Boomers purchase least frequently (only 1.6 per week).

(28%)acting on stable and lower consumptive lifestyles, product choices of Gen Z give preference to sustainable items by allocating more expenses(28%). Compared with the different consumption tendencies among the generations mentioned above, Millenials choose enduring items such as household appliances as top spending in item types worth 18%, while Baby Boomers concentrate on this top item (household appliances) and take it for 32% of their spending. Baby Boomers hold the highest brand loyal, that is about 72% out of their purchasing bills are for the products coming from the brands used more than three years, and Gen Z exhibits the highest proportion for price sensitivity, about 65%. All of these points feature very clearly the behaviors in different generation's differences.

4. Mechanism analysis of traditional values and modern trends on generational behavior

This chapter examines how traditional cultural values and contemporary consumption trends influence generational consumer behavior, using statistics from Chapter 3 as evidence; and also links the above insight to applications of fintech.

Firstly, traditional cultural values affect different generations'behaviors. Individualism, a prominent value of US culture, promotes Gen Z's interest in personalized goods. 35% of Gen Z prefers customized products such as engraved jewelry or custom-made wearable technology accessories over other generations, considering purchasing customized items as displaying unique personality through consuming items. Besides, rooted in post-WWII prosperity, materialism helps shape Baby Boomer's attachment to top-tier quality, famous brands. Baby Boomers have high loyalty toward popular brands (materialistic) because materialists place value on things that have long-lasting usage and potential benefits in the future.

In the second place, current consumption tendencies serve as a link to transform traditional values, especially the value perception among the younger generation. The willingness of Millennial and Gen Z to pay a premium of 10-15% for green products is significant—This amount is more than the Baby Boomer Generation's and is indicative of a change in the latter's thriftiness due to modern consumption values. Experiential consumption also drives Millennials to use subscription services: from the dataset of subscribers to subscription-based services, it can be seen that Millennials account for over 58%, as they prefer the convenience and tangible experience of using such services (e. g., meal kits, streaming services) to accumulate experiences rather than materials, thereby fulfilling their need for lifestyles.

The next level of analysis suggests that there are generational differences in the relative importance of value versus trend drivers for consumers'behavior. While Baby Boomer consumption choices are driven mainly by traditional values, explaining 62% of their behavioral variance in regressions, for Gen Z behavior is driven equally by both values and trends—with individualism and sustainable and experiential trends accounting

for 78% of their behavioral variance, showing a much more integrated manner of decision making than Baby Boomers.

In the end, these conclusions provide benefits specifically to fintech in the way that this is the point where data science can be applied directly to financial technology—With sentiment mining of reviews on sites such as Yotpo used to find the key trends, such as "affordable sustainability" which Millennials request from fintech companies in regards to their purchases.

Baby boomers' focus on brand loyalty leaves open opportunities for fintech businesses to develop credit products that would benefit longer-term brands by offering preferential terms on purchases made from repeat buyers they trust. These efforts incorporate the study's findings while also showing how fintech could bridge the generational consumption gap through connecting financial products with their individual generational drivers.

5. Conclusions

This chapter brings together the major conclusions from the study and offers targeted recommendations for relevant key stakeholders, as well as discusses the research limitation and outlines potential research streams to provide more value in real life cases to the U. S. e-commerce and fintech fields based on those academic viewpoints.

First of all, the main conclusions from the study were reduced down to 3 major findings. Most basically, the interaction of traditional cultural values with modern consumption trends is what shapes generational differences in consumer behavior in the US: traditional values (individualism, materialism) set up a structure within which people make consumption decisions, while modern trends (sustainable, experiential consumption.) lead them towards certain decisions that people ultimately make.

Second, two important means of reshaping value expressions are highlighted, one relates to younger generations' leveraging new ways of expressing their values, for example Gen Z uses individualism through personalized sustainable goods while Baby Boomers still prefer long-lasting and reputable brands. Second, data science techniques such as cluster analysis, regression modeling, and sentiment mining are all very useful in uncovering such subordinates behind the different behaviors. the abundance of multidimensional e-commerce big data (transaction records, browsing trajectories, preference labels), however, makes it challenging to articulate intergenerational nuance (e. g., "affordable sustainability" for Millennials, or low levels of sustainable product adoption from Baby Boomers). Third, fintech solutions have great potential to bridge generational consumption divides by tailoring their offerings to each cohort's individualized "value-trend" pairing. Instead of using an "all-comers" approach, solutions that account for value-trend information alongside culture will suit more needs across Gen Z, Millennials, and Baby Boomers.

According to the preceding analysis, we offer individualized suggestions for several important stakeholders in the report. E-commerce businesses should give attention to developing the personalized marketing strategies which can fit the personality of different generations. The items about Gen Z generation could stress the sustainable and personal ways in their product promotions such as mentioning the environmentally-friendly properties in the product introductions or descript. offer customization tools on product pages. For Baby Boomers, highlight brand legacy and emphasize how the product lasts a long time through warranties or customer case studies showing how well the products endure use. For fintech firms, scenario-based designs are most critical. To appeal to Millennials' need for "affordable sustainability" financing options that can provide either interest-free or very-low-interest-rate installment payments for eco-friendly goods could fit this demographic well.

For Baby Boomers, linking credit services to long-term brand loyalty and offering favorable interest rates as part of a repeat purchase promotion for popular brands can increase their affinity with such trusted brands. Policymakers should offer incentives to companies promoting consumption in an environmentally friendly and sustainable way while allowing for generational differences. They should offer tax breaks to e-commerce platforms selling sustainable products at discounts (reduce price barrier for Gen Z and Millennials who are more price sensitive) or education programs informing Baby Boomers about the long-term benefits of eco-friendly products (overcome skepticism on emerging consumption trends).

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