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Generational Kinetics: Assessing Inter-Generational Cohort Behavior towards Garnering Financial Information for Generation X, Millennials and Generation Z from Information Channels for Investment Decision Making

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Abstract
Generational studies are relevant to understanding the parameters which impact individual behavior for investment. Demographic segmentation based on birth cohorts factor underlying influences which impact individual behavior. Generation studies factor in changes of experiences and events which impact cohort characteristics. Generational kinetics transcribes the constant changes which impact individuals across age groups. This paper assesses the changes in cohort behavior for garnering financial information across Generation X, Millennials and Generation Z. Each cohort based on their influences of technological development has shown varied propensity to information channels they find relevant for financial decision making. This is relevant as each cohort has been exposed to varied societal changes over time. The assessment of individual behavior through the generational lens is significant in two ways- individual financial investment is critical to economic growth and flow of money in the economy. Individual investment is also impacted by the socio-economic changes that an individual encounters. Strauss - Howe's generational theory factors each cohort as around twenty years, with each generation sharing traits and behaviors which are based on experiences and unique and how each generational cohort gives rise to another. Generations are constantly evolving forming the basis of generational kinetics - each generation giving rise to another. India is a booming and fast growing economy with significant exposure to European and global business and markets. Hence, generational studies on cohort's investment behavior in India is relevant.
Keywords: Generational studies, cohorts, financial information, media, experiences, kinetics

Introduction

Generational studies are imperative as age cohorts are defined by specific experiences and associated memory. Defining age cohorts is crucial for deeper comprehension of investor behavior. Generational aggregation based on age labeling addresses changing characteristics and age progression in demographics. Cohort characteristics change based on generational experiences. In India, the current generations have faced multitudinous changes in the economic and financial sphere. These are reflected in the choices made by the individuals in each cohort. Changes in social behavior are often reflected in these choices collectively. The medium of information dispersion has changed over the past years. (Taylor 2018) Each cohort has faced variation in the sources of garnering information due to evolution of information channels. This technological advancement has brought in changes that have impacted individual behavior. Many of these changes are reflected in the birth cohorts as individuals in the cohort have faced these changes collectively (Bauman, A. A., & Shcherbina, N. V. 2018). Generational cohorts are effective tools to assess changes in viewpoints over time. Age cohorts enable researchers to understand a trajectory of viewpoints in underlying attitudes and behavior. Generational analysis can track wide ranging issues impacting individuals across cohorts. Factors linked with generational variations can be complicated and overlapping.

Generation is determined by events and situations prevalent during its formative years. Global generational studies have shown that different countries have their own specific events and conditions, cohort behavior across regions is different. Generational studies have shown three factors which impact differences in attitudes among age cohorts: *Age effects, Period effects and Cohort effects.* Age effects are due to the differences due to life cycle stages in the individual's life. Period effects are those which simultaneously impact across age like social events and circumstances. These effects have a long underlying impact on the collective population. Cohort effects amongst generations can be due to historical circumstances that an age cohort can experience especially in the process of forming opinions. Sometimes, period effect may impact cohort effect- there can be instances that an older age cohort can experience something that newer generations did not.

Generational Cohort framework

Strauss - Howe postulated the Generation based cohort theory which is based on the concept that each generation brings a new turning which lasts for around twenty years. Each era is signified by changes in social, economic and political changes. These changes are specific to the region under study. Generational units are developed as these common experiences often lead to shared characteristics and impact the mindset of individuals within a cohort subtly. (Moss, S. 2010) Generational identity is relevant for the finance and marketing domain as segmentation is crucial when targeting investors or consumers. Often the *social peers* of an individual belong to the same age cohort. Ivanova et al (2019) determined that media exposure along with social group influence of family and peers impacts self-identity and individual behavior.

Mannheim Generational Theory

Karl Mannheim’s sociological generations consider events from birth to age of maturity in an individual as significant. (Mannheim, K. (1993). Mannheim theory considers that events from formative early years have subtle and lasting effects on personality and behavior, creating the distinctiveness of each generation. In every society and country there will be defining situations, events and moments that determine a specific period. Individuals born and living in similar birth year ranges have shared existence experiences that form a generational basis of cohort study. The individuals may share specifically their typical attitudes with behaviors. They might share traits and aspirations. This in turn will influence every other aspect pertinent to decision related issues making in their life.

There are six cohorts in India demographically- Traditionalists or Freedom fighters , the Boomers or Free generation, Generation X, Generation Y or Millennials , Generation Z and the latest Generation Alpha. While assessing the investor behavior the paper has assessed the cohorts which are in the working and investing age groups that have been considered for the research- Generation X, Generation Y or Millennials and Generation Z.

Generation Kinetics

Generations are in a constant state of flux and movement. Social, economic, demographic changes impact birth cohorts in their formative years and on a continuous basis. Birth cohorts are known to exhibit similarities in characteristic traits, choices and shared values over a period of time. Generations move through life stages together experiencing similar trends and channels of communications which have evolved over time. Though every person is different at individual level the generational cohorts bring in a level of predictability which binds the behavior in a cohort together. This predictability in the generational cohort gives essential insights for business and governments for understanding demographic shifts and cohort behavior over time, hence targeting each cohort suitably. (Barnea, A. et al 2010).

The following characterizes the birth and formative years socio-economic changes for Generation X, Generation Y or Millennials and Generation Z in India: -

Generation X: Individuals of X cohort belong to the years range born between 1965 to 1980 (Pew Research Centre). Hamlett and Deverson (1964) connoted the term X- denoting the individual's desire to find their own identity. The generation from mid-sixties to early eighties 1965-1980 is considered by the academicians and researchers to be the cohort for Generation X. As birth cohort and formative years, this cohort of India faced rapid economic challenges with low economic growth rates of 3.5% prevalent and less per capita income. Economic hardships in the era made people thrifty and conscious of their spending. Computers were still in their early stages and modes of communication like mobiles were non-existent. Personal choices were also determined by the family and geographic location. The generation that was born and grew up in that era are known as Generation cohort X, and constitute a significant proportion of India’s population today. These individuals are in a phase of life where they are a formidable force in financial services and investment domains.

This generation grew up without major technology in their youth, but have been more adaptive about changes and have now switched to using accessible technology and are considered digital immigrants. (Calvo-Porral, C. and Pesqueira-Sanchez, R. 2020)

Generation Y:

The Generation Y or millennials immediately succeeds the Gen X with the age category from 1981 to 1996 (Pew Research). The generation is known as the millennial as they were the first generation who achieved maturity in new contemporary Millennia. (Bauman, A. A., & Shcherbina, N. V. 2018). The term Y represents the immediate successor of X. The period between 1981 to 1996 ushered in dramatic changes in India. The period in the eighties saw the economic base growth at 5.8%. Growth was modest but financial mismanagement caused the economic crisis that precipitated in 1991. Technology was also evolving consistently till 1996. (Hwang, J. and Griffiths, M. 2017)The period between 1981 to 1996 ushered in dramatic changes in India. Newspapers were the major mode of dispersion of requisite information as television was still a nationalized controlled medium. Internet evolved during this era, along with the advent of computing and mobile revolution. India was compelled to open up as an economy. What followed was a wave in economic liberalization. The markets were volatile - forces drove the market in a way that many lay investors were lured into the market. Generation Y was the first liberalized generation of India.

Over years regulations have comprehensively become more stringent, with ensuing government keeping a sharp eye on the financial markets. (Coombes, C. 2009) Technology was also changing significantly in time period. U se of computers, even personal computers and internet integrated the cohort. Millennials have adapted to technology as digital natives. (Bolton, R., Parasuraman, A., Hoefnagels, A., Migchels, N., Kabadayi, S., Grub, T., Komarova Loureiro, Y. and Solnet, D. 2013)

Demographic Dividend: Demographics of India has changed having the youngest population in terms of mean age of 29. Most major countries of the world are aging. The age group comprises 62.5% of India's total population and are in their prime working age group. . This age is called the age of demographic dividend. **(**Gudaganavar, N.V. & Gudaganavar, R. S. 2014) This is a thirty seven year period where the working basis: age population people will outnumber dependents – the aged people and young children. Period's expected then, to last till the year 2055. The maximum percentage of the working population of 65% is expected to be reached in 2036, over future decades there in India.

Generation Z

Period from 1997 to 2012 is considered Generation Z. The Generation Z are the age group which have been ushered in from 1997 to 2012 as a cohort. (Pew Research) They are the youngest age category who have entered adulthood currently for the present research. One of biggest changes that have occurred was rapid entry of technology into daily life of individuals. 1997 onwards born Zers heralded different times in India's change. Till this time period technology had not touched the lives of individuals for transactions and finance. (DeVaney, S. A. 2015)With the entry of internet; changes began gradually in individuals more so in the younger age brackets about preferences and changes in approaching life and decision making. Information about finance, companies and any other topic could be searched quickly and independently. There's fast movement of knowledge and news pertaining to financial and other matters. (Davis, A. 2006) This has resulted in a change of way information is perceived and gathered- with print and broadcast media, digital media, social media and peer influencers have created new channels of information channels.

Technological changes have also impacted various domains in finance- from asset allocation to financial services. In past couple decades, mobile phones have entered and changed the way people think and behave. With cheap internet connectivity, the reach's been in both rural with urban areas. The introduction of Aadhar ID has given an impetus to financial services, financial companies and individuals by bringing in easy transactions. Individuals are more open to newer financial products as they can read and clarify many of their issues online.

Digitization has rapidly changed albeit the landscape in investments in India. Enhancement in lifestyle and connectivity has hitherto improved finances and investments into different sectors. Earlier indecisive investors had no place to get information or sort doubts and issues they possessed. (Elder, R. S., & Krishna, A. 2012).

The investor needs and wants have also changed over the decades. Financial services companies have imbibed numerous technological aspects required hitherto reach their target audience. (Ayza, M. 2014)
Zers exist in a dynamic digital-tech environment, differing from erstwhile generations. Cohort is unified in behavior more than predecessors as globalization has minimized and shrunk information disparity based access. Finance has reflected this aspect off globalization. Hitherto socioeconomic variation found amongst cohorts in varied countries could be minimum in Zers.
Existence with technology seems protracted for generation members. Economic disparate variation in ambition towards gaining wealth has reduced for cohort with access of education, job, investments and hence pertinent requirements on electronic driven platforms. Investor centric product derivation with customization; driving finance in present pecuniary matters. Zers with global knowledge at fingertips must ideally seem better informed. With generation in threshold for entering mainstream jobs, earning with hitherto investment capability will increase. (Yadav, P. Gyan and Rai, J 2017) Generation Z are considered technoholics due to being an integrated digitized generation world over. (Zhitomirsky-Geffet, M. and Blau, M. 2017)

Research methodology
Study is based on primary data with data collected by stratified random sampling. The samples size cannot vary much for the population larger than a lakh. When population's very large, considered infinite then even according to Krejcie & Morgan (1970) and their sample calculation sample size is taken as 384 from Mumbai, India.

$$n = \frac{z^2 \text{ x } p\ (1-p)}{e^2}$$

Where z = 1.96
p = 0.5 and e = 0.05%

Hence, substituting the values-

$$n = \frac{(1.96)^2 \text{ x } 0.5\ (1-0.5)}{(0.05)^2}$$

$$= \frac{0.9604}{0.0025} = 384.16 = 384$$

The hypothesis been tested with one way ANOVA. The analysis of variance shows the variations across cohorts for generations. Questionnaire created was close ended. Questionnaire was framed with objectives in mind and self-administered online. Oneway Anova is used to assess if differences amongst groups are significant. The tests used to assess differences amongst generation cohorts. Post HOC test was done by using Tukey - Kramer test.

Objective
To understand inter-generational cohort behavior towards garnering financial information for Generation X, Millennials and Generation Z from information channels for investment decision making
Hypothesis:
Ho: There is no significant variation in cohort behavior towards garnering financial information for Generation X, Millennials and Generation Z from information channels for investment decision making

Data Analysis
The study focuses on channels of information for Source of financial information, reaction to information, factuality, and criteria for searching financial information and financial knowledge across generational cohorts. Using One way ANOVA statistically analyzing data the following inferences were drawn-
1. Source of information
Ho1: There is no significant variation of source financial information across generational cohorts.

4.1 Preferred source financial information

Sources variation	SS	df	MS	F value	At 0.05 F critical	Result
Between groups	1747.4	2	873.6	6.93	3.88	Reject Null
Within groups	1512.4	12	176.2			

Inference- The calculated F value is greater than the table value at 5% . Hence, reject Null's hypothesis. There is a significant variation in the source of information across generational cohorts.

2 Positive/ negative Information with generational cohorts

H02: There is no significant difference in reactions to financial and economic information across generational cohorts.

4.2 Positive negative of financial information

Sources variation	SS	df	MS	F value	At 0.05 F's critical	Result
Between groups	1747.2	2	873.6	3.967302	3.883	Reject Null
Within groups	2642.2	12	220.2			

Inference- The calculated F value is greater than the table value at 5% . Hence, reject the Null hypothesis. There is a significant relationship between positive /negative information across generational cohorts.

3. Factuality

H03: There is no significant variation of factuality in financial and economic information across generational cohorts.

4.3 Factuality of information

Sources variation	SS	df	MS	F value	At 0.05 F critical	Result
Between groups	1747.2	2	873.6	7.100	3.888	Reject Null
Within groups	1476.4	12	123			status

Inference-. The calculated F value is greater than table value at 5%. Hence, reject the Null hypothesis. There is a significant relationship of factuality (validity and reliability) of information across generational cohorts.

4. Financial knowledge and generational cohorts

Ho4: There is no significant difference of financial knowledge across generational cohorts.

4.4 Financial knowledge

Sources variation	SS	df	MS	F value	At 0.05 F's critical	Result
Between groups	1747.2	2	873.6	2.397	3.885	Accept Null
Within groups	4373.4	12	364.36			

Inference- The calculated F value is less than table value at 5% . Hence, accept Null considered. There is no significant difference of financial knowledge with generation cohorts.

5. Criteria for searching for financial information

H05: There is no significant difference of criteria for searching for financial information with generational cohorts.

4.5 Criteria of financial information

Sources variation	SS	df	MS	F value	At 0.05 F'si critical	Result
Between groups	1747.2	2	873.6	3.9842	3.88	Reject Null
Within groups	3060	12	255.03			

Inference- The calculated F value is greater than the table value at 5% . Hence, reject the Null hypothesis. There is significant variation in criteria for searching for financial information across generational cohorts.

Post HOC test

The post HOC tests were carried out for those inferences where the Null hypothesis was rejected across cohorts. and significance was determined. The Tukey Kramer Test was used to find variation in between cohorts.

Tukey- Kramer Post HOC Test for ANOVA

1	**Parameter**	**Gen pair**		**Diff**	**Msw**	**SE**	**Qcal**	**Q critical**
1	Criteria for searching for financial information	X	Y	12	221.86	6.66131	1.80153	3.77
		Y	Z	26.4		6.66132	3.96336	@df
		Z	X	14.4		6.66133	2.16183	3,12
2	Factuality of financial information	X	Y	12	121.03	4.92002	2.43901	3.77
		Y	Z	26.4		4.92001	5.38753	@df
		Z	X	14.4		4.92002	2.93877	3,12

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3	Preferred source of financial information	X	Y	12	126.03	5.02062	2.3901	3.77
		Y	Z	26.4		5.02063	5.2583	@df
		Z	X	14.4		5.02061	2.8681	3,12
4	Reaction to positive - negative financial information	X	Y	12	220.4	6.63627	1.808246	3.77
		Y	Z	26.4		6.63626	3.9795	@df
		Z	X	14.4		6.63625	2.1699	3,12

Results and discussion

Aspect	**Cohort Characteristics across**		
Generation	Generation X	Millennials	Generation Z
Birth Cohort & Formative years experiences	1965–80	1981-1996	1997-2012
Pivotal events	Regulated economy, later opening of economic structural reform in finance and economic sector.	Liberalization, privatization and globalization, Financial crisis and pandemic	Globalized exposure , open economy with technological integration , AI
Digital proficiency	Digital immigrants	Digital natives	Technoholics
Focus	Community, peers , self	Self and Peers ((Moore, E. S. 2006)	Self
Technology	Start of personal computing	Internet and smartphones and AI advent.	AI
Level of economic uncertainty faced	low	High	Very high
Preferred medium	Prefer Offline and online	Offline and online	Online

Saving tendencies	Tendency high	Lesser than predecessor cohorts	Open to spending more
Preferred interactions	Offline	Offline and online, with online gaining precedence	Online
Need for ownership	High	Lesser than predecessor cohorts	Less
Living expenses	Medium but challenging	Higher than predecessor cohorts	Higher with global economic and financial challenges
Debt proportion	Medium	Greater than predecessor cohorts	High with greater tendency to buy on credit

Based on the determinants considered for inter-generational study and the statistical analysis the following can be inferred:

Linkage of Cohort Characteristics with determinants considered for Inter-generational cohort behavior study:	
Source of financial & economic information	Various avenues of information co-exist today - print, digital. Broadcast, social media, peers-influencers. (Mendelson, A. K., & Thorson, E. 2004). However, each cohort's exposure has varied depending on the birth cohort and technology exposure. Gen Xers have newspapers as the most preferred choice of investment as Xers grew in an era where print media was the major source of information. The other media have evolved in their life. They are the cohort who are the most ardent readers of print. Media. Other media they follow but are influenced by print. Millennials have considered the internet and digital media to be their primary avenue of information. The millennials are known as the internet generation as the advent of technology has taken place in front of them. Zers are into internet digital media followed by social media and peer influencers. Each cohort has been influenced by the technology of their birth, formative years. Period and cohort effect impacts decision making.
Reactions to financial and economy related information	Each cohort is at a different life stage in terms of age, maturity, experiences and values. The reaction of cohorts to positive - negative financial & economic information is influenced and shaped by these experiences. (Xiong, G. & Bhardwaj, S. 2013). Generation X usually verify the information they come across and then change the investment. Many pertinent individuals verify the change but may decide to hold their investment. However most will verify the decisions. Millennials verify the information and make the decision to hold. Some however decide to hold the decision. Millennials have a wide range of information available to them. Zers change the investment depending on the information. The Zers

	are more fickle than their predecessors. Age effect seems to impact the decision making.
Factuality in financial and economic information	Factuality (validity and reliability) are vital components while assessing financial information. While many information channels are traditionally high on credibility and validity (print & broadcast), newer channels have lower credibility and validity. Propensity of each cohort to prefer certain sources over other further impacts this variation. (Schwarzkopf, D. 2006. Generation Xers relying on print and broadcast are concerned on factuality, credibility and validity. Millennials are not as diligent in checking their factuality in comparison to their predecessors. Zers only sometimes check for the information factuality and are the least diligent of cohorts, with numerous social media and peer influencers online. Period effect impacts across cohorts.
Financial knowledge across generational cohorts	Financial knowledge pertaining to investment behavior across cohorts did not show variation. Understanding and comprehension of financial investment are dependent on proficiency and awareness. Financial knowledge was yet to be achieved in significance across cohorts. X is the most experienced of the cohort. Many in Y generation are the most not satisfied with the level of information that they have for finance despite Most Zers are not satisfied with their level of financial information. And do not consider themselves proficient with their financial knowledge. Age effect, period effect should have impacted financial knowledge but the significance was not observed across cohorts.
Criteria for searching for financial information	Each cohort dependent on their birth cohort turnings showed variation in the preferred source of information. The impact of experience during formative years along with continuous changes both have impacted the variation in criteria for searching financial information. Xers emphasize on the past experience and then advertising which is online/ offline when searching for financial information. Xers have age and maturity on their side and this may be the reason that past experience features prominently. Millennials imply that the current news and trends impact criteria for searching before investing. The availability and ease of information also impacts the millennials. Gen Zers give priority to the ease of available information followed by current news and trends. Age, period and cohort effects are observed for this determinant.

Conclusion

Generation studies need to be carried on a continuous basis by researchers due to the kinesis and evolution in generations. Generation studies for the three cohorts pertaining to information channels has found variation in the information channels preferred by the birth cohorts with varying implication of Age effect , Period effect and Cohort effect on each determinant. The cohort characteristic linkage provides interesting insights in understanding the causes of this variation. Each generation's unique formative experiences and the challenges they have faced have subtly impacted decision making.

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