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# A STUDY ON SPENDING AND SAVING PATTERN OF YOUNG GENERATION USING BEHAVIOUR ANALYTICS

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## ABSTRACT

*In Business normally spending is defined as the money which users pay, usually in exchange for goods or services and savings is a portion of disposable income not spent on consumption of consumer goods but accumulated or invested directly in capital equipment. Also savings called the amount which users hold it for the future from excess of income over expenditure. This study provides insight on the spending, saving and investments patterns in reaching and matching the conception and investment need of Tiruchirappalli young generation and assist better understanding of saving, investments and risk profile of young generation so as to cultivate savings and investment culture as well as to increase financial literacy of the nation. These analytics is done by questionnaire method of data collection from various college students and in addition to that Google form is used for the same. The widely known analytical and statistical packages known as SPSS and MS Excel analysis tool pack are used to find out ratio, frequency, graphs for trend, testing of hypothesis, cross tabulation, and so on. Basically, this work is done by cohort analysis method which is splitting the respondents into smaller groups in demographically by gender, age, education, place of residence. This research covers the youth behaviour using the following spending variables like food, education, entertainment, transport, mobile, internet and saving alternatives and to identifying the saving patterns variables like bank saving, mutual funds and stock market are used.*

## KEYWORDS

behaviour analytics, business analytics, buying pattern, saving pattern.

## 1. INTRODUCTION

**Behavioural analytics** is a subset of business analytics that focuses on how and why users of retail, e-commerce platforms, online games, and web applications. While business analytics has a more broad focus on the who, what, where and when of business intelligence, behavioural analytics narrows that scope, allowing one to take seemingly unrelated data points in order to extrapolate, predict and determine errors and future trends.

### 1.1 REAL WORLD APPLICATIONS

Amazon.com is a leader in using behavioural analytics to recommend additional products that customers are likely to buy based on their previous purchasing patterns on the site. Behavioural analytics is also used by Target to suggest products to customers in their retail stores, while political campaigns use it to determine how potential voters should be approached. In addition to retail and political applications, behavioural analytics is also used by banks and manufacturing firms to prioritize leads generated by their websites. Behavioural analytics also allow developers to manage users in online-gaming and web applications.

### 1.2 TYPES OF BEHAVIOURAL ANALYTICS IN BUSINESS APPLICATION

**TABLE 1.0: TYPES OF BUSINESS APPLICATION USING BEHAVIOURAL ANALYTICS**

| Application | Action / Analysis |
|---|---|
| Ecommerce and retail | Product recommendations and predicting future sales trends |
| Online gaming | Predicting usage trends, load, and user preferences in future releases |
| Application development | Determining how users use an application to predict future usage and preferences |
| Cohort analysis | Breaking users down into similar groups to gain a more focused understanding of their behaviour |
| Security | Detecting compromised credentials and insider threats by locating anomalous behaviour. |

The table 1.0 explains the different types of business application using behavioural analysis here researchers explain only few applications and their real time usable analytical examples.

### 1.3 COHORT ANALYSIS

Cohort analysis is a subset of behavioural analytics that takes the data from a given e-commerce platform, web application, retail or online game and rather than looking at all users as one unit, it breaks them into related groups for analysis. These related groups, or cohorts, usually share common characteristics or experiences within a defined time-span. Cohort analysis allows a company to see patterns clearly across the life-cycle of a customer or user rather than slicing across all customers blindly without accounting for the natural cycle that a customer undergoes. By seeing these patterns of time, a company can adapt and tailor its service to those specific cohorts. While cohort analysis is sometimes associated with a cohort study, they are different and should not be viewed as one and the same. Cohort analysis has come to describe specifically the analysis of cohorts in regards to big data and business analytics, while a cohort study is a more general umbrella term that describes a type of study in which data is broken down into similar groups.

### 1.4 SPENDING AND SAVING

In Business normally spending is defined as the money which we pay usually in exchange for goods or services and Savings is a portion of disposable income not spent on consumption of consumer goods but accumulated or invested directly in capital equipment. Also savings called the amount which we hold it for the future from excess of income over expenditure.

### 1.5 FINANCIAL LITERACY

The possession of knowledge and understanding of financial matters. Financial literacy is mainly used in connection with personal finance matters. Financial literacy often entails the knowledge of properly making decisions pertaining to certain personal finance areas like real estate, insurance, investing, saving, tax planning and retirement. It also involves intimate knowledge of financial concepts like compound interest, financial planning, the mechanics of a credit card, advantageous savings methods, consumer rights, time value of money etc.,

## 2. REVIEW OF LITERATURE

Haastrup Adeleye Victor et. al. (2014). This article titled on customer behaviour analytics and data mining analytics. It discussed behaviour analytics that will have helped organizations to understand what the customer exactly wants and to offer the right products to right person at the right time through right channel. In this article the data mining concepts and importance of analytics are explained through the customer buying data. Data mining techniques like CHAID chi square automation interaction and CART classification and regression tress algorithms used.

Indre pikturniene and Sigitas Urbonaricius (2014) in the researcher's research on Spending and saving patterns of two consumer age groups during economic downturn and recovery of 2009–2011 in Lithuania. This study found savings will help the circumstances such as decreased in income and increase in prices. The article stated that even the loyal customers go for price consider and switch brands in the face of economic crisis. During the economic crisis the consumption or spending had become less or by selecting cheaper goods.

Derek Thompson (2013) in his business article on how teenagers spend money. It was explained Teen and adults are not worrying about a mortgages, insurance, savings or any of the important life stuff instead they are spending more than money on buying cloths and eating.

Sam Yet Huat et. al. (2010) in this study on financial behaviour amongst undergraduate students with and without financial education. This study found that there are over 271 billion outstanding bills of credit and payments. It's most by below the age group of 30 because of high consumption than income. Study said that most of the bankruptcy has because of youth. Unemployment after the education is the problem of underpayment of the credit card payments. This study said lowed education level has higher bank savings in young and vice versa, to middle level education but high level education people cautiously spends their money.

## 3. RESEARCH DESIGN

### 3.1 PROBLEM FORMULATION

Behavioural analytics is widely used in all sectors to attract the customer by providing the exact needs and likes. Young Generation has attracted the attention of various research groups in different disciplines. This group has become the target of research in similar form, mainly due to this group of the population comprises of a large demographic segment of consumers with high spending power. Although there is a growing literature associated with the consumption habits of Young consumers, in which most of the studies are focusing on the sales and marketing of products and services particularly in capturing the demand of this powerful consumer group, most of the studies are done in developed countries such as USA, Canada, Australia and EU and whether the same spending and saving behaviours can be applied in the Tiruchirappalli context, further study on this area need to be carried out to verify this statement. The reason is consumer purchasing behaviour might be influenced by some other factors such as gender, educational level, level of income of the individual and quality of environment the individual is living in and others. In Tiruchirappalli there is little investigation on young consumption and spending behaviours which directly affect their saving and investment decision. Besides that, research data that focus on Tiruchirappalli data is important as the economic condition, educational system and level of environmental consciousness among Tiruchirappalli is indeed different from those in other countries. Moreover, most of the study that has been done primarily focused on young Generation's decision-making styles, how businesses market and brand to this group, and how to manage generation Y in the work place. Therefore, the main purpose of this study is to get to know more about Tiruchirappalli young Generation and to fill the knowledge gap on their spending, saving and investment behaviours through behavioural analytics concepts.

### 3.2 RESEARCH OBJECTIVE

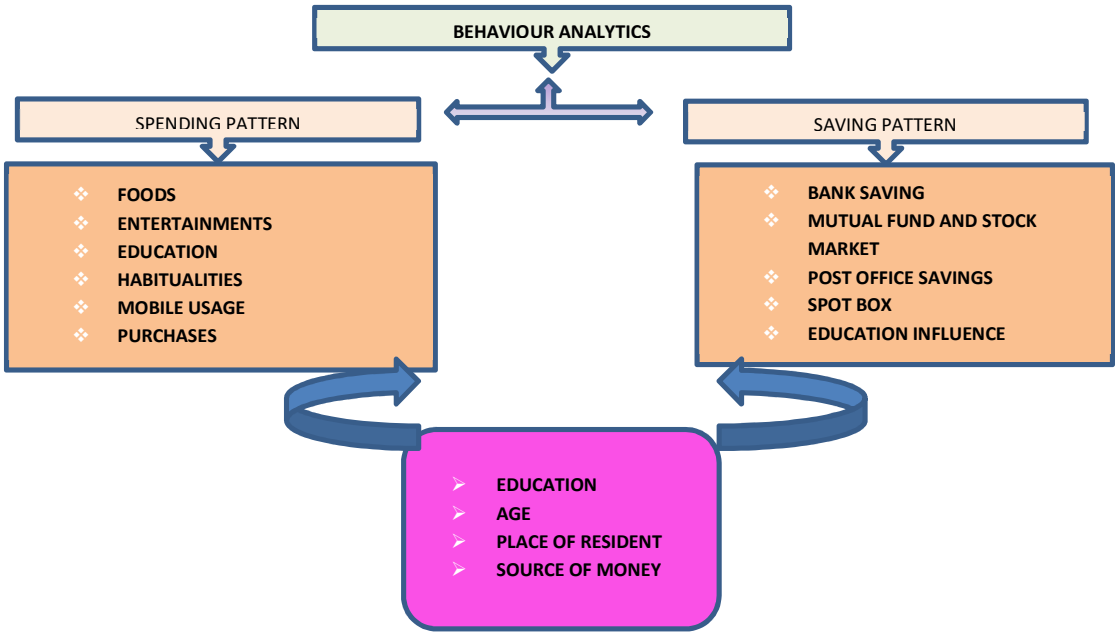
To predict the behaviour of the young students with respect to spending and saving habits.

### 3.3 SPECIFIC OBJECTIVES

1. To analyse the relationship among the financial literacy and their implication in the saving pattern.
2. To find the influencing factors for spending and saving behaviour of the respondents
3. To identify the variables and their relationship which are influencing spending and saving behaviour

### 3.4 CONCEPTUAL FRAME WORK OF THIS RESEARCH

**FIGURE 1.0**




**CONCEPTUAL FRAME WORK**

The Figure 1.0 explains the overall framework of this research. This framework shows how the behavioural analytics used to find the spending and saving behaviour of the young. It indicates the major variables and its relationship with demographical variables.

### 3.4. RESEARCH FRAMEWORK

There are different factors were identified by studying the existing models of youth's spending and saving pattern and to the behavioural analytics concept model is proposed to explore the possibility to successfully computation of this study objective.

### 3.5 HYPOTHESIS

($H_0$1): There is no significant relationship between education and spending on mobile

($H_0$2): There is no significant relationship in spending on movies between male and female gender

($H_0$3): There is no significant relationship between gender and their spending behaviour on restaurants

($H_o4$): There is no significant relationship between education and spending on transport
($H_o5$): There is no significant relationship between education and spending on alcoholic beverages
($H_o6$): There is a no significant relationship between financial literacy and savings habits

**3.6 SAMPLING**

The sampling size of this study is 100. The stratified random sampling technique is used to collect the data through questionnaire and the study period is January 2016 – June 2016.

**3.7. PILOT TEST**

A pilot test was conducted to ensure the validity and reliability of the questionnaire. In order to achieve the study objectives, the questionnaire was distributed randomly to the targeted population and a total of 25 respondent samples were obtained. Upon the completion of the pilot test errors found it the questionnaires were identified and rectified. The questionnaire was improved before the actual survey was carried out.

**3.8. METHOD OF DATA COLLECTION**

**3.8.1 PRIMARY DATA**

The data has been collected through questionnaire method. In addition, the study used online Google form method for collecting data from various colleges under graduate and post graduate students with equal distribution of boys and girls. The Likert five point scale has used to prepare the questionnaire. The questionnaire has two parts which used to identifying: 1. Spending pattern 2. Saving habits

**3.8.2 SECONDARY DATA**

Existing data forums, research articles, books, news article were used as a secondary data to lead the project through review of literature.

**3.8.3 TOOLS USED IN PROJECT**

The SPSS V22.0, MS-EXCEL Analytical took pack are used in this research for data analysis and findings. The tests which has been used for the analysis are Cross Tabulation analysis, correspondence Analysis and Tables, ANOVA, T- Test

## 4.0 INTERPRETATION

**TABLE 2.0: CREDIT / DEBIT CARD USAGE FOR PURCHASE**

| Gender | Every time | Sometime | Never | Total |
|---|---|---|---|---|
| Male | 8(8%) | 32(32%) | 10(10%) | 50(50%) |
| Female | 1(1%) | 24(24%) | 25(25%) | 50(50%) |
| Total | 9(9%) | 56(56%) | 35(35%) | 100(100%) |

In table 1.0 the data analysed to find the spending pattern behaviour in credit or debit card usage for purchases in online, retail and shopping malls, In this 9 percent of the respondents uses the card for purchase every time (8 percent of male and 1 percent of female). And 56 percent of the respondents have said they use card for some time (32 percent of male and 24 percent of female) and 35 percent of respondents never use the card for the purchase. This analysis help to the researcher to predict female youth are still have the fear of using cards, rather male youth uses cards frequently for the purchases. Since the digitalisation of the bank and increased in security of the bank accounts the number of card usage drastically increasing.

**FIGURE 2.0: MALE AND FEMALE SPENDING PATTERN FOR 10 ITEMS**

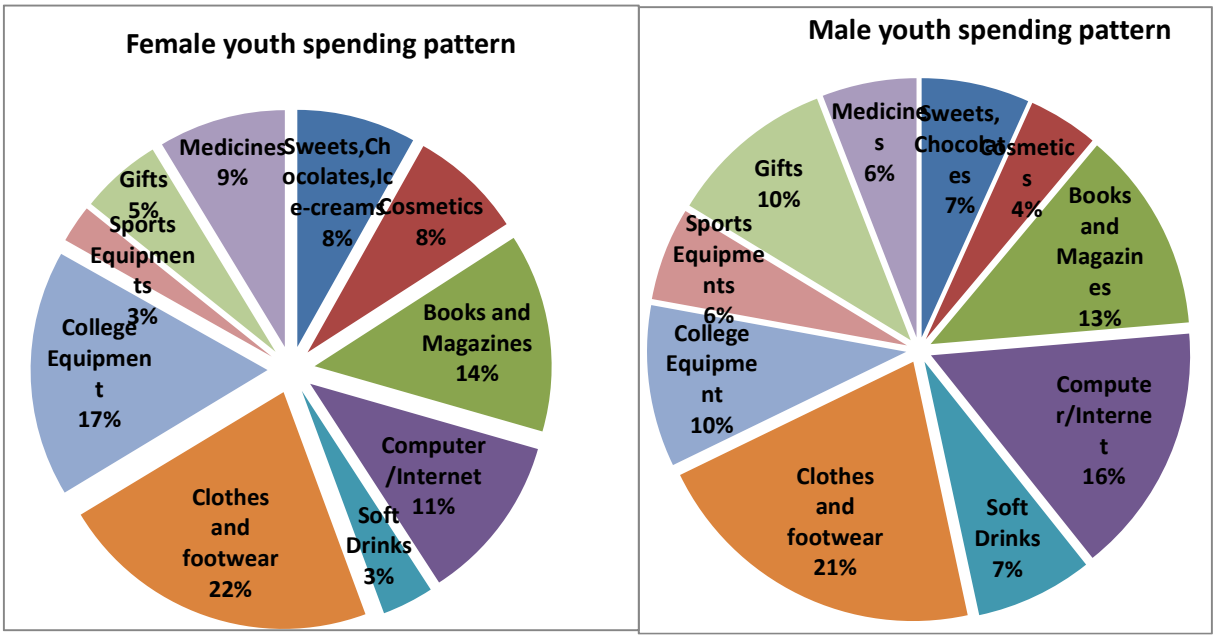



Figure 2.0 says when data is analysed of daily usage product spending pattern, the first preferences given to clothes and footwear by female 22 percent and male 21 percent, by this the life styles in dressing become same for male and female. The second preference is given by female for the college equipment which is of 17 percent but for men its computer and internet, which is 16 percent. This explains comparing male female is more cautious in studies and male youth are using more internets. The third preferences given by female and male for books and magazines.

Female are more chocolate lovers whereas male youth consumes soft drinks. In case of cosmetics female usage is more than male, the same inverse in sports equipment. Medicines are taken by female 9 percent and male 6 percent.

**TABLE 3.0: AWARENESS OF STOCK MARKET OR MUTUAL FUND CLASSIFIED BY GENDER**

| Gender | Very well | Some extent | No | Total |
|---|---|---|---|---|
| Male | 8 | 26 | 16 | 50 |
| Female | 5 | 36 | 9 | 50 |
| Total | 13 | 62 | 25 | 100 |

In the table 3.0 the stock market or mutual fund awareness among the youth were analysed for the purpose of their future investment behaviour in future. Since 65 percent of respondents studying finance related subjects, 13 percent of the respondents said know very well and 62 percent of the respondent said knows

some extent and 25 percent of the respondent said no for stock market or mutual fund awareness. This report shows that the finance studying students also not knowing that much about investment of stock market, so their participation in stock market or mutual fund participation in the future will be less.

**TABLE 4.0: INVESTMENT IN STOCK MARKET OR MUTUAL FUND**

| Gender | invested in stock market or mutual fund | | Total |
|---|---|---|---|
| | Yes | No | |
| Male | 7 | 43 | 50 |
| Female | 6 | 44 | 50 |
| Total | 13 | 87 | 100 |

In the table 3.0 the data analysis explains for stock market or mutual participation of the students. It is found that 13 percent (7 percent of male and 6 percent of female) have participated in the Indian stock market. Then 87 percent of the respondents have said they didn't invest in the stock market or mutual fund which includes 43 percent of male and 44 percent of female. This shows the female youth also taking part in the stock market as slightly equals to the male. This will help to the researcher to predict in future the female will do invest as equal to the male.

**TABLE 5.0: AWARENESS OF POST OFFICE SAVINGS**

| Gender | Very well | Some extent | No | Total |
|---|---|---|---|---|
| Male | 13 | 27 | 10 | 50 |
| Female | 15 | 31 | 4 | 50 |
| Total | 28 | 58 | 14 | 100 |

In table 5.0 post office is the place where most of the small saving has been done. From this analysis to know about whether the current youth aware of post office savings, 28 percent of the respondents (15 percent of female and 13 percent of male) said know very well and 58 percent (27 percent of male and 31 percent of female) of the respondents said some extent aware and only 14 percent (10 percent of male and 4 percent of female) said not aware. So as expected this kind of savings known to many. Since government approved post office to function as bank this will help them to attract the youth easily.

**HYPOTHESIS TESTING**

Null Hypothesis ($H_o6$): There is a no significant relationship between financial literacy and savings habits of the respondents

**TABLE 6.0: ANOVA TEST FOR HYPOTHESIS TESTING BETWEEN FINANCIAL LITERACY AND SAVINGS HABITS**

| | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 1.768 | 1 | 1.768 | 8.259 | .005 |
| Within Groups | 20.982 | 98 | .214 | | |
| Total | 22.750 | 99 | | | |

From the hypothesis testing table 6.0, the F value is 8.259 and the significance is .005 which is equal to .005 the normal significance. So the null hypothesis is rejected. There is a significant relationship between financial literacy and saving habits.

## 5.0 MAJOR FINDINGS

Credit and debit card usage for purchases is increased among youth. Especially female usage is increasing day by day. This usage of credit or debit card makes the youth to participate in banking financial transactions. Spending pattern of the female and male are completely different. Female spend more on clothes and foot wears and material for college students. The male spends same more on clothes and footwear but the next high spending is for computer and internet. For medicines and cosmetics females spending more than males. For gifts, sports items and soft drinks male spend more than female. For Sweets, chocolates, ice-cream spending is almost same among male and female. Female youths spend more on online purchases than male. No differences for using online for purchasing with respect to under graduate and post graduate youth. Most of the youth prefers to use Flipkart and Amazon for online portal. Spending on movies and transport is almost equal among female and male youth with irrespective of under graduates and post graduates. Spending on tobacco is high among post graduate youths. Spending on alcohol differs from under graduates to post graduate under graduates consumption is high in weekly whereas post graduate consumes monthly and occasionally. The youth product selection is same across gender. Both female and male youth give first preference for quality, second to brand, third to price and last to place.

The maximum youth of Tiruchirappalli are attracted and hold their accounts in public sector banks. Only the family members are highly influencing them to save money only 28 percent of the youth have insurance policies. In which female is more than male. The awareness of stock market is not very well among the youths. Only some extent they know about stock market and mutual fund investments. There is a significant relationship between financial literacy and saving pattern of the youths.

## 6.0 SUGGESTIONS

Banking sectors must encourage the youths to use debit and credit cards for purchases. It helps them to analyse their spending through this the youth can participate in the country's financial activities. The financial institutions must arrange special training programs to explain the importance of saving and develop the saving habits among the young generation. The Banks can offer special gifts like offering movie tickets, tour packs, festival gifts and cash offer for online products when youth savings are reached certain limit. All Business organizations should use this kind of behavioural analytics to find out customer information, customer buying and saving behaviour which can improve the performance of business.

## 7.0 CONCLUSION

The behavioural analytics is one of the biggest things that have taken the business to reach the customer what exactly they need. The results analysis from this research project shall be of great interests to financial institutions, stock broking company and policy makers, product manufacturing company in providing appropriate products and services in line with their consumption, spending, and investment behaviours. From this research study the researcher came to know the importance of the behaviour analytics and the importance of the youth spending and saving pattern.

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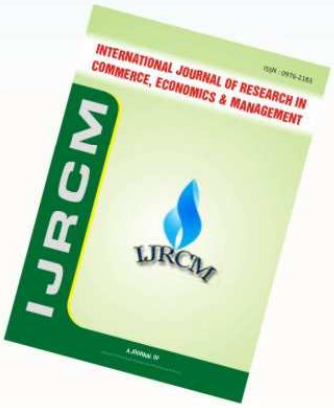
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