

Optimization

Journal of Research in Management

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- Behavioral Biases and their Importance in Shaping Overall Investment Behavior of Indian Engineers
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- Technology Adoption Among the Students Using Technology Acceptance Model: An Empirical Study on Tripura University
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- Role of Technology in Development of Alternative Finance in India: A Discussion
Niyati Dave



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From the Desk of the Chief Editor.....

The business world has changed dramatically in the last couple of years and today, every organization and business is feeling the impact of globalization, migration, technological and knowledge revolutions, and climate change issues. The biggest challenge that most of the organizations are facing is to implement and adopt change programs. Optimization and innovation are the two words detrimental to future success and are the only ways to achieve present success in competition with others who are equally interested in quick results. In such a hypercompetitive business environment which is full of challenges; researchers should proactively embrace paradigm shift. Our bi-annual peer reviewed **‘Optimization’: Journal of Research and Management, Volume 9, Number 1, January-June 2017** issue provides a glimpse of such innovative researches in a selective and illustrative manner. It is an attempt to link its research findings to the business frontier of tomorrow to help create new opportunities. The present issue brings to its’ readers a blend of attributes and perspectives that shed light upon the challenges of the competitive market and combat strategies in turbulent times.

The current issue encompasses a good sprinkling of innovating themes related to emerging markets such as Collaborative Economics Business Model, Investment Behavior, Technology Adoption Model, Financial Decision Making, Financial Literacy and Alternative Finance. These papers will help promote research and development and to find ways and means to move ahead on the growth trajectory.

The first research paper **“Current Collaborative Economies Business Model Airbnb: Changing the Hospitality Industry”** has been authored by **Jose G. Vargas-Hernandez and Diana Soltero Mariscal**. This paper examines one of the most recent and successful technology-based startups: AIRBNB- Air Bed and Breakfast model used in hospitality industry. The next paper **“Behavioral Biases and their Importance in Shaping Overall Investment Behavior of Indian Engineers”** authored by **Priya Kansal and Seema Singh**, investigates the three broad dimensions- overconfidence, optimism and loss aversion of investment behavior of engineers and their impact on the investment behavior in context of Indian Stock Market. The third article **“Technology Adoption Among the Students Using Technology Acceptance Model: An Empirical Study on Tripura University”** written by **Debarshi Mukherjee and Anjana Kalai** attempts to evaluate the perception of the business management students of Tripura University in accepting the digital learning methods through Technology Acceptance Model (TAM). The next research paper entitled **“Behavioural Biases in Investment Decision Making”** by **Manika Sharma** discusses the concept of Behavioural Finance and highlights the psychological and emotional factors that influence financial decision making of the investors. The fifth article authored by **Ian Madalitso Saini**, entitled **“Community Colleges in Malawi Initiative: Transforming Malawi into a Hub of Innovation in Technology Towards Achieving Global Competiveness”** discusses the initiatives taken by Malawi Government by launching community colleges and formulating policies for transforming Malawi into a Hub of Innovation. The next paper **“Financial Literacy Skills: The Catalyst for Entrepreneurial Sustenance”** has been authored by **Aparna Saraf**. This paper attempts to briefly review the importance of financial literacy and tries to identify its role in entrepreneurial development. The last article

entitled **“Role of Technology in Development of Alternative Finance in India”** written by **Niyati Dave** is a **discussion paper** that reviews and revisits the alternative sources of funds growing in India along with some already established sources in developed financial economies and its feasibility in India.

We thank contributors, reviewers, advisory committee members and readers for their commendable and sincere efforts in incorporating qualitative research work and making it an enriched Journal. We look forward to receive contributions for our next issue from academicians, scholars and practitioners to ensure the consistency and the success of the Journal. We also welcome your comments and suggestions to make this endeavor very meaningful.



Dr. Urvashi Makkar

Chief Editor and Director General
GLBIMR, Greater Noida



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Current Collaborative Economies Business Model Airbnb: Changing the Hospitality Industry

Jose G. Vargas-Hernandez*
Diana Soltero Mariscal**

Abstract

This paper focuses on the study of one of the most recent and successful technology-based startups, whose nature is the hospitality industry. Airbnb is part of the model peer to peer of the collaborative economy, which means it is participating in a Community market based on trust the host-guest experience for traveling richer than it would simply stay in a hotel. For the development of this work the research methods will be descriptive and analytical due to the interest of not only explain the origin and strategies that practices the company but also doing an analysis of the tendency of users, both the hosts and guests about their perception of the services offered and whether it will become the preferred way to rent a space. The trends show that the explosive growth since its inception continues to be a trend, as long as the regulations imposed by different governments are met and that trust between users stays strong.

Keywords: Airbnb, disruptive innovation, hospitality industry, hosting entrepreneur, sharing economy. JEL: M13, O31, Z31.

Introduction

Eight years have passed since two recent graduates of Rhode Island School of Design and an engineer in computer science from Harvard, founded what is today one of the most successful community markets in the world. The business it belongs is not particularly new. However, innovation makes the difference and it is sustained that today is valued above one billion dollars, an amount that puts it in third place in the list of the unicorn companies with 25.5 billion of dollars in Fortune magazine.

Airbnb stems from the philosophy of think of innovative solutions for common problems (Chafkin, 2016) and one of them, a pillar of its *raison d'être*, is accommodation where innovation is to combine this service with confidence based on communitarian economy and which together with the technological bases created this platform that has generated that users obtain large incomes and guests live unique experiences for inclusion in the cultures of the places they visit coupled with competitive prices if it is that lower than it is offering the hotel industry.

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This business model is here studied particularly in Mexico and Latin America, to analyze since its inception in 2008 to the present. As data and analysis that are possible to acquire and confirm the tendency of this application, or one of more innovative ways to change. How it has developed customer service on housing issues and as it says the promoter Brian Chesky one of its co-founders, Airbnb is more than just renting an accommodation space (Chafkin, 2016).

On the other hand, the impact it has or may come to have Airbnb and similar platforms is an attention focus for the traditional hotel industry, since it is clear that this trend towards higher position, where users become entrepreneurs in the hospitality only with their resources and creativity. In exercising their resources and who cares about the continuous improvement of the legal loopholes and insecurity that has been manifesting through experience, it is to take into account and provide great economic losses in the future.

Background of the Problem

Origin

It is true that the best ideas come to solve problems accidentally break into everyday life and the birth of Airbnb was no exception. In October of 2007 in the city of San Francisco, California rent skyrocketed beyond measure by 25%, because in the environment reigned on the eve of the economic recession that hit globally in 2008, and among other things, it mention that San Francisco is one of the most expensive cities to live and visit in the United States.

Designers Brian Chesky and Joe Gebbia shared an apartment with the aforementioned events and thought about how to earn extra income to cover the new rent fee. Fortunately the idea did not wait and took advantage that there would be a conference for designers therefore decided to create a platform for attendees to have an alternative cheaper than hotel accommodation. The idea was simple, inflatable mattresses and a roof for the night.

The project started with the name Airbedandbreakfast.com, a website that connected to the hosts and guests; that beginning was something small and not widespread. They hosted three slightly skeptical guests about the service obtaining significant but encouraging gains. They had created what today is an innovative company that not only expanded in San Francisco or the United States, it is present around the world in 191 countries and counting.

The First Years

The design duo was joined by Nathan Blecharczyk, who supported the development of the web platform where they would advertise. However, the lack of capital to expand the business, approached them to the incubator or business accelerator Y-Combinator, providing \$ 20,000 and then to see the success of the company Airbnb Sequoia Capital, owned by Merlo Park, invested 600,000 more (Mendoza, 2014). In the year 2008 they had already achieved moderate success in its model of shared hosting. The Democratic National Convention was held and the project became stronger, the website being re-named in the 2009 as airbnb.com, expanding not only to rent shared rooms, but also, residences or whole departments.

Growth and Expansion

Airbnb's popularity grew and the number of hosts in 2009 increased from 21.000 to 160.000. It is clear that the rise of social networks helped to publicize the company and the positive feedback from guests to reach common places where they could meet and learn from everyday life in their tourist or business trips.

Another aspect that supported the growth and expansion of Airbnb was the change in consumer buying behavior, since that time, Internet users conducted large percentage of their purchases online and it is a trend that continues today. In 2011 and 2012 the records continued to increase exponentially (these data

are later addressed), and were years of great learning by the founders, then, with the growth and success they were getting was imperative to study the best strategies and forms of business for this to take its course.

To Date

Today Airbnb has more than two million sites to rent registered, among them 4,000 are boats, 2,000 are castles, 620 tree houses and 320 private islands (Chafkin, 2016). It has provided hosting service to over 60 million guests. It is present in 191 countries and over 34,000 cities. Within its support services to communities and through the idea of one of their host provides free accommodation in hit areas by natural disasters, in addition to providing insurance damage spaces by bad users, areas has made improvements legal to continue to operate and continue to enter new countries and cities.

Problem Delimitation

Once commented on the benefits of this business model, it is pretended to analyze the problems which faced the company, as strong and competitive as the hotel industry, where perhaps initially did not see coming this phenomenon. It is clear that would have to take action on the matter. And also, it cannot be left behind misuses issues that have faced the hosts and resolve Airbnb to keep its base, which is the user confidence in the aforementioned community economy or sharing economy, regulations of the law on tax payments to the host as it is an informal economy.

In this research it is pretended to study, analyze and explain how a firm is proposed as Airbnb strategies to follow and obtain a competitive and sustainable advantage in the hotel industry, laws and above all, keep having and increased confidence users around the world?

Justification

To explain the problem posed by this research, first is described the main objectives that Airbnb

has as the business: Offers travelers' accommodation, with or without interaction with the host. It can be rented almost all types of properties and depending on the law of the place, can exist or not, a time limit for lodging. The ambiguity with which these services are covered, is due to changes in the laws of the municipalities, for being a fairly new model in the industry, as have arisen problems relating to the payment of taxes, as well as disputes with the hotel sector and breach of trust cases of guests at the properties, vary the rules with which the company develops.

So then, one of the issues to study and analyze is the strategies that has worked and developed Airbnb to continue to exist primarily as a business entity globally, with an emphasis on Mexico, and secondly to continue to obtain the trust of users, since this business model called relationships peer to peer, a trend that is based on a growing international movement changing social, economic and technological form consumer behavior which aims to share goods instead of owning them (Walsh, 2011) are developed.

Unfortunately sometimes can be inconvenient (property damage, poor services, improper or illegal use, etc.) and what has been a competitive advantage for the company as recommendations online before buying the service, which should be negative could be harmful to the company. In this sense, there are alternative platforms or forums, where users discuss and compare their experiences not only with their hosts, but also with the services Airbnb offers.

Objectives

This work aims to analyze the impact that has had this business model of disruptive economics. Also to know what strategies are being implemented for the competitive advantages and if these are held to the various problems the company has had, first from a global point of view and to approach the study later in Mexico. To analyze by the results of indicators of on-line customer satisfaction and

consumer preferences regarding their travel experiences in the main tourist attractions.

Theoretical and Empirical Review

Bostman & Rogers (2010) (2010) argue that Airbnb is part of a classic model of collaborative economy, being a disruptive innovation (Christensen & Raynor, 2003) that occurs when individuals share common interests and a common philosophy of life. In this case, they aim to rent rooms in shared apartments or whole departments through a social search and management system (Bostman & Rogers, 2010). So the emergence of this phenomenon is possible as the evolution of technology allows imitate the exchanges that usually or used to give face to face, on a larger scale thanks to the internet, together with the ability to create trust between strangers.

Rifkin (2014) points out that the decline in marginal costs, which tends to be near zero, is resulting in a dichotomous economy, partly capitalist market and on the other hand, collaborative commons gradually drawn out a new economic paradigm. Interian, (2016) argues that the sharing economy is credited with reducing transaction costs, increase efficiency and promote accountability and competence. This model does not require a centralized entity that should have an inventory and therefore is free of logistics, costs associated with maintaining inventory, product and geographic expansion for these purposes.

This model by allowing individuals to take advantage of the ability to take advantage of an asset that already possess, collaborative business model eliminates in an efficient and convenient way transaction costs. The specific characteristics of collaborative consumer of tourist accommodation are little known, although generally, it may try to travelers connected and experts, likely to responsible consumption, characterized by a high level of trust in the other members of the community and familiarity with internet and online commerce, demanding about the quality of its tourism experiences, accustomed to link their

destinations of choice and forms of entertainment in a family environment (Russo & Quaglieri, 2014).

Despite its purported benefits, companies of collaborative economies have been strongly criticized for the way they operate, and in some cases have been forced to shut down operations. Critics argue that the laws are evading created precisely to regulate certain practices in which their companies are engaged; users sharing platforms become “prosumers” people who consume, like produce (Streitfeld, 2014)

Blurring the line between consumer and producer collaborative economy breaks with the traditional business model that companies own and people consume. On the other hand, the concept of sharing erodes the disinterested public regulation, substituting private regulation or leaving unattended regulated transactions. Because of this, business creation becomes more widespread and may even lead to displace their regulated and established counterparts some time ago. An example of this is Uber, which has become a ubiquitous service in major cities around the world (Interian, 2016). The most important cities in the United States and Europe have begun to implement regulations regarding share house or rent space and have initiated investigations with the goal of bringing the collaborative economy in accordance with existing laws (Chafkin, 2016).

On the other hand, information technologies have facilitated the exchange of user experiences, enabling the comments and product valuation objective and transparent manner. These valuations are perceived in the market as certain and are changing consumer behavior and redefining the role of influence during the buying process by providing more realistic expectations (Canigual, 2015). That is when the consumer can know the costs and perceived by others who have commented and valued their consumer experiences, which later will help to make a decision with some confidence, even if the consumer never had before contracted this service, reducing significantly benefits the perceived risk (Wen, 2009).

Hypothesis

Starting from this context, it is an investigation object, analyzing the business, legal, and growth and expansion strategies of Airbnb to determine whether still the explosive range has in recent years and how much impact will have the hotel industry and the behavior of consumer globally and in Mexico.

Contextual Framework

How Does Operate Airbnb?

In the first instance, it is created a free account on the site www.airbnb.com under a personal profile that helps hosts and guests to learn more about the other person. Such profiles when public do not show the full name or the complete contact information because the data are protected. The hosts describe in detail their spaces, including available services and times of departure and arrival, meanwhile guests publish evaluations of their experiences.

The company has groups of hosts and community meetings through online forums and meetings in person. Airbnb groups offer an internet hosts to share stories, views and advice. Services are verified at all times, both profiles hosts and guests; regarding the management of payments, Airbnb charges a 12% to 15% of the total cost of the rate of the host. It supports different currencies and payment methods, the company charges the full amount guests when making the reservation and wait 24 hours after their arrival at accommodation to transfer funds to the host.

Be guest or host, Airbnb offers customer service 24 hours in a help center. Also, there are cancellations or refunds without penalty, as could be: Death of a family member, serious illness host or a family member, disaster natural in the country, political turmoil in the country, property damage, maintenance problems that prevent the host accommodates any guest. Damages to the property are a warranty of up to 800,000 Euros. However, there are clauses and policies for different situations (Airbnb, 2016).

Based on the above context, there are companies with collaborative economies defined as the interaction between two or more individuals, through digital media or not, that meets a real potential need or to one or more persons (Bostman & Rogers, 2010). Digital platforms provide a framework where users can interact within and between them. Also it selects the role users want at any time and may even have several roles simultaneously. It is an open and dynamic system.

There is usually a method of valuation between users, whereby a reputation is obtained, and with it the confidence to continue to carry out the activity they want. The greater the number of users on platforms will have the more value. Users will have more choice options that will be better evaluated and therefore greater differentiation among them will be exercised.

Strategies Airbnb

Airbnb founders created a competitive value proposal avoiding a competitive market where they would be at a disadvantage, created strong points regarding competition where the service addressed niche markets; individuals with common interests and a similar profile, netizens, millennials, people interested in living different experiences at lower or competitive pricing and inclusion in local life of the areas visited coupled to an era where change because technologies began to change consumer behavior and continues generating it. According to (Peng, 2010) intangible resources and capabilities are human, innovation and reputation, options that Airbnb took advantage very well.

Within the point of view based on resources to develop an activity with added value, the organization opted for the aspects of the framework VRIO because it adds value to the experience of traveling beyond what hospitality offers. For example, a feeling familiarity, advice received by the host in relation to local life environment, the ability to engage in everyday life, access to utilities of residential use, the amenities offered by each host.

Oddity since it is a relatively new model to perform a common activity, so it generates intrigue and due to the popularity of using this platform, users want to be part of this economic, social and cultural change. It is true that Airbnb has competitors offering similar services, not to mention the traditional hospitality industry. However, it is a leader in the field, so it will make a difference is to keep growing community users to rate positively services and follow opening the world market.

Organization is key since the platform should be increasingly confident and fill the gray areas that may remain in the legal aspect, data control, trust between hosts and users, payments, monitoring and troubleshooting, and not diminishing his reputation among users.

The validation of the business model from the beginning is very important because, despite being a thin line between the informal and formal economy, the first actions of the firm can lead to success or failure of it, having rates established and very clear that is what is offered, not less, because credibility is lost, and if on the other hand, the customer gets more for what he paid and does not involve a significant increase in transaction costs, almost guarantees success of the model.

Another strategic advantage has been part of the costs, since firstly the fixed costs of the host are covered a priori, labor costs are minimal or nonexistent and paying taxes for working in some cities this is no longer so, however, at the beginning that prevailed, transaction costs also tend to zero, since, trading is done on a free platform.

The theory of transaction costs states that the choice of full or partial participation of multinational or joint ventures depends on the conditions and benefits that are shared between them. Alliances of capital between two companies are made to combine products or services. This alliance or organization between two or more companies is efficient when two conditions are known: when the products or services of each of the parties that are playing

in the market is failing or when the acquisition of the assets that produce such goods are more expensive than obtaining use rights through joint business agreement (Hennart, 1988).

Growth and expansion should be at the right time. At the moment the business because of the resources that counted was unable to grow, took up the matter and reinvested profits, obtained credits and support from incubators startups and visionary investors, to improve its platform and enter more cities and countries, moved its headquarters to a more efficient structure, with appropriate spaces for their activities and employed various specialists in business and strategic management. In addition to expanding its target market to focus its strategy to hotels that ran out of rooms available, especially in cities with high tourist demand as San Francisco or New York, reached the most important parts of the world in a short period of time (Teece, Pisano, & Shuen, 1997).

Change when needed. The company in its first years realized that it must modify some of its bases, so that it was scalable and repeatable, so open the door to other people using the same rental system that the founders initially in return a small commission. In addition, it was studied and analyzed the actual service users, concluding that they were people with very specific characteristics. So they diagnosed that while there was growth, this was slow to expectations, reaching the conclusion that the market was much smaller than they had imagined.

Therefore, the founders exploit a political event that could exhaust the hotel rooms in the city: the national convention of the Democratic Party, to launch a marketing campaign. They bought hundreds of packages of cereal, and personalized packaging with the representative of the political party (Obama and McCain) background offered cheap service for those attending the convention but did not have housing accommodation. They managed to sell 500 boxes of cereal at a cost of \$ 40 each. With that amount they got their first injection of self-funding of \$ 20,000. Therein lies the importance of the more creative and targeted

marketing entrepreneur, the more impact (audience, exposure and income).

Investigation and development. In the context of expansion, the (main) founders came with specialists in specific Y-Combinator, venture capital company, to be mentored and trained to develop and organize in a better way the organization, financially and technologically, as well as issues of marketing, makeovers, change of image and style, within them, shortening the name went from airbed and breakfast to Airbnb simply.

Human capital and strategic alliances. After reviewing the business model and strategy based on the orientation of Y-Combinator, enter new investors, the team grows, starting from the 3 founders to 15 members, all with high expertise in software development, management strategic, data mining, and marketing, among others. Focus on the goal that users use the service again, and more often, that is, engage with customers, proving themselves the service and see firsthand, the weaknesses to solve them.

Rating growth limitations, hypothesis and testing. When growth was once again limited, they decided to hypothesize why if technological issues such as access to the platform, payment systems and the formation of a positive reputation, there was something that was generating conflict with the expected growth.

They found that the more professional photographs of the property, the greater the chance of being hired, so they tested this hypothesis in a new city that wanted to enter, New York, where they hired professional photographers for advertising spaces and realized that to show better and professional, property would be leased faster than with precarious photographs.

Solution to legal conflicts. As the company was growing and gaining popularity, the problems began with the hotel industry, cities like San Francisco, New York, Berlin, Toronto, began fining users for violating housing laws, such as the time spent for rent apartment, paying taxes per rental, etc. The strategy of governments pressured by the big chains, was the attack to users, since being so little studied these companies did not exist to the same regulations. However, Airbnb, has taken part of this problem, which in conjunction with the government, have reached agreements to continue operating.

Added value of the firm. One of the competitive advantages that Airbnb holds over its competitors, is to provide a different, unique and intrinsic experience with the community, the use of the services offered by the hosts, not forgetting the amenities that each host can add, there are no limits, since creativity of the services lie in the mind of each one.

B. General Data

Growth of Airbnb 2009-2015 (Huespedes)

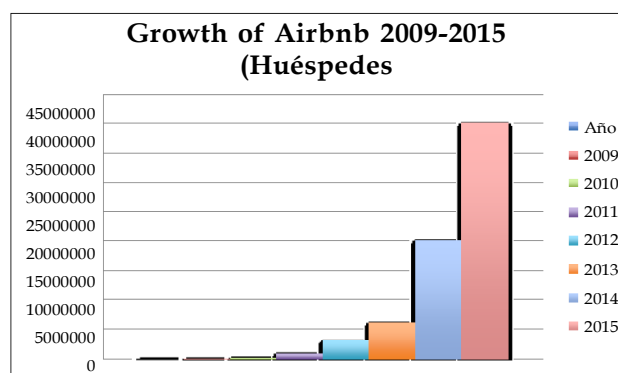


Figure 1: Growth of Airbnb relative to spaces rented 2009-2015.

Source: Prepared with data of Chafkin (2016).

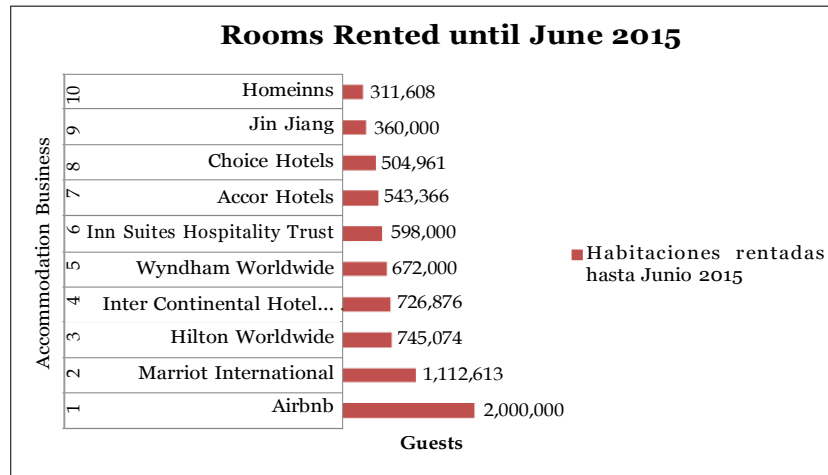


Figure 2: Comparison of Airbnb for Major Chain Hotel Industry Until June 2015
Source: Prepared with data of Chafkin (2016).

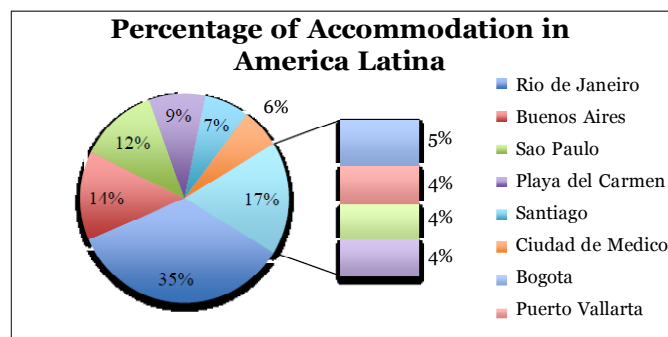


Figure 3: Total Airbnb Accommodation in Latin America
Source: Prepared with data from Airbnb (2016)

In Latin America the impact of Airbnb until the end of 2015 is approximately 60,000 accommodations.

In Mexico and Latin America, growth of Airbnb has been explosive, since its inception in 2013 had an increase of 400 percent (Mendoza, 2014), a figure that continues to grow year after year. One of the goals of the company is opening more cities, including dedicated to alternative tourism, as called magical towns, colonial cities, business and convention centers and surrounding cities with the country's borders, spaces near large shopping centers.

Another objective of inclusion target market is more Asian cities, which are key to their expectations of inclusion, expansion and growth.

Within the legal framework, cities like New York, San Francisco, Berlin, among others, have already implemented laws, taxes and relevant negotiations for the company to move away from the gray area in which it is informal business, are being studied by the various governments to take them as a model and perform the same.

Thus it appears that the company must carry out internationalization processes to exploit opportunities that have not previously been (Peng, 2010), have efficient distribution channels (web platform), however, innovate and create products, in this case, the travel experience, is sustained competitive advantage of the company (Vargas-Hernandez, 2014).

Methods

The methods used in this research are analytical and descriptive, because the main objective is to give a theoretical framework on the origins of the company, processes, market opening, and growth, and impact, expansion, in addition to the strategies it has used in different countries due to legal and cultural differences.

Analysis of Results

With regard to the reviewed literature and research presented in this paper, it can be said that even in a competitive market, it can be found a gap, a need or a service to offer. The key lies in identifying a niche market which offer within the same segment, an innovation that generates consumer trends, the use of a technology accessible to millions, yet safe and effective to achieve something primordial in companies of collaborative economies and consumer confidence. As a result, these companies called disruptive innovation, since it breaks with the established paradigms.

It is necessary for the main, that once the business is established and has the market acceptance, it focuses on how to devise and implement appropriate strategies and at the right time of growth and expansion, investment, adding partners, hiring specialized human capital and continuous study of the tastes and preferences of consumers to reach a stage of stabilization, market positioning and transcendence.

To Airbnb going to be a challenge to meet the own regulations of each city, let alone in each country, solving timely and efficiently the problems between host and guest, remain the leader in the group of competitors in which it is and mainly the users continue to adhere to its network and maintain confidence in which it is based. However, positive bode years have revolutionized an industry difficult to access, changed the behavior of millions of travelers and why it is not possible to continue breaking schemes in the not too distant future. It is an

enterprise worthy of interest being followed closely by scholars of strategic management.

Conclusion

The impact that the company has had since its first operations has been transgressive, innovative, original and upward trend in the hospitality market. One of the most important benefits is to generate revenue through property hosts that they already have and own, as are their properties without having to invest practically for it. It is clear, that is one of the purposes of this type of business model, therefore, this upward trend is very likely, but almost certainly prevail in the market.

It is therefore necessary that the owners continue informing and implementing the necessary measures to continue to operate and do not damage the reputation and confidence that has been built and which has had widespread success in countries and cities where regulations are present. Further, it is necessary research to consumers to be part of the changes and innovations in relation to their preferences in order to remain the leaders with the strength of their sustained competitive advantages that have argued.

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Behavioral Biases and their Importance in Shaping Overall Investment Behavior of Indian Engineers

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Abstract

The study investigates the three broad dimensions viz. overconfidence, optimism and loss aversion of investment behavior of engineers and their impact on the investment behavior in context of Indian Stock Market. We have studied the importance of each Behavioral dimension/bias in shaping the overall investment behavior. Also, the sub-factors of each dimension are studied in terms of their relative importance in shaping the broad dimension. A structured questionnaire were developed and distributed among 423 Engineers who are engineering graduate. Multi-criteria technique of AHP is used to define the relative contribution of each of the behavioral bias in shaping the investment behavior. The three biases have been studied viz. overconfidence, loss aversion and overreaction. The results revealed that overconfidence is the most important bias and plays most important role in shaping investment behavior followed by loss aversion and optimism. The most important factor in deriving overconfidence is self-attribution. Results also reveal that most of the engineers

are loss averse because they do not like to realize their losses. However, they are not so optimistic for the stock market that they don't expect the price rise even after a long fall.

Keywords: Investment behavior, Overconfidence, Optimism, Loss Aversion, AHP.

Introduction

The Efficient Market Hypotheses, proposed by Eugene Fama suggest that in an efficient market, all the market information are immediately incorporated in security prices and that security prices are the best estimated and accurate prices all the time. But Behavioral Finance denies this assumption and suggest that there are number of evidence such as January Effect, Weekend effect, Seasonality etc. through which it has proved that markets are not efficient all the time and investors often travel from rationality to irrationality in perhaps a predictable manner. To some extent, our emotions, feelings and perceptions influence the investment decisions and these are known as mental biases. Behavior finance makes an

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attempt to study the irrational behavior of investors in the market based on the said mental bias. This field also explains the factors responsible for such behavior. The nature of Indian stock market is considered to be highly volatile, sensitive and reactive to unpredicted shocks and news and it takes no time to impact the market activities. Hence, it is very important to understand the role and importance of Engineers, their trading behavior. Unlike institutional investors, Engineers are considered to be less informed, have psychological biases. It is believed that investment behavior of Engineers influences the stock prices. With this perception about the Engineers, majority of investment strategies and stock market policies are designed and focused to their institutional counterparts, thereby ignoring the engineers' interests to some extent. The purpose of this paper is to analyse the determinants of individual investor behavior in Indian stock market.

Objective of the Study

The objective of the study is to identify the determinants of investment behavior and their relative importance in shaping the investment behavior of Indian engineers.

Theoretical Background

Behavioral finance is an emerging science, and a relatively new and developing field of academic study that tries to study the irrational behavior of investors. Most of investment decisions to some extent are biased and are influenced by our perceptions that do not meet the criteria of rationality. The main focus of Behavioral finance is on this irrationality of individual investor that can affect their investment decisions and the market prices. It attempts to better understand and explain how investor's emotions and cognitive errors influence investors and their decision-making process while doing investments. The contribution of behavioral finance is not to diminish the fundamental work that has been done by proponents of efficient market

hypothesis. Rather, it is to examine the importance of unrealistic behavioral assumptions and make it more realistic. It does this by adding more individual aspects of the decision-making process in financial markets. Without these contributions of behavioural finance, certain aspects of financial markets cannot be understood. Despite the importance of individual's investment decisions, we know little about the factors that influence them. Finance research has often ignored the engineers' decision making process while taking financial investment decisions. There is a need to develop a behavioural paradigm to probe the determinants of investor behavior and their impact on engineers' financial decision making process. Behavioural finance models range from individual investor conduct to market-level outcomes. For the purposes of this research, we adopted an approach favored by traditional Economists. The current study examines behaviors or biases of Engineers that distinguish them from the rational investors envisioned in classical economic theory, Behavioural Finance Micro (BFMI)

Literature Review

The proposition that has dominated in the field of standard finance is Efficient Market Hypothesis (EMH). This hypothesis is based on three basic assumptions that form the basis of the EMH. The first and most significant assumption is that investors are rational. Secondly it is based on the notion that every information is reflected in the market before making investments. It is related to internal consistency. The third principle is that the decision maker always tries to maximize their utility.

Behavioral finance denies the traditional assumptions of expected utility maximization with rational investors in efficient market. There are two building blocks of behavioral finance viz. *cognitive psychology* and the *limits to arbitrage* (Ritter, 2003). Cognitive psychology refers to how people think and the limit to arbitrage is the condition when market is inefficient.

Herbert Simon (1947, 1983) proposed much of the basic theories of behavioural finance under the general heading of '*bounded rationality*'. It specifies that decision making is based on some cognitive limitations. As a result, human behavior is made on the basis of some *heuristics* (Tversky and Kahneman, 1974). The same is also proposed by Slovic (1972) in investment risk-taking behavior where he found that, investor process the information into small pieces and show some judgmental biases which lead people to overreaction on new information (DeBondt and Thaler, 1985, 1987).

Investors tend to become more optimistic when the market goes up and more pessimistic when the market goes down. Hence, prices fall too much on bad environment.

According to Kent, et al. (2001), most of the investors behave, while investing, is like they often do not participate in all asset and security categories, they exhibit loss-averse behavior, they use past performance as an indicator of future performance, they trade too aggressively, they behave on status quo, they do not always form efficient portfolios, they behave parallel to each other, and they are influenced by historical high or low trading stocks.

All the aforesaid studies studied the existence of behavioral biases in developed country. Moreover, which bias is more prominent has not been studied yet. Hence this paper tries to fill this gap by studying the existence of behavioral biases in a developing country like India. Also, it studies the priority of each bias in shaping the overall investment behavior.

Research Methodology

Data for the study is primarily collected through survey in the form of questionnaires from stock market investors who have graduate degree in engineering in Delhi NCR. Questions related to investors profile and determinants of investor behavior were included using a Five point Likert

scale. Data collected were analyzed through SPSS and Spread Sheet. *Analytic Hierarchy Process (AHP)* is used to find the relative importance of different behavioural traits of the investors in contributing overall investment behavior. AHP is one of Multi Criteria decision making method that was originally developed by Prof. Thomas L. Saaty. In short, it is a method to derive ratio scales from paired comparisons.

The study identified four broad dimensions of investor behaviour that could have an impact on their investment decisions (*Overconfidence, Optimism Herding and Loss Aversion*) that were further divided into different factors and respondents were asked to rate each factor on Likert scale. On the basis of the overall responses of the investors and the ratings that they assign to the factors of the each dimension AHP determine the relative weights for each dimension of the investment behavior and priorities them in terms of their level of contribution in the formation of behavior of the investor.

Data Analysis and Interpretation:

Profiling of Respondents

Figure 1 shows the demographic profile of investors. Out of 423 investors, there are 78.5% males and 21.5 % females respondents. Majority of investors falls into the age category of 31-40 years. The reason may be that this is the age group which has the comparatively higher income than the investors of 30 years and less. Moreover, they have lesser financial responsibility than the higher age group investors. Most of the investors are married. Only 23.6% investors are single. 23.6% investors are involve in job, 21.5% investors are administration, 20.8% are entrepreneur, 19.4% investors are teachers and 14.7% are scientist. Approximately 50% investors falls in the income group of 5 Lacs to 10 Lacs.

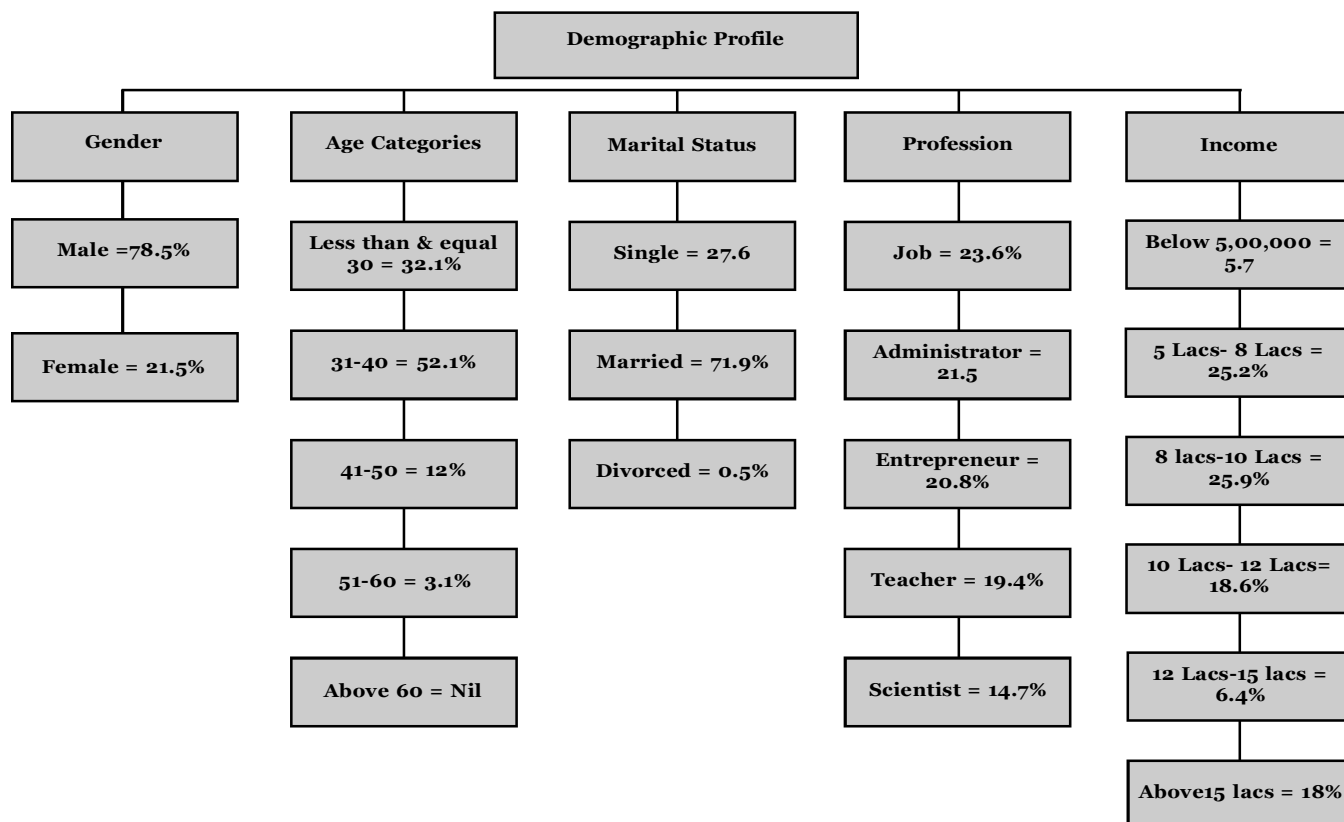


Figure 1: Demographic Profile of Respondents

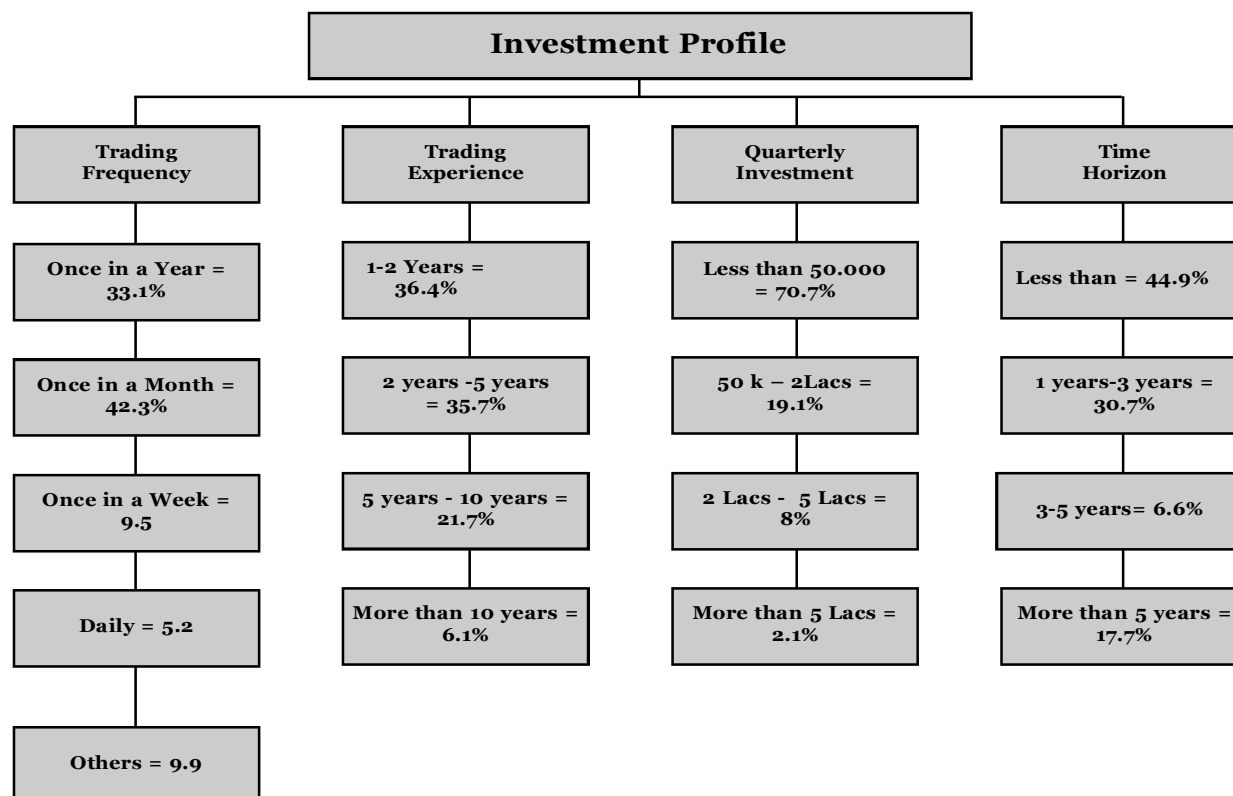


Figure 2: Investment Profile of Investor

Figure 2 Shows the investment profile and sophistication of the respondents. It shows that most of the investors (42.3%) invest on monthly basis where as 33.1% people have very low frequency i.e. once in a year. However, approximately 10% investors invest twice or thrice in the stock market. Very few investors (5.2%) believe in intraday trading. Respondents having experience of 1-2 years are 36.4%, experience of 2-5 years are 35.7%, 5-10 years are 21.7% where as investors having experience of more than 10 years are 6.1%. This shows that the respondents have good trading experience in stock market which enhances the validity of the study. The figure also shows that the time horizon for most of the investor is very low, maximum to 3 years. Only approximately 23% investors invest for more than 3 years.

Analysis of Determinants of Investor Behavior

With the help of previous literature, we have identified three broad dimensions of investment behavior: Overconfidence, Optimism and Loss Aversion that are divided into different sub factors. Table 1,2,3,4 shows the frequency of responses for the different subfactors of overconfidence dimensions, Pairwise comparison matrix, normalized matrix and rank matrix respectively. Similarly, Table 5,6,7,8 shows the frequency of responses for the different sub factors of optimism dimensions, Pairwise comparison matrix, normalized matrix and rank matrix. Table 9,10,11,12 shows the frequency of responses for the different sub factors of loss aversion dimensions, Pairwise comparison matrix, normalized matrix and rank matrix

Frequency Analysis of Overconfidence

Table 1: Frequency Results for Overconfidence

Question	S.A(1)	A(2)	U(3)	D(4)	S.D(5)	Total
Your Current Portfolio will outperform the SENSEX (<i>predictive Overconfidence</i>)	41(9.7%)	133(31.4%)	191(45.2%)	46(10.9%)	12(2.8%)	423(100%)
More than 80% of time your investment decision proved to be right (<i>Certainty Overconfidence</i>)	41(9.7%)	132(31.2%)	166(39.2%)	72(17%)	12(2.8%)	423(100%)
You are responsible for all your past successes. (<i>Self Attribution</i>)	84(19.9%)	171(40.4%)	137(32.4%)	25(5.9%)	6(1.4%)	423(100%)

The frequency results of these three statements tell reveals that investors have high level of Overconfidence as there is greater level of self-

attribution, high level of certainty and predictive confidence as majority of investors gave rating of 2 and 1 in case of each parameter.

AHP Analysis of Overconfidence

Table 2: Pairwise Comparison Matrix for Overconfidence

Feature	Predictive Confidence	Certainty Confidence	Self-Attribution
Predictive Confidence	1.00	2.00	0.25
Certainty Confidence	0.5	1.00	0.33
Self Attribution	4.00	3.00	1.00

Table 3: Normalized Matrix for Overconfidence

Feature	Predictive Confidence	Certainty Confidence	Self-Attribution	Average
Predictive Confidence	0.182	0.333	0.158	0.224
Certainty Confidence	0.091	0.167	0.209	0.155
Self-Attribution	0.727	0.500	0.633	0.620
Total	1.000	1.000	1.000	1.000

Table 4: Rank Matrix for Overconfidence

Feature	%	Rank
Self - Attribution	62%	1
Predictive Overconfidence	22.4%	2
Certainty Overconfidence	15.5%	3

The Analytical Hierarchical Process determined the relative weights of each factor of the dimension of *Overconfidence*. In the overall dimension of Overconfidence the most

prominent factor was the *Self-Attribution* that result in successful investment, (approx. 62%) followed by *Predictive Overconfidence* with approximate weights of 22% and *Certainty Overconfidence* with 16%.

Frequency Analysis of Investor Optimism

Table 5: Frequency Results for Optimism

Question	S.A(1)	A(2)	U(3)	D(4)	S.D(5)	Total
You, generally buy the securities whose prices are currently rising (<i>contrary to Market</i>)	42(9.9%)	192(45.3%)	118(27.9%)	59(13.9%)	12(2.8%)	423(100%)
You think off long term investment profits even if the price of the stock, you bought, falls immediately (<i>Price Increase Expectation</i>)	41(9.7%)	133(31.4%)	191(45.2%)	46(10.9%)	12(2.8%)	423(100%)

By analyzing the responses the high Optimism among the investors is low since only 10 % investors are optimistic about the price rise. However if we see the composite scores of positive optimism, 42% of investors do believe

that even if the market falls, it will recover within a few days and 55% investors this that there is a further scope in the current market for price rise.

AHP Analysis of Optimism

Table 6: Pairwise Comparison Matrix for Optimism

Feature	Contrary to Market	Price Increase Expectation
Contrary to Market	1.00	0.50
Price Increase Expectation	2.00	1.00

Table 7: Normalized Matrix for Optimism

Feature	Contrary to Market	Price Increase Expectation	Average
Contrary to Market	0.333	0.333	0.333
Price Increase Expectation	0.667	0.667	0.667
Total	1.000	1.000	1.000

Table 8: Rank Matrix for Optimism

Feature	%	Rank
Price Increase Expectation	66.7%	1
Contrary to Market	33.5%	2

Interpretation: The second determinant *Investor Optimism* was measured in terms of investor's outlook of the stock market. AHP analysis assigned the highest rank to the

factor *Price Increase Expectation* (66.7%). Only 33.5% of respondents are believed that market will rise more than now. On the whole the optimism among the investors is very low.

Frequency Analysis of Loss Aversion

Table 9: Frequency Results for Loss Aversion

Question	S.A(1)	A(2)	U(3)	D(4)	S.D(5)	Total
Today's loser will be winner one day, so it better to hold them rather to sell (<i>Loss holding</i>)	120 (28.4%)	119 (28.1%)	103 (24.3%)	53 (12.5%)	28 (6.6%)	423 (100%)
Loosing Rs.1000 caused you more mental pain than the pleasure of getting Rs.1000 (<i>Risk Penalty</i>)	114 (27.0%)	127 (30.0%)	88 (20.8%)	63 (14.9%)	31 (7.3%)	423 (100%)
You often actively dispose gains from your portfolio (<i>Early Profit Booking</i>)	42 (9.9%)	137 (32.4%)	140 (33.1%)	87 (20.6%)	17 (4.0%)	423 (100%)
You are often reluctant to realize the losses (<i>Risk Aversion</i>)	61 (14.4%)	143 (33.8%)	128 (30.3%)	72 (17.0%)	19 (4.5%)	78 (100%)

Interpretation: By considering the various factors collectively it could be inferred that

majority of investors are Loss averse and they do not prefer realizing losses. Rather they prefer selling their winning stocks at earliest.

AHP Analysis of Loss Aversion

Table 10: Pairwise Comparison Matrix for Loss Aversion

Feature	Loss Holding	Loss Penalty	Profit Booking	Loss Aversion
Loss Holding	1.00	1.00	0.25	0.50
Risk Penalty	1.00	1.00	0.20	0.33
Early Profit Booking	4.00	5.00	1.00	0.50
Risk Aversion	2.00	3.00	2.00	1.00

Table 11: Normalized Matrix for Loss Aversion

Feature	Loss Holding	Loss Penalty	Profit Booking	Loss Aversion	Average
Loss Holding	0.125	0.1	0.072	0.215	0.128
Risk Penalty	0.125	0.1	0.058	0.142	0.106
Early Profit Booking	0.5	0.5	0.290	0.215	0.376
Risk Aversion	0.25	0.3	0.580	0.429	0.389
Total	1.00	1.00	1.00	1.00	1.000

Table 12: Rank Matrix for Risk Preferences/Attitudes

Feature	%	Rank
Risk Aversion	38.9%	1
Early Profit Booking	37.6%	2
Loss holding	12.8%	3
RiskPenalty	10.6%	4

AHP analysis reveals that investors are generally reluctant to realize the losses because of the higher risk aversion. The factor of *risk aversion* gets the highest rank among all four factors with weights of 39% approx. Also, the tendency of selling their winners weights about 38%. While the other two factors *Loss Holding* and *Risk Penalty* weighs about 13% and 11%.

AHP Analysis of Determinants of Investor Behavior

After analyzing the importance of sub factors of all the broad dimensions, we analyze the importance of all the three broad dimensions in overall investment behavior. Table 13, 14 and 15 shows the Pairwise comparison matrix, normalized matrix and rank matrix of all the three dimensions of investment behavior.

Table 13: Pairwise Comparison Matrix of Behavioral Determinants

Feature	Overconfidence	Optimism	Loss Aversion
Overconfidence	1.00	5.00	2.00
Optimism	0.20	1.00	0.20
Loss Aversion	0.50	5.00	1.00

Table 14: Normalized Matrix of Behavioral Determinants

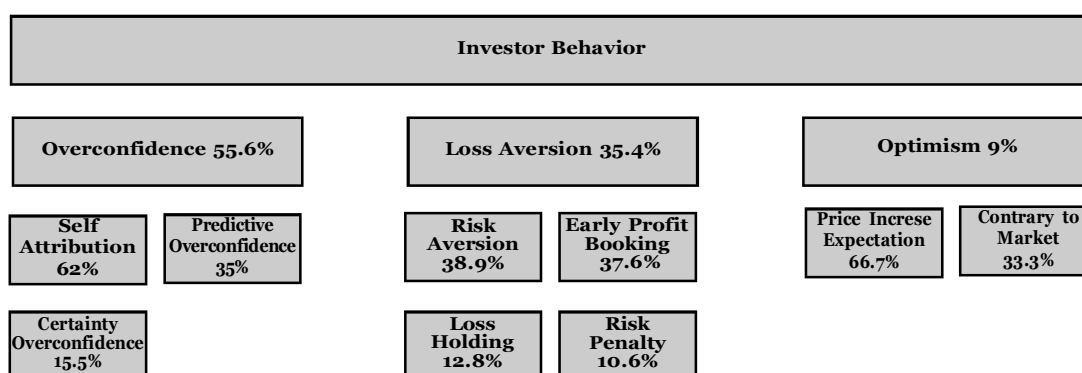
Feature	Overconfidence	Optimism	Risk Aversion	Average
Overconfidence	0.588	0.455	0.625	0.556
Optimism	0.118	0.091	0.063	0.090
Loss Aversion	0.294	0.455	0.313	0.354
Total	1.00	1.00	1.00	1.00

Table 15: Rank Matrix of Behavioural Determinants

Feature	%	Rank
Overconfidence	55.6%	1
LossAversion	35.4%	2
Optimism	9%	3

AHP determined that *Overconfidence* carries more than 55% weight, so it is the most prominent behavioural dimension that has

greater impact in the formation of overall behavior followed by *Loss Aversion* with a weight of 35% and *Optimism* with weights 9%.

**Figure 5: AHP Results of Investor Behavior**

Findings

This paper analyses investment behavior of individual investor in terms of four broad behavioral dimensions viz; Overconfidence, Optimism and Loss Aversion that are measured in terms of different factors. The findings

suggest that the dimension of *overconfidence* plays an important role in the determination of overall behavior, followed by the role of *Loss Aversion* and *Optimism*.

In this study *overconfidence* bias is measured

in terms of four factors: Self Attribution, predictive overconfidence and certainty overconfidence. It is clearly found that majority of investors attribute all their successes in stock market to themselves only. They also believe that their portfolio will always outperform the SENSEX. They are found to be confident about their investment decisions.

When studied the level of *optimism* among investors in terms of their perception of future position of the stock market, we found that investors are not much optimistic about the future of market. It's found that some investors want to keep their investments in the stock markets only because the stock prices have declined and they do not want to sell their stocks at a loss. Very few investors are interested to buy the securities whose prices are currently rising in the stock market as they think that price will go down and their investment will incur losses.

When measured *loss aversion* of Engineers we found that investors are risk averse and they are reluctant to realize their losses and hold the same. They also prefer to realize their gains at earliest to book the profit. However, they hold the securities in the expectation that market will recover and they will earn from the securities. Moreover, the risk penalty is more for the investors.

Conclusion

For a very long time, the researchers and market participants relied on the assumption that all investors are rational while making their investment decision. The assumption of rationality suggests that investors always try to maximize their utility and demonstrate full controls on their emotions and feelings. But this study reveals that investors are not rational while taking their investment decisions. We found that investors are overconfident, loss averse and optimistic and all these dimensions play a very crucial role in investment behavior. Also there are number of sub dimensions in this area.

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Technology Adoption Among the Students Using Technology Acceptance Model: An Empirical Study on Tripura University

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Abstract

The thirst of a learner is unquenchable for learning, acceptance, adopting new methods and approaches. Technology mediation is one method that aspires to provide higher learning gain among pupils. Universities across the globe adopted various modes and methods of the E-learning. However, the perceived ease of use and behavioural constraints has altogether worked as a barrier to technology adoption. This paper attempts to evaluate the perception of the business management students of Tripura University in accepting the digital learning methods through Technology Acceptance Model (TAM). Standard constructs from TAM were tested through a structured instrument and the study indicates the earlier bottleneck resistance has dropped significantly and the peer mentoring is facilitating the teaching- learning processes.

Key words: Technology Acceptance Model, E-learning.

Introduction

Educational technology or e-learning is learning through electronic means like internet or online, CD-ROM, Memory card run through computer desktop, laptops and Smartphone etc. E-learning has shown a very fast growth and it seems the growth is never ending because of the convenience and effectiveness it provides. Students, academicians and corporate are the prime user of e-learning. In India e-learning market size was USD 16 billion and it is likely to grow at over 5% from 2016-2023 exceeding USD 240 billion. As per Global e-learning market outlook (2015-22) (www.strategymrc.com, 2015) United States leads the e-learning user and Asia is second largest market driven by India and China. India is also getting the boost from the Government's Digital India Initiative. Government of India has launched few schemes like National Mission on Education through information and communication Technology (NMEICT) and National Program on Technology Enhanced Learning.

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Many universities, B-Schools and various other educational institutes in India are adopting the Technology to enhance the learning and teaching experience. Its proving beneficial for both the academicians and students because: of its ease of use, quick paper less sharing, networking, better retention of materials, frequent update of content, convenience and most importantly effectiveness. However a larger section of the students still are affected by stereotype mindsets of the people, low broad band speed, suaveness with use of technology and most importantly more than 75% of the Indian population live in rural areas (as per census 2011) and the reach of internet to those areas are difficult.

Why Students Resist

Students of tertiary education in India are habitual recipient of chalk and talk teaching method. Whenever a new technology is introduced they tend to reject the idea for want of adequate mentoring and prior knowledge. However, most of the central universities like ours suffer from infrastructural bottleneck and adequate technology supervision which render the adoption process under managed causing the gap of digital divide wide open.

Discussion on TAM

Acceptance of technology is best explained by TAM (Davis et. al, 1989) and is most widely applied model of user's acceptance and usage of technology (Venkatesh, 2000). Technology acceptance model is an information systems theory that models how users come to accept and use a technology. It is one of the influential extensions of theory of reasoned action (TRA) by Ajzen and Fishbein's. TAM was proposed by Davis (Davis, 1989; Davis Bagozzi, & Warsaw, 1989). TAM based on two factors perceived usefulness and perceived ease of use which predicts attitudes of the user, which consequently influence intentions to the use of technology. This intention then finally impacts the behaviour of actual system use or

technology use. It is one of the most widely used models to understand the behaviour and prediction of acceptance and use of new technology.

Literature Review

Technology acceptance model is applicable in predicting the intention to use internet among the academicians (Kripanont, 2007) An attempt was made (Park, 2009) to analysis of the technology acceptance model in understanding University students' behavioural intention to use e-learning and has confirmed that TAM is useful theoretical model to help in understanding and behavioural usage of e-learning In a similar studies (Cheung ,K., Lee, O., & Chen, Z,2005) reveals that TAM can be employed to predict and understand the students intention to use e-learning and in other to motivate the students to use e-learning. it is important to present positive perception about the technology usefulness.(Adwan,2013) in a study of exploring students acceptance of e-learning using TAM in Jordanian Universities reveals learning technologist and developers ensured regular user engagement and it lead to several useful implications. But e-learning can be improved with the help of blended learning that is face-to-face and use of technology for teaching, students would be more benefitted (Mukherjee, 2014) In another study (Fontanillas, Carbonell and Catusus, 2016) on e-assessment process: giving a voice to online learners reveals continuous evaluation model is highly rated by students as it motivates them keep up with the e-learning process. Experiences of instructors and students feedback on e-learning technologies can help to design for effective virtual courses (Gharib et al., 2016). The students of photography course using e-learning are satisfied (Suksai, 2016). Even the students of Mathematics have shown a positive acceptance towards using e-learning (Borba et al., 2016). Several studies also reveal that instructors play an important role in positive perception and intention to use by the students.

GAP Analysis

Table 1: Gap Analysis

Author/s	Topic/title	Findings and Gap
Viswanath Venkatesh, Fred D. Davis	A theoretical extension of the technology acceptance model: four longitudinal field studies	Study was on extension of TAM by Davis (1989). But Learning gain was not considered.
Saleh Alharbi, Steve Drew	Using the technology acceptance model in understanding academics' behavioural intention to use learning management system	Study shows the acceptability of TAM in higher-education of Saudi Arabia by the academicians. But the acceptability of students was not done.
Sun Joo Yoo, Wenhao David Huang	Can e-learning system enhance culture in the workplace? A comparison among companies in South Korea	The study reveals that a holistic perspective is important to integrate technology in workplace and for sustainability for organization. Learning gain was not measured for students.
Nastaran Zanjani, Sykvia L. Edwards, Shaun Nykvist, Shlomo Geva	LMS acceptance: The instructor Role	The study shows that if the instructor does not themselves engage in on-line activities it is difficult to engage students also in on-line activities. But the effectiveness or learning gain was not measured.
Marcelo C. Borba et.al	Blended learning, e-learning and mobile learning in mathematics education	Study reveals the acceptance of e-learning by the students of Mathematics stream. Management students were not considered
Debarshi Mukherjee	Role of communication medium in web based instructional environment in Indian Management Education	The study attempts to find the impact of multimedia web based instructional system as mode of communication among management students. But Learning gain was not directly measured.
T.Ramayah et al.	Technology acceptance model: it is applicable to users and non-users of internet banking	Technology acceptance model is more accepted to predict the intention to use by the current user rather than on-user of internet banking. The prediction and gain of learning by students was not attempted.

Objectives

The extensive literature review revealed few important research gaps that helped to set the objectives of the study which are,

1. To study the impact of e-learning tools on students' learning gain.
2. To study the satisfaction level of students using the e-learning technologies.
3. To study the behaviour of students towards e-learning technologies.
4. To study the usefulness of e-learning technologies on student's learning gain.

Proposed Research Model

According to Davis (1989) and Venkatesh (1996) Technology Acceptance Model (TAM) has been used widely in research that looks for acceptance of new technologies. For the purpose of research we have used TAM without the external variables and how perceived usefulness, perceived ease of use, attitude towards use and behavioural intention to use leads to action of use which results in learning gain. Learning gain can be defined as an attempt to measure the improvement in knowledge, skills, articulation and personal development made by students during their time spent in higher

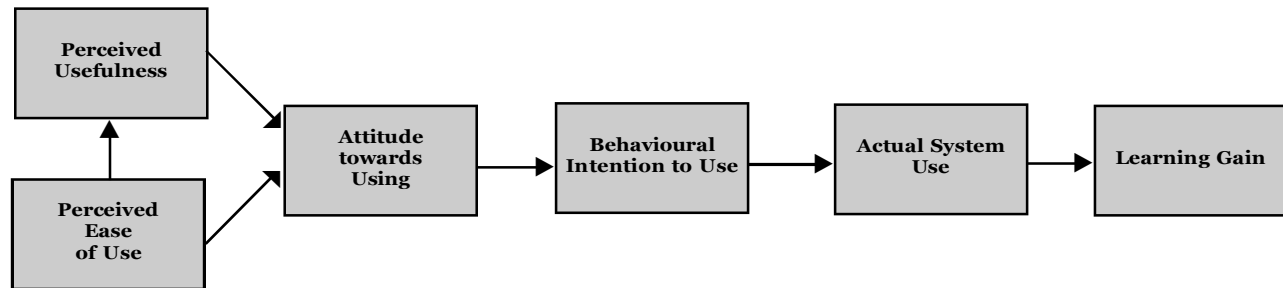


Figure 1: Proposed Research Model (Original TAM model adapted from Davis, 1989)

education. The proposed research model is shown in figure1.

Hypotheses Development

From the above research model the following hypotheses have been development,

- H1. There is a significant positive relationship between students' perceived ease of use and use of e-learning tools.
- H2. There is a significant positive relationship between students' ease of use of e-learning technologies and attitude towards using.
- H3. There is a significant positive relationship between perceived usefulness and attitude towards using e-learning
- H4. There is a significant positive relationship between attitude towards using e-learning and behavioural intention to use.

H6. There is a significant positive relationship behavioural intention to use and actual system use.

H7. There is a significant positive relationship between actual system use and learning gain.

Research Methodology

The study has been conducted with the help of a structured questionnaire which was administered to 40 respondents who are the students of business management programme, Tripura University. Out of which one was rejected, total 39 is actual sample taken into consideration.

Multiple regressions was used for analysis using SPSS ver.16

Analysis

Data were tested using SPSS ver.16

Reliability Statistics

Cronbach's Alpha	N of Items
.870	5

The first table is reliability statistics table that assess the reliability, or internal consistency, of a set of scale or instrument used.

Cronbach's Alpha test shows alpha is 0.870 which can be called as reliable as it alpha $p < .5$ is considered good to run the next series of tests.

Regression

To measure the impact of the independent variables viz. PU (perceived usefulness), PEOU (perceived ease of use), ATU (Attitude toward use) and BI (behavioural intention to use) on

the dependent variable viz. LG (learning gain) multiple regression was used. The above variables were extracted from the proposed research model.

Based on our model the regression equation stands as:

Model is Significant

Descriptive Statistics

	Mean	Std. Deviation	N
LG	2.378	.891	39
PU	2.243	.793	39
PEOU	2.044	.747	39
ATU	2.198	.786	39
BI	2.628	1.162	39

$$LG = B_1PU + B_2PEOU + B_3ATU + B_4BI + B_0$$

Regression result:

Descriptive table 1. Mean of Learning gain(LG), Perceived usefulness (PU), Perceived ease of use (PEOU), Attitude towards use (ATU), and

Correlations

		LG	PU	PEOU	ATU	BI
Pearson Correlation	LG	1.000	.675	.679	.626	.699
	PU	.675	1.000	.658	.458	.498
	PEOU	.679	.658	1.000	.633	.495
	ATU	.626	.458	.633	1.000	.547
	BI	.699	.498	.495	.547	1.000

Behavioural Intention to use (BI) are almost same. The table is reflecting the significance of mean.

The above table shows that learning gain is moderately correlated with Perceived usefulness, perceived ease of use, attitude towards use and behavioural intention to use

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	BI, PEOU, PU, ATU ^a	.	Enter

a. All requested variables entered.

b. Dependent Variable: LG

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.831 ^a	.690	.654	.525	.690	18.935	4	34	.000	1.960

a. Predictors: (Constant), BI, PEOU, PU, ATU

b. Dependent Variable: LG

as $p < 0.5$. Hence we can say that the equation fits in the model.

The above table shows the multiple regression

model summary and overall fit statistics. We find that adjusted R Square of our model is 0.654 that means the regression explains 60.54 % of the variance in the data. The Durbin-Watson $d = 1.960$, which is between $1.5 < d < 2.5$ and therefore there is no first order linear

ANOVA^b

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	20.867	4	5.217	18.935	.000 ^a
	Residual	9.367	34	.276		
	Total	30.234	38			

a. Predictors: (Constant), BI, PEOU, PU, ATU

b. Dependent Variable: LG

auto-correlation in our multiple linear regression data.

The above table is the F-test, the linear regression's F-Test has the null hypothesis that there is no linear relationship between the

Model	Unstandardized Coefficients			Standardized Coefficients	t	Sig.
	B	Std. Error	Beta			
1	(Constant)	.013	.295		.043	.966
	PU	.313	.148	.279	2.121	.041
	PEOU	.251	.174	.211	1.441	.159
	ATU	.187	.149	.165	1.254	.218
	BI	.281	.093	.366	3.018	.005

a. Dependent Variable: LG=

variable. The F-test is highly significant, thus we can assume there is a linear relationship between the variables in our model.

So the above table helps in formulating the

final regression equation $LG = 0.313 PU + 0.251 PEOU + 0.187 ATU + 0.281 BI + 0.013$ Hence the above table shows that Learning gain is more dependent by Perceived usefulness and behavioural intention as the significance point

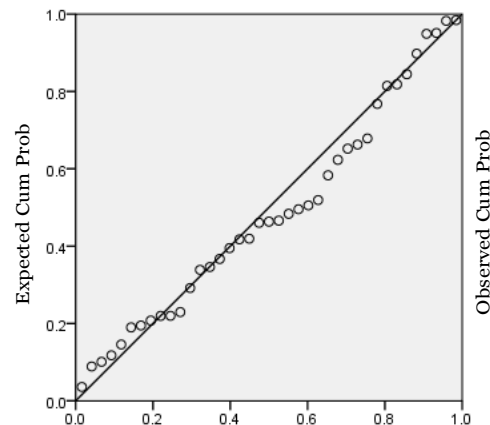
Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.04	4.7984	2.3782	.74103	39
Residual	-.94	1.12772	.00000	.49649	39
Std. Predicted Value	-1.79	3.266	.000	1.000	39
Std. Residual	-1.79	2.149	.000	.946	39

a. Dependent Variable: LG

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: LG

**Charts**

0.41 and 0.05 respectively. The other variables perceived ease of use and attitude towards use is least significant which leads to ultimate Learning gain.

This table also checks for multicollinearity in our multiple linear regression model. The plot indicates that in our multiple linear regressions analysis there is no tendency in the error terms.

Conclusion

Various studies has been done using technology acceptance model to check the acceptance of technology tools at various educational institutions and organizations. Similar attempts has been made in this study with a specific objective to measure its impact over learning gain which indicates perceived usefulness of e-learning tools and behavioural intention to use e-learning to use influences learning gain significantly whereas the impact of perceived ease of use and attitude towards use of e-learning

is limited over the dependent variable. Hence, it shows that students are benefited by the use of e-learning. Even with conditions where power cuts are very frequent, and low broad band internet connectivity students are motivated to use the technology tools which will enhance their skills. Further studies can be done to check the significance of other variable like perceived ease of use and attitude towards use. The study was concentrated only on one university, hence further studies can be done in education sector like secondary, higher secondary and tertiary education sector, which will widen the area and will also give a better glimpse of use of e-learning and its actual results.

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Behavioural Biases in Investment Decision Making

Manika Sharma*

Abstract

Behavioural finance is the study of the influence of the psychological factors on financial markets evolution. Investors fall prey to their own and sometimes others' mistakes due to the use of emotions in financial decision-making. Investors are people with a very varied number of deviations from rational behaviour, which is the reason why there is a variety of effects, which explain market anomalies. Classical finance assumes that investors are rational and they are focused to select an efficient portfolio, which means including a combination of asset classes chosen in such a manner as to achieve the greatest possible returns over the long term, under the terms of a tolerable level of risk. Behavioural finance paradigm suggests that investment decision is influenced in a large proportion by psychological and emotional factors and even group behaviour.

Keywords: *Behavioural finance, Classical finance, Market efficiency, Investment decision, Psychological factors, Capital market, Rational behaviour.*

Introduction

Behavioural Finance is an emerging discipline

that represents a collection of alternative approaches to refine the classical finance definition of economic rationality. In particular, behavioural finance draws attention on the psychology and cognitive science literatures to examine why individual decision-making often deviates from rational choices in systematic ways. Previous research on behavioral finance issues have focused on investor heuristics, biases, and framing effects. Discussions of behavioural finance appear within the literature in various forms and viewpoints. Many scholars and authors have given their own interpretation and definition of the field. It is our belief that the key to defining behavioral finance is to first establish strong definitions for psychology, sociology and finance.

Standard finance, also known as *traditional finance*, is based on various theories and principles, for example the arbitrage principles of Miller & Modigliani; the portfolio principles of Markowitz; the capital asset pricing theory of Sharpe, Lintner & Black; and the option-pricing theory of Black, Scholes & Merton. According to these approaches, markets and market agents are efficient and systematic. The efficient market hypothesis (EMH) states that in an efficient market, all the available information is incorporated while estimating the prices of financial assets. EMH is based on the belief that investors behave

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rationally in the financial market. In decision-making, investors have to choose a course of action among various alternatives in the world of uncertainty. The expected utility theory (EUT) proposes that investors behave rationally by judging all the alternatives on the basis of their utility and the associated risk and make a balanced decision. After the energy crisis of the 1970s, empirical studies (Kahneman and Tversky, 1979) found results that were inconsistent with EMH and EUT.

In the 1980s, behavioural finance emerged as a new concept combining behavioural and psychological aspects in economic and financial decision-making. Behavioural finance challenges the efficient market perspective and helps to understand why investors behave in a particular manner while investing in financial assets. Kahneman and Tversky (1979) developed the prospect theory, which is an alternative to EUT in explaining decision-making under uncertainty. Behavioural finance suggests that the investment decision-making process is influenced by various behavioural biases that encourage investors to deviate from rationality and make irrational investment decisions. People are neither completely rational nor irrational while taking decisions, rather they are normal investors.

Figure 1 demonstrates the important interdisciplinary relationships that integrate behavioral finance. When studying concepts of behavioral finance, traditional finance is still the centerpiece; however, the behavioral aspects of psychology and sociology are integral catalysts within this field of study. Therefore, the person studying behavioral finance must have a basic understanding of the concepts of psychology, sociology, and finance.

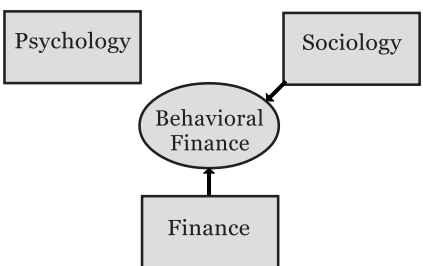


Figure 1

Literature Review

Behavioral finance, has achieved impressive strides in explaining the behavioral aspects of investment decisions. Behavioral finance investigates choice under uncertainty. Three major elements frame behavioral finance in Prospect Theory, regret aversion and self control. Each element captures behavioral attributes of individual investors. Empirical studies of the behavior of individual investors first appeared in the 1970s. Despite the importance of individuals' investment decisions, however, we know little about the factors that influence them. This review of the literature, therefore, concentrates on work involving both individual and professional investors. Individuals' investment behaviour has been explored through a large body of empirical studies over the past three or four decades. For example, Potter, (1971) identifies six factors: dividends, rapid growth, and investment for saving purposes, quick profits through trading, professional investment management and long-term growth that affect individual investors' attitudes towards their investment decisions.

Theories of Investors' Behavior

1. Regret-Theory

It deals with the emotional reaction people experience after realizing they've made an error in judgment. Faced with the prospect of selling a stock, investors become emotionally affected by the price at which they purchased the stock. So, they avoid selling it as a way to avoid the regret of having made a bad investment, as well as the embarrassment of reporting a loss. Regret theory can also hold true for investors who find a stock they had considered buying but did not want to go up in value. Some investors avoid the possibility of feeling this regret by following the conventional wisdom and buying only stocks that everyone else is buying, rationalizing their decision with "everyone else is doing it" (Pareto, 1997).

2. Prospect/Loss-Aversion-Theory

It suggests that people express a different degree of emotion towards gains than towards losses. Individuals are more stressed by prospective losses than they are happy from equal gains. An investment advisor won't necessarily get flooded with calls from her client when she's reported, say, a \$500,000 gain in the client's portfolio. But, you can bet that phone will ring when it posts a \$500,000 loss! A loss always appears larger than a gain of equal size - when it goes deep into our pockets, the value of money changes. Prospect theory also explains why investors hold onto losing stocks: people often take more risks to avoid losses than to realize gains. For this reason, investors willingly remain in a risky stock position, hoping the price will bounce back. Gamblers on a losing streak will behave in a similar fashion, doubling up bets in a bid to recoup what's already been lost. So, despite our rational desire to get a return for the risks we take, we tend to value something we own higher than the price we'd normally be prepared to pay for it. The loss-aversion theory points to another reason why investors might choose to hold their losers and sell their winners: they may believe that today's losers may soon outperform today's winners. Investors often make the mistake of chasing market action by investing in stocks or funds which garner the most attention. Research shows that money flows into high-performance mutual funds more rapidly than money flows out from funds that are underperforming (Kahneman and Tversky, 1979).

3. Over/Under Reacting Theory

It says that investors get optimistic when the market goes up, assuming it will continue to do so. Conversely, investors become extremely pessimistic amid downturns. A consequence of anchoring, placing too much importance on recent events while ignoring historical data, is an over- or under-reaction to market events which results in prices falling too much on bad news and rise too much on good news. At the peak of optimism, investor greed moves stocks

beyond their intrinsic value (Hong and Stein, 1999).

Behavioural Biases and Investment Decision-making

In this section, theoretical background of behavioural biases involved in investors' investment decision-making is explained. How do investors behave? Why do investors behave in a particular manner? To answer these questions, a relatively new concept, behavioural finance, emerged in the fields of economics and finance in the behavioural finance studies the psychological aspect of financial decision-making and explains the irrationality of investors in investment decision-making. Usually, the investor's behaviour deviates from making rational or logical decisions and leans towards being influenced by various behavioural biases.

These biases influence the investor's rationality in investment decision-making. Kahneman and Tversky (1979) developed prospect theory and explained that the investor's decision-making is based on potential gains and losses rather than on final outcomes. This phenomenon occurs because of the cognitive biases that affect the judgment of these gains and losses. Investors show various types of behavioural biases, which includes following sections:

Overconfidence

Overconfidence is a well-established and common bias that makes people too confident about their knowledge and skills and ignores the risk associated to investment. Earlier studies in this area have explained how the overconfidence bias influences rational decision-making behaviour. Odean (1999) explained that investors with discount brokerage accounts become overconfident and engage in excess trading. However, Odean (1999) also proposed that because of excess trading, the realised gains are not sufficient to cover the transaction cost. Similarly, Barber and Odean (2000) analysed the data set of 78,000 households at a large discount brokerage house firm in the USA and found that excessive trading realised less

returns. Further, various empirical studies have been conducted in this field, for example Daniel *et al.* (1998), Barber and Odean (2001), Statman *et al.* (2006), and Weber and Camerer (1998).

Disposition Effect

Disposition effect is another important behavioural bias wherein investors are more prone to selling the winning stock and tend to hold on to the loss-making asset. Odean (1998) observed that at the end of the year, because of tax motivation, investors are more willing to sell the loss-making assets. Shefrin and Statman (1985) developed a theoretical framework concerned with selling of the winning stock and holding on to the loss-making asset, which is supported by empirical evidence also. Further, in various research studies (Frazzini, 2006; Weber and Camerer, 1998; Barberis and Xiong, 2009), empirical evidence for the disposition phenomenon has been generalised.

Herding

Herding refers to the situation wherein rational people start behaving irrationally by imitating the judgements of others while making decisions. There can be numerous reasons for herd behaviour being exhibited among different types of investors. Individual investors tend towards demonstrating herd behaviour because they follow the decisions of a large group or noise traders. Analysts may herd their past experiences/decisions or imitate others to protect their reputational or compensation concern. Lee *et al.* (2004) reported that individual investors are more inclined to adopting herding behaviour than are institutional investors. Further, some significant studies (Grinblatt *et al.*, 1995; Lakonishok *et al.*, 1992; Wermers, 1999) have been conducted on the herd behaviour in investment decision-making.

Representativeness

Representativeness refers to the degree of

similarity that an event has its parent population (DeBondt & Thaler, 1995, p.390) or the degree to which an event resembles its population (Kahneman & Tversky, 1974, p.1124). Representativeness may result in some biases such as people put too much weight on recent experience and ignore the average long term rate (Ritter, 2003, p.432). A typical example for this bias is that investors often infer a company's high long term growth rate after some quarters of increasing (Waweru *et al.*, 2008, p.27).

Anchoring

In financial markets, Anchoring arises when a value scale is fixed by recent observations. Investors always prefer to the initial purchase price when selling or analysing. Thus, today prices are often determined by those of the past. Anchoring has some connection with representativeness as it also reflects that people often focus on recent experience and tend to be more optimistic when the market rises and more pessimistic when the market falls (Waweru *et al.*, 2008, p. 28)

Availability Bias

Availability bias happens when people make use of easily available information excessively. In stock trading area, this bias manifests itself through the preference of investing in local companies which investors are familiar with or easily obtain information, despite the fundamental principles so-called diversification of portfolio management for optimization (Waweru *et al.*, 2003, p.28).

Optimism

Optimism bias leads an individual to believe that their future will be better compared to other (Bazerman., 2006). For this purpose, optimism reflects a preference for the positive outlook and an unrealistic overestimation of future events not related to personal skills, and it is understood as an average error (overestimation). Thus, the two terms, optimizes

and overconfidence are often used interchangeably (Fairchild, 2005).

Mental Accounting

It states that humans have a tendency to place particular events into mental compartments, and the difference between these compartments sometimes impacts our behavior more than the events themselves. An investing example of mental accounting is best illustrated by the hesitation to sell an investment that once had monstrous gains and now has a modest gain. During an economic boom and bull market, people get accustomed to healthy, albeit paper, gains. When the market correction deflates investor's net worth, they're more hesitant to sell at the smaller profit margin. They create mental compartments for the gains they once had, causing them to wait for the return of that gainful period (Thaler, 2001).

Cognitive Dissonance

Cognitive dissonance is the mental conflict that people experience when they are presented with evidence that their beliefs or assumptions are wrong; as such, cognitive dissonance might be classified as a sort of pain of regret, regret over mistaken beliefs. As with regret theory of cognitive dissonance, Ferstinger (1957) asserts that there is tendency for people to take actions to reduce cognitive dissonance that would not normally be considered fully rational: the person may avoid the new information or develop contorted arguments to maintain the beliefs or assumptions.

10. Home Bias

Home bias, also termed equity home bias, refers to the situation wherein individuals or institutions prefer to hold on to domestic securities rather than to foreign assets in their portfolio. It is also known as the equity home bias puzzle because returns realized through domestic equity portfolio implies that more potential benefits are derived from the international diversification of portfolio.

Initially, French and Poterba (1991) and Tesar and Werner (1995) analysed equity home bias in their studies. The possible reasons behind home bias may be investment barriers, transaction costs, information asymmetry, inflation hedging and non-tradable assets. Various research studies have elucidated that there are no conclusive explanations for home bias, so it remains a puzzle among market participants. Coval and Moskowitz (1999), Lewis (1999), Tesar and Werner (1995) and Ahearne *et al.* (2004) have also contributed by giving insightful meaning in the area of home bias.

11. Gambler's Fallacy

When an individual erroneously believes that the onset of a certain random event is less likely to happen following an event or a series of events. This line of thinking is incorrect because past events do not change the probability that certain events will occur in the future. There are certain beliefs which are false but they do affect the decision making of an investor.

There is quite a bit of planning work that needs to be performed before we get to the behavioral considerations, and here are some of the issues that typically need to be addressed:

- *Portfolio simplification*—Many clients arrive with multiple retirement accounts and individual brokerage accounts that need to be consolidated for better management.
- *Improving tax efficiency*—Part of this issue involves placing appropriate investments in taxable versus tax-deferred or tax-free accounts, and the other part involves choosing tax efficient investments within the taxable accounts.
- *Reducing investment costs*—Here I reflect my personal bias favoring index investing, so in my view lower costs and improved tax efficiency are almost always good for the client.
- *Bringing in new asset classes*—This involves seeking out investment classes that offer favorable risk/return tradeoffs and, most importantly, show a low correlation with more traditional asset classes—examples

might be foreign stocks, foreign bonds, commodities, and investment real estate.

- *Protecting against inflation*—It is important to recognize that risk and return analysis using nominal returns and an assumed fixed inflation rate over the projection period may

leave the client vulnerable to inflation surprises. This shortcoming can be addressed by tilting the portfolio toward those asset classes, like inflation protected bonds or real assets, that provide greater inflation protection.

Behavioral Biases that Help to Take Sound Financial Decisions

Behavioral Biases	Means	Impact
Hindsight Bias	Tendency to view events as being more predictable after it is known	Regret a loss even though due care was taken while buying a stock.
Loss Aversion	Being very uncomfortable with a loss or a potential loss	May lead to continue keeping loss-making stocks even if the stocks have a poor future but not adhering to stop loss discipline
Mental Accounting	Account for different assets in the mind.	May lead to not knowing the total return (income / dividend) Also may lead to poorly diversified portfolio.
Disposition Effect	Being very uncomfortable with a loss or a potential loss and take wrong decision	May lead to selling all winner stocks and retaining losing ones
Anchoring	Being hooked to a specific price/return and not change one's opinion.	May lead to not discount the changes in the markets and remain status quo.

Suggestions For Successful Trader and Investor for Better Financial Decision Making

Trader	Investor
Trading is not an alternative for investment plan: Many people confuse trading with investing. Never allocate capital meant for meeting short-term financial needs into trading. Trading capital should not form more than 25 per cent of one's total capital allocation.	Build conviction on business, and then invest: The investments one makes into stocks are fraught with both market specific and company specific risks. Thus, invest in stocks whose business one understand and have researched well.
No trade is worth losing more than 5 per cent of trading capital: Do not carried away by a "Stock tip". Pre-define maximum exposure and maximum loss per trade. Protecting one's capital should be the top priority.	Keep margin of safety: Any investor who owns a stock can never exactly know the "true worth" of it. Thus, one should look at buying at historically attractive valuations. Though history may not always signal correctly about the future, in majority of cases it does help.
Average a profit position and not a loss position: Start trade by taking small positions and gradually increase the ones, which are showing profits and exit the ones showing losses. Never increase a loss making position. By doing so, one could lose lesser in wrong calls and ride the profit calls. One of the biggest mistakes traders commit is to exit the profit positions too early.	The stock does not know one own it, so do not get emotional: One of the mistakes one make as equity investor is, that he gets emotionally attached to his stocks and lose rationality in understanding or evaluating them in future. Keep an arm's length from the stocks one invest in and keep reading analyst reports for any change of views.
Keep trading portfolio adequately hedged: Try to build a typically trading portfolio with combinations of long and short positions. Hence, on days when market drops, some of investor's positions will show profits.	Investments require patience: Stock investing is not everybody's cup of tea as they sometimes test patience to the hilt. If one has researched the portfolio stocks well and are conviction driven, remain invested in the stock until fundamentals degrade significantly. Do not trade in it. Mostly short-term stock price volatilities are a function of market sentiment rather than stock specific issues.

There are few studies which conducted a research on the impact of respective biases on the financial decision making of an individual investor and they stated that decision gets affected by the other factors as well; along with the stated biases i.e some biases have less impact in developed economy, some varies in a unique fashion with age and gender, some biases are studied with the personality type and indicators and every study has different result.

Indian Perspective

In India the concept of behavioural finance is still at its infancy stage. Investment in stock market is still not very active mode of investment as compared to other secured modes of investment. Being emerging capital market, people in India do invest and take risks but it's comparatively less than the other developed markets. In developed capital markets, it is not that great investors do not have flaws, it is just that they understand the importance of emotions in trading, and train their mind not to mix emotions with decisions by following a twostep process (i) understand one's own emotional and psychological weaknesses by studying various identified anomalies or 'biases' and determine whether he/she has committed these mistakes in the past or if there is a tendency to commit this in future; and (ii) after achieving objectives in previous step, understand the irrational behavior of others and benefit from their mistakes (Parikh, 2011).

Moving focus to India in 2008, the SENSEX – India's oldest and among the most popular stock market index of the Bombay Stock Exchange representing the free-float market value of 30 component stocks representing the most well-established companies across key sectors – had touched an all-time high closing high of 20,873 points in January 2008 although the sub-prime mortgage crisis had already originated in the USA. A year later, in March 2009, the index had tanked to 8,160 points, after the crisis had spread globally. Even before the impacts of the crisis has smoothed out completely, the SENSEX touched a new all-

time high in November 2010 and closed at 20,893 points. Then a new crisis in the form of a Sovereign debt crisis originated in Europe (Sinha, 2012) making the SENSEX tank again.

One word that has dominated the world of financial markets since 2008 has been 'Volatility' and the markets in India have been no exception. Extreme movements in stock prices because of fear and anticipation have, as it is supposed to, made life tough for a rational investor. Market sentiments have been observed to sway wildly from positive to negative and back, in the shortest timeframes like weeks, days and hours. In this context, understanding irrational investor behavior deserves more importance that it has ever had. Various psychological biases can be arguably influencing the investment decisions of investors, and this is where the problem was identified. In India behavioral finance presents a lot of fresh opportunities and challenges mainly because it is a relatively young field. Moreover, it offers numerous opportunities for creative thinking and experimental studies, since there is an opportunity to focus on the human mind and its ways. The field is closely related to behavioral economics, which focuses on understanding the rationale behind economic decisions, by researching on various identified cognitive or emotional biases, which people may be suffering from.

Behavioral Finance should be given more importance in the Academic Curriculum, if it has not already been given its due. The schools do an excellent job in equipping students with knowledge of the sciences and various techniques, which definitely serves as a foundation to a great career. If they are equipped with excellent knowledge in Behavioral finance, the psychological aspect of the field would have already helped them achieve better self-understanding, and hence decision making in pressure situation might not be as challenging to them as it would be otherwise. Knowing what to do is important, but knowing when to do what is to be done, is priceless.

Conclusion

Behavioral finance - a relatively new field that came into relevance in the 1980s – studies the effect of psychology on financial decision-making. It studies how investors interpret new information and act on it to make decisions under uncertainty. The science does not try to label traditional financial theories as obsolete, but seeks to supplement the theories by relaxing on its assumptions on rationality and taking into consideration the premise that human behavior can be understood better if the effects of cognitive and psychological biases could be studied in context where decisions are made. Are people (market participants) rational? Or are they likely to be driven by bouts of emotions like fear and greed, which could lead to bad decisions? The main recommendation for investors is to make constant attempts to increase their awareness on behavioral finance by educating themselves on the field.

Studying about the biases, and reflecting on their decisions are likely to help achieve better self-understanding of the extent and manner to which they get influenced by emotions while making financial decisions under uncertainty. Even after satisfactory awareness is achieved it is highly recommended that they maintain a chart of the behavioral biases they are likely to be vulnerable to. This should be reviewed periodically in order to recollect and refresh their memory thus giving themselves a better chance to make improved financial decisions in the stock market. Most essentially, what remains unanswered is whether greater awareness of investors about behavioral biases is likely to increase the market efficiency. Awareness about behavioral biases and its application in the course of making investment decision would be increasing the rationality of investment decisions thus making way for higher market efficiency.

The investors need to analyze the investment factors carefully using the reasonable business knowledge before making an investment decision. The investors should also be able to interpret the market and economic indicators since they influence the performance of the

share on the market. They should evaluate all the variables in the environment instead of considering only one variable. Investors do also need to diversify their investment in different companies by developing a portfolio of investments to minimize risks and maximize returns.

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Community Colleges in Malawi Initiative: Transforming Malawi into a Hub of Innovation in Technology Towards Achieving Global Competiveness

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Abstract

Community Colleges in Malawi initiative was launched in Malawi 2 years ago. It was coined by the current President of Malawi, His Excellency Peter Arthur Muthalika. The Malawi Government observed that the unemployment rate was high and there was lack of skills among the youths. To deal with these challenges, Government has been introducing, community colleges to offer skills relevant to unemployed youths. As expected, the youths are getting skills. The followings are policy recommendations: A deliberate 3 year tax waiver on all businesses being established, introduction of special fund for start-up capital and easing cross border trade arrangements.

Key words: Innovation, Youths, Skills, Community Colleges and Global Competitiveness.

Introduction

Worldwide during the elections campaigns, political parties market their manifestos so as to woo voters to vote for them so as to form the next government. It was the same in Malawi

in 2013/14 towards the elections that took place in May 2014. During the campaign DPP promised to establish community colleges throughout the country to increase access to technical, entrepreneurial and Vocational Education and Training (TEVET).

According to concept note for establishing community colleges (2014), a community college is defined as a training institution whose educational facilities are available to youth and other members of the community. According to the concept paper (2014), it can also be an institution established in a community, owned by a community and run by a community to cater for youth and adults who would like to further their career and those who did not complete their schooling or never attended school.

Problem Statement and Rationale

According to the concept note for establishing community colleges (2014), in Malawi, unemployment is prevalent and the rural sector that is predominantly dependent on agriculture harbors most of the unemployed because of the nature of work which does not require specific knowledge and skills. In rural sector,

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farming is seen to be the main activity because of lack of exposure to other productive activities.

A large percentage of the rural population is migrating into towns and cities in search of jobs which unfortunately are very limited. The majority of the migrants have no employable skills that can enable them get the limited jobs on the labour market. As a result, most of them engage in socio-economic problems such as crime, drug abuse and vandalism.

To deal with these challenges, the Malawi Government has been introducing, community colleges in each district to offer productive knowledge and skills relevant to unemployed youths. The community colleges will assist their graduates to become self-employed, and/or allow them to proceed towards attainment of higher qualifications. Specialized job-placement agencies will be established to ensure skill-job matching. This clearly indicates the significance of the initiative.

Methodology

Nyasa Times Newspaper (2015) reported that

His Excellency the President of Malawi, Professor Peter Arthur Muthalika launched the concept on 21st March 2015 at Ngala in Karonga District. The newspaper quoted him saying that “Technical and vocational jobs are an important means of development and self sufficiency because they provide and achieve a turnaround in poverty indicators, if our people, especially the youth, are given Technical, Entrepreneurialship and Vocational Training.” during the official launch. According to the concept note for establishing community colleges, the first task was to establish management committees. Thereafter, potential sites were to be identified. Upon the identification of the potential sites, infrastructure development such as renovating buildings was the next activity. Trainers were identified and recruited followed by provision of training tools and equipment. The next stage was to recruit trainees (60) per college followed by training rolling out. Thereafter there was administering of community colleges and

capacity development in terms of short courses. There has been lobbying for funds for smooth running of the colleges. Finally, support business establishment for prospective entrepreneurs since the launching of the initiative. It has been the wish of the Government of Malawi to continue the construction of the community colleges.

Sustainability

There are 3 ways that have been employed to ensure sustainability. The first strategy employed is to train the entrepreneurs’ business development and entrepreneurship skills. This is a transformation in mind set whereby graduates are becoming self-employed. All in all, according to the concept note, acquisition of skills for wage employment and procession towards attainment of higher qualifications will be encouraged.

The second one is the establishment of the business incubator centers in the communities based on the area of focus with an aim creating a conjunctive business establishing environment. This in turn is making the entrepreneurs to change innovation into business. Linking entrepreneurs from community colleges to financial lending institutions such as Opportunity Bank of Malawi (OBM) Malawi Rural Finance Company and Microloan Foundation is the last strategy that is in place with an aim of allowing the entrepreneurs to access start- up capital. In addition to linkages to financial lending institutions, graduates will be provided with start - up tools and equipment.

Expected Outcomes

According to the concept note (2014), the community college is expected to reduce the prevalence of unemployment among unskilled and unproductive youth. It will also strengthen community participation in development projects as well as increase income (for the rural masses) and chances of education progression. Ultimately, it will encourage entrepreneurship among the Malawians with an aim of

encouraging innovation in technology and thus achieving global competitiveness.

Monitoring and Evaluation

To ensure the smooth running of the initiative, a number of committees have been put place as follows:

- Inter-ministerial Committee for coordination of implementation of TEVET activities and programmes
- National Steering Committee (NSC) for policy direction in the functioning of community colleges.
- Technical Working Group (TWG) for overseeing the functioning of community colleges, developing infrastructure, developing curricula, building capacity of teachers, developing training materials, providing teaching and learning materials as well as conducting monitoring and evaluation.
- District Management Committees (DMC) for identifying sites, identifying trainers, liaising with the communities, prioritizing training needs and sourcing additional operational funds.
- College Management Committees (CMC) for operational issues such as identifying training needs, identifying trainees, maintaining infrastructure, as well as monitoring college performance, discipline and quality of training.

Initiative Implementation Progress

So far so good as the community colleges are in place. As expected the youths are getting skills. With the progress made so far, it is evident enough that innovations are up for grabs and the country will be achieving global competitiveness slowly but surely.

There is a swift change in terms of the mindset as the people are now becoming entrepreneurs and thus becoming self employed and able to employ other youths too. It is a process that

is slowly gaining ground and the initiative seems to be a solution to high unemployment rates the country is facing now. Quoting President Muthalika “Community technical colleges provide with a way out of boredom and aimless idling for young men and women who have finished but were unable to get into university” Nation Newspaper (2016) reported that community colleges have been giving hope to youths.

Currently, it is difficult to give out the actual figures in terms of number of graduates and what they are actually doing on the ground. All in all, the fact remains that community colleges are really changing the Malawi’s landscape not only in terms of transforming the country from a predominantly consuming country into a producing country but also encouraging innovations in technology towards achieving global competitiveness.

Opportunities-International Recognition

There is an opening in terms of international recognition. According to Nyasa Times Newspaper, the initiative has been getting international recognition and backing. Nyasa Times Newspaper (2016) reported that ‘Malawi Community Colleges receive China backing’. Under the deal, the Chinese Government will assist the Malawi Government to construct some more community colleges across the country. Nyasa Times Newspaper (2016) also reported that “International Labour Organization said it plans to use Malawi as a model in Africa for the establishment and implementation of community colleges”. This is a great opportunity and the Malawi Government will get a great international recognition through this initiative. This generally, indicates that the initiative is a solution to problems rocking Malawi as far as youth economic empowerment is concerned.

Pre Launching Policy Recommendations

Mr. Zinza Msukuka, Executive Director of Quality Assurance (Maseru, Lesotho) had a chance to assess the initiative while it was in

an infancy stage (before commencement). He came up with recommendations in two parts. The first part looked at the short falls of the concept note and he came up with the following recommendations:

- There was no logical framework matrix so as to ease up the monitoring and evaluation process
- Some of the financial institutions to be linked to the graduates had bad reputation such as Malawi Rural Development Fund
- There was no guarantee that all mentioned banks would be in a position to give out loans to graduates.
- The paper failed to pinpoint on ways of maximizing skills from the graduates
- The second part analyzed the situation on the ground and what to do to come up with successful program. The followings were the suggested recommendations:
- There was a need to restructure technical ,entrepreneurship vocational education and training (TEVET) system in Malawi
- There was a need to channel necessary resources to run the colleges smoothly as there was inadequate resources for the already existing technical colleges
- There was a need revamp technical subjects in secondary schools and also equipping public technical colleges with enough equipment
- Improving capital investment in technical education both in the secondary schools and public technical colleges
- Increasing support to the sector in general
- Mainstreaming vocational education into general education system such as reintroducing technical and vocational training in both primary and secondary schools
- Creation of an office in the Ministry of Labour to handle all issues related to TEVET.

Policy Recommendations

Based on the ease of doing business in Malawi website, the followings are the policy recommendations:

- A deliberate 3 year tax waiver on all business being established as a result of the initiative. This will make the businesses to become moderately established before being burdened by taxes. In turn this will assist in preventing start up business failures.
- Introduction of special fund for start- up capital so as to ensure that more entrepreneurship businesses are established. This special fund to be under the Ministry of Labour. A special position such as Principal Secretary can be created to oversee the disbursements of the funds in an accountable and transparency manner.
- Facilitating/easing cross border trade arrangements so that local as well as international markets will be readily available for the products produced. The creation of a special office in the Ministry of Trade can make this a reality. The Ministry of Labour to be responsible in bringing awareness of this facility. Currently, it is always difficult for an artisan to apply for foreign trade permit.

Conclusion

Community college initiative started as a political campaign promise some three or so years ago but now it is a reality as the youths are graduating with different entrepreneur skills and start their entrepreneurship journey. In the long run, this will eventually encourage innovativeness and will become a driving force behind the attainment of global competitiveness. Afriem (2015) concurred with the Government of Malawi by reporting that “Community Colleges: The only way to go for Malawi”. Indeed, the initiative seems to be the way forward in terms of high unemployment reduction. The initiative has been getting international recognition and backing. This is

an opportunity and the Malawi Government has to grab it so as to expand the initiative. This clearly indicates that there is a brighter future as far as the initiative is concerned.

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Financial Literacy Skills: The Catalyst for Entrepreneurial Sustenance

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Abstract

Entrepreneurs are accepted to be the back bone of every upcoming economy. They are the growth engines of both developed and developing economies. The quality of entrepreneurs moreover, decides about the economic status of the nation. In India too, entrepreneurship is being given attention increasingly. The projects like Start-up India, Make in India are targeted towards propelling economic growth of India. Rigorous efforts are directed towards motivating the young generation of India to set up their own enterprises. The government is equally keen in easing the norms of doing business. This all provides a promising picture for economic development of India. However, the percentage of entrepreneurial sickness in India cannot be ignored. Mere start up is not sufficient but sustenance of these enterprises should also be taken care of. Various studies have pointed out that entrepreneurial sickness is mainly caused due to financial indecisiveness. Studies have also shown that the level of financial skills and knowledge among the majority of people especially among young people, is low even in advanced societies (Jacob et al., 2000, p. 15). Thus, while money is one of the important issues of the human mind, most people are

unwilling to talk about it not because of the lack of interest but due to their poor knowledge in this field (Fox et al., 2005). In this regard financial literacy among the budding entrepreneurs can work wonders. This paper attempts to briefly review the importance of financial literacy and tries to identify it's role in entrepreneurial development.

Keywords: *Entrepreneurs, Economic Development, Financial Literacy.*

Introduction

Entrepreneurs are accepted to be the back bone of every upcoming economy. They are the growth engines of both developed and developing economies. The quality of entrepreneurs moreover, decides about the economic status of the nation. In India too, entrepreneurship is being given attention increasingly. The projects like Start-up India, Make in India are targeted towards propelling economic growth of India. Rigorous efforts are directed towards motivating the young generation of India to set up their own enterprises. The government is equally keen in easing the norms of doing business. This all provides a promising picture for economic development of India.

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However, the percentage of entrepreneurial sickness in India cannot be ignored. Mere start up is not sufficient but sustenance of these enterprises should also be taken care of. Various studies have pointed out that entrepreneurial sickness is mainly caused due to financial indecisiveness. Studies have also shown that the level of financial skills and knowledge among the majority of people especially among young people, is low even in advanced societies (Jacob et al., 2000, p. 15). Thus, while money is one of the important issues of the human mind, most people are unwilling to talk about it not because of the lack of interest but due to their poor knowledge in this field (Fox et al., 2005). In this regard financial literacy among the budding entrepreneurs can work wonders.

Entrepreneurship

As per the study on Entrepreneurship carried out by Knowledge Commission of India (2008) 'Entrepreneurship is the professional application of knowledge, skills and competencies and/or of monetizing a new idea, by an individual or a set of people by launching an enterprise *de novo* or diversifying from an existing one (distinct from seeking self employment as in a profession or trade), thus to pursue growth while generating wealth, employment and social good'.

Entrepreneurship is considered as a pivotal factor for innovation, production, competition, job creation and as a result it is an engine for economy development (Gjovig 2005, Van der Kuip and Verheul, 2003). It has been rightly stated that small is beautiful. In India too small businesses are representing the major workforce. Small enterprises play a significant role in the form of balanced and sustainable growth of the economy by way of employment generation, development of entrepreneurial skills and contribution to export earnings. These units produce a wide range of items employing traditional to state-of-the-art technology. As per the third census of MSME, the small enterprise segment of the Indian economy, has been contributing over 39% of the manufacturing sector output, 33% of the national exports and providing employment to nearly 312 lakh people through about 128 lakh units, located in both the rural and urban areas across the country. The fact cannot be denied that entrepreneurs and small and medium enterprises are the primary driving forces of economic development of India.

Growth of Small Enterprises in India

The micro, small and medium enterprises have witnessed phenomenal growth in recent years. The contribution of the small sector to the Indian economy has been of substantial nature. The growth of the MSME sector can be understood from the figures given below:

Table 1: Performance of MSMEs in Indian Economy

Year (Rs.Crore)	Total MSMEs	Employment (Nos. in lakhs)	Fixed Investment (Lakh persons)	Production (Rs. Crore) At Current Prices	Export (Rs. Crore)
2000-01	101.01	238.73	146845	261297	69797
2001-02	105.21	249.33	154349	282270	71244
2002-03	109.49	260.21	162317	314850	86013
2003-04	113.95	271.42	170219	364547	97644
2004-05	118.59	282.57	178699	429796	124417
2005-06	123.42	94.91	188113	497842	150242
2006-07	361.76 ^s	805.23 ^s	868543.79*	1351383.45*	NA

2007-08 [#]	377.37	842.23	917437.46	1435179.26	NA
2008-09 [#]	393.70	881.14	971407.49	1524234.83	NA
2009-10 [#]	410.82	922.19	1029331.46	1619355.53	NA
2010-11 [#]	428.77	965.69	1094893.42	1721553.42	NA
2011-12 [#]	447.43	1012.59	1176939.36	1834332.05	NA

Source: Annual Report of Ministry of MSME (2012-13)

Note: \$Including activities of wholesale/retail trade, legal, education & social services, hotel & restaurants, transports and storage & warehousing (except cold storage) for which data were extracted Economic Census 2005, Central Statistics Office, M/o SPI.

* Estimated on the basis of per enterprises value obtained from sample survey of unregistered sector for activities wholesale/retail trade, legal, education & social services, hotel & restaurants, transports and storage & warehousing(except cold storage) which were excluded from Fourth All India Census of MSME, unregistered sector

[#] Projected

Thus, the table no.1 above clearly shows the growth pattern of the MSMEs over last twelve years. The sector has contributed largely to the number of enterprises, employment and output of the country.

Sickness in Small Enterprises

Sickness in MSME sector is a cause of concern. The definition of sickness in MSME sector (erstwhile SSI Sector) has been undergoing changes over time. Reserve Bank of India (RBI) has appointed Committees from time to time to look in to this issue. Latest definition given by the Working Group on Rehabilitation of Sick Units set up by RBI (Kohli Committee) is given below as "A small scale industrial unit is considered as sick when if any of the borrowal accounts of the unit remains substandard for more than six months, i.e., principal or interest,

in respect of any of its borrowal accounts has remained overdue for a period exceeding one year will remain unchanged even if the present period for classification of an account as substandard is reduced in due course; OR

There is erosion in the net worth due to accumulated losses to the extent of 50 per cent of its net worth during the previous accounting year, and The unit has been in commercial production for at least two years"

The extent of sickness in the MSME segment can be understood from the figures given in table no.2 below.

The below tables shows number of sick small scale and media scale enterprises in India and the amount of outstanding against them in the books of commercial banks for the period 2006- 2015.

Table 2: Sickness in SSI/MSEs for Period 2006-2015

Year	Sick SSI/MSE	
	Units	Amt. Outstanding (in Billions)
2006	126824	49.81
2007	114132	52.67
2008	85187	30.82
2009	103996	36.19
2010	77723	52.33
2011	90141	52.11
2012	85591	67.90
2013	220492	124.42
2014	465492	263.31
2015	528300	253.88

Source: RBI Handbook of Statistics on the Indian Economy

The figures in table no. 2 show the extent of sick units and also the amount left unpaid by these units. It is understood that the number of sick units has more than doubled in a span of ten years with more than five lakhs of SSIs and MSEs being sick in India as in 2015. The amount outstanding with these sick units is also enormous being at 253.88 billions. This indicates the urgent need to address the problem of sickness.

Causes of Sickness

Several internal and external factors have put considerable pressure on the performance of

the SSIs, resulting in a number of them becoming sick. A lot of studies have been carried out regarding causes of sickness in smaller business units. It need be noted here that the inherent nature of the small businesses makes them vulnerable and prone to even very light shocks. An insignificant change may create a significant disturbance for this segment. A variety of causes have been enlisted time and again like lack of credit, lack of managerial skills, non-conducive business environment, lack of infrastructure, fierce competition etc.

The Fourth Census of Small Enterprises, conducted by Ministry of MSME in 2006-07, identified the following reasons for sickness.

Table 3: Reasons for Sickness in MSMEs

Sr. No.	Reason for sickness	Proportion of sick/incipient sick units*
1	Lack of demand	41.94
2	Shortage of working capital	20.49
3	Non-availability of raw material	5.11
4	Power shortage	5.71
5	Labour problems	5.64
6	Marketing problems	11.48
7	Equipment problems	3.17
8	Management problems	6.46

Source: Fourth Census of Small Enterprises (2006-07)

* The total in column will exceed 100 %, as some units have reported more than one reason.

It can be clearly observed from the above given table that the major cause of sickness in small businesses is lack of demand and shortage of working capital. In fact financial issues are reported as the main causes of business leaving in SMEs (GEM, 2010, p.38). Lack of financial know-how is observed to be one of the common ailments of entrepreneurs. Hence it seems to be obvious that these entrepreneurs are unable to manage their funds properly. Financial illiteracy leads to bad financial decisions. This may be one of the causes of poor working capital management.

Indian entrepreneurial segment is now witnessing the wave of start-ups. Majority of

young talent is diverted in this sector. Research findings have clearly indicated lack of financial knowledge among youngsters. Keeping in view the extent of start-ups being promoted in India, it is necessary to examine whether these start-ups are capable of making proper financial decisions. Business failures affect the entrepreneur not only in terms of economic downfall but also psychological collapse. In addition to financial and emotional problems, the failed entrepreneurs usually have broken family relationships and also they have extreme anger to the community, competitors and debtors (Shepherd, 2003). This clearly indicates the need and importance of financial education for entrepreneurial effectiveness.

Financial Education

Lack of financial education is pointed out to be one of the important causes for the inappropriate financial flows to the entrepreneurial segment in India. It now becomes necessary to understand the meaning of financial education.

OECD defines Financial education as “the process by which financial consumers/investors improve their understanding of financial products, concepts and risks and, through information, instruction and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being”.

Need of Financial Education for Entrepreneurs

Over the years much has been discussed about literacy levels of population in India. One of the major economic problems India was struggling against was that of illiteracy. In the early decade of ninety this focus shifted from illiteracy to computer literacy. However, now the economic fluctuations across economies have compelled to focus on financial education thus providing financial literacy.

Financial literacy not only provides an individual with the necessary understanding of financial products but also equips him with the implications of various financial decisions over both short and long periods of time. This in turn provides for sound financial decision making.

Financial literacy is mainly discussed in context of the individuals with limited resources and for them efficient use of the financial resources is of prime necessity. This is the situation in which a typical entrepreneur has to struggle to survive. Entrepreneurs with huge resources are a rare phenomenon. Obviously for the entrepreneurs to be successful the know-how of efficient utilization of scarce resources is a

must. Financial problems are the major hurdle faced by small and medium enterprises largely. Hence for entrepreneurial success financial literacy is very important. With necessary financial education the entrepreneurs shall be in a better position to make appropriate financial choices. It will further equip them with better decision making regarding financial issues which in turn shall add to their financial viability. This obviously will reduce the extent of sickness in this segment.

Conclusion

Thus, from the discussions stated above it can be clearly concluded that entrepreneurs are an important pillar for the economic growth of any nation. Business sustenance is largely influenced by financial management. However, studies point out that one out of five sick units have been unable to manage their working capital. To overcome such financial bottlenecks it is necessary to identify the root causes. Lack of financial education and financial literacy is at the root of inappropriate financial flows. Hence the new breed of entrepreneurs should be equipped with adequate financial knowledge and financial literacy skills.

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Role of Technology in Development of Alternative Finance in India: A Discussion

Niyati Dave*

Abstract

A candid reflection into the current financial system will make a realization that Traditional corporate finance just isn't equipped to handle a fast-paced, interconnected world. Not being negative about the Indian financial services but technology has to be incremental in standing at par with the young companies requirements. Development of entrepreneurial culture and ecosystem must not negate the tech supported alternative sources of finance. Banks are becoming tech savvy however at the time due to the increased amount of risk which these young companies carry they are reluctant to back the finance requirement. Focusing on the basket of alternative finance sources like crowdfunding peer to peer lending angel investment, policy makers can provide the levee to the tech hungry startups and thus take the startup ecosystem on a strong footing.

Researcher in the paper has reviewed and revisited the alternative sources of funds growing in India along with some already established sources in developed financial economies and its feasibility in India. India is the emerging as entrepreneurship and financial markets are developing and changing in evolutionary if not revolutionary manner. Keeping technology as the focus, researcher revolves around the options and sources of

alternative finance, its pros cons and feasibility in India. The paper has been divided into two part first is capital availing and other is payment. Capital availing includes crowd funding and P2P lending and payment includes the Mobile wallet.

Keywords: Fintech, Crowdfunding, P2P, Mobile wallet.

Introduction

Finance has been a major pain point for any business. With a startup ecosystem so developing, we as a nation need to establish a fintech environment that facilitates quick, reliable and accessible finance. We can look upon developed countries with profound financial structure and alternative finance options but one thing is resilient and that is the direction of travel has to be towards a much more diverse financing landscape in the future.

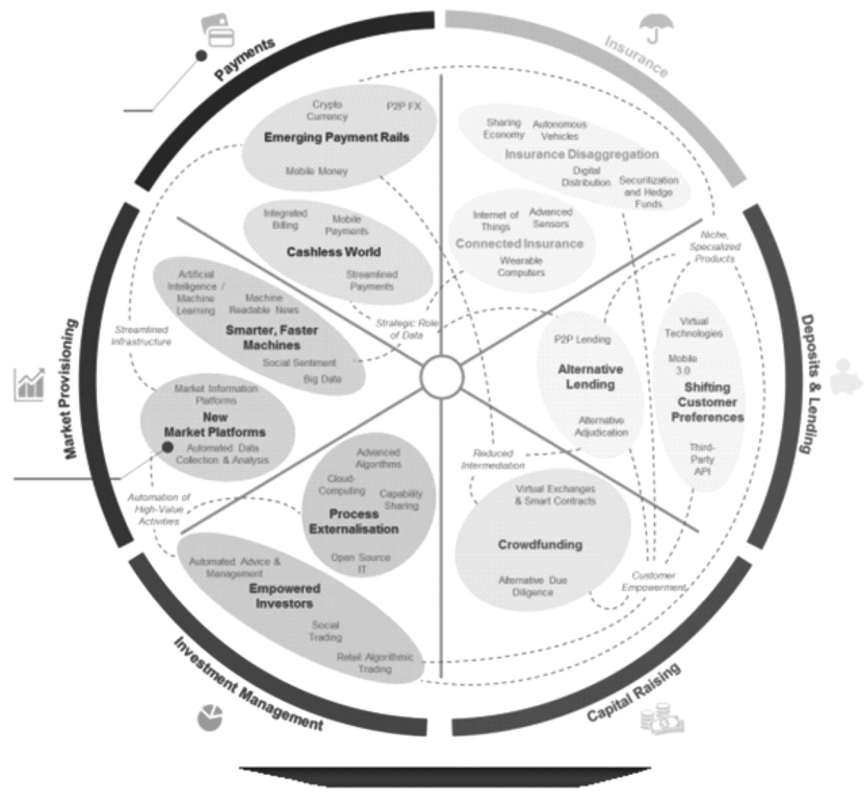
It is not fair to say that alternative sources of finance will magically solve all the issues which traditional source of finance cannot but it will complement the existing traditional source of finance. Said so the question arises- are there alternative channels through which firms can raise capital to fund investment before a well-functioning, traditional financial system that

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is already built? To answer this we first need to categorize the requirements of the firm. Broadly it can be headed under growth capital and working capital. For entrepreneur growth capital may be higher concerned and for already existing business working capital may be of higher concern. Both of these requirements can be catered to by alternative financing methods. Defining alternative financing is important here. Alternative financing channels are defined as all the nonmarket, non-bank sources, including internal finance (e.g., retained earnings) and alternative, external finance (Stiglitz, 1989). Crowdfunding and peer to peer funding have emerged as a source of alternative finance in India for growth capital whereas mobile wallets have emerged as a working capital and payment method.

The shift in the financial services in terms of content and process, with and depth is required. The technology is giving rise to new financial services as well as the way finance is availed, invested and disseminated. World Economic Forum in an industry project has classified the financial services in 6 broad areas. The following figure identifies six core functions that comprise financial services:

- Payments
- Market Provisioning
- Investment Management
- Insurance
- Deposits & Lending
- Capital Raising



Source: An Industry Project of the Financial Services Community, World Economic forum, 2015

Very simply it is innovation centered around various financial instruments that looks to simplify the borrowing and lending process and help businesses in their financial goals.

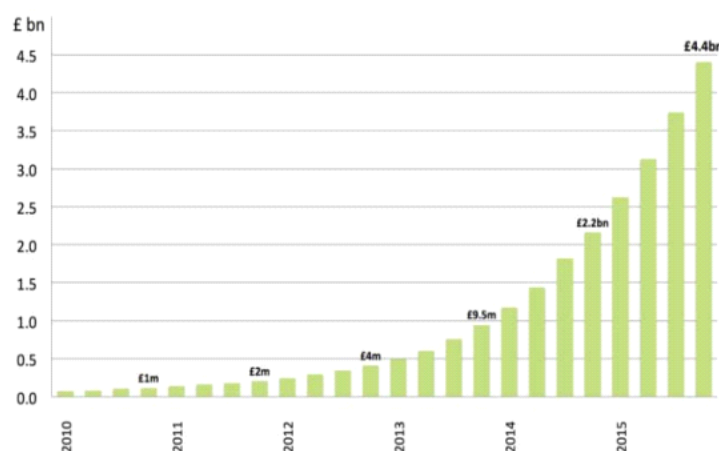
Alternative sources of funding became very popular, especially after the financial crisis in 2008 resulted in failure of number of Banks and stringent Basel III Capital adequacy norms

being made applicable. Banks have stopped lending to ventures and individuals they consider risky and as a result a large number of the population fell outside the traditional channels of finance.

Peer to Peer lending (P2P)

Today there are online platforms that match

borrowers directly with investors. This is called peer to peer lending. This is becoming popular due to low interest rate simplified application process and quick lending decision. P2P is predominantly online portal where institutions and individual lenders provide funding to people seeking loan. The following data shows the growth of peer to peer lending in UK undertaken by major players.



Source: <https://rbidocs.rbi.org.in/rdocs/content/pdfs/CPERR280416.pdf>

Knitting Technology and Peer to Peer Lending

The location of lender and borrower should be known because this may lead to international borrowing and lending. No policy has been framed about this kind of lending and thus some framework must be taken into consideration. There is no collateral the portal itself may have set up where in they check on the reliability of the lender and the borrower and then proceed as to deciding the rate of interest.

Further the rate of interest can vary in any range and that would make it beyond the norms of RBI and inturn the BASEL III norms. In this situation there would be no need for regulation on rates and this can affect the economy in terms of bad debts and NPA

Implications

A proper technology system should be built so that there is transparency in operations, adequate measures for data confidentiality and minimum disclosures to borrowers and lenders would also be mandated through a fair practices code. With the advent of technology the confidentiality of data has been a major concern. Confidentiality of the customer data and data security may be the responsibility of the Platform.

P2P lending platforms may be prohibited from promising or suggesting a promise of extraordinary returns, which implies some form of guarantee of returns to lenders. Some platforms do perform the role of a recovery agent for recovery of loans on behalf of lenders. The current regulations applicable to other NBFCs can be made applicable to the P2P

platforms in regard to recovery practice. The operators may also be mandated to have a proper grievance redress mechanism to deal with complaints from both lenders and borrowers and require reporting to the Board.

Crowd Funding

Crowdfunding is the pooling of resources by a group of people for a common goal. Crowdfunding is not new to India. There are many instances of organisations reaching out to common people for funding. However, the emergence of platforms that promote crowdfunding is fairly recent to India. These platforms help start-ups or small businesses meet their funding requirements. Currently, no crowdfunding regulation exists in India, but the Securities and Exchange Board of India (SEBI) released a consultation paper last year where it spoke about need for regulation.

Knitting Technology and Crowd Funding

SEBI in its consulting paper has defined it as:

‘Crowdfunding is solicitation of funds (small amount) from multiple investors through a web-based platform or social networking site for a specific project, business venture or social cause.’

SEBI in its consulting paper has also defined it as:

‘Crowd sourced funding is a means of raising money for a creative project (for instance, music, film, book publication), a benevolent or public-interest cause (for instance, a community based social or co-operative initiative) or a business venture, through small financial contributions from persons who may number in the hundreds or thousands. Those contributions are sought through an online crowd-funding platform, while the offer may also be promoted through social media.

If we club the definitions offered by the regulatory body we can see it is specifically

inclusive of technology with forms the heart of crowdfunding. Crowding essentially requires you to give money to an idea/project/product which you can relate to and wish to contribute. Videos are prepared and using mobile technology/internet/social media they are circulated and people can offer finance. This requires the crowdfunding platform to make arrangements for the online payment of finance/equity and keep it accumulated till the entire desired amount is collected and then transferred to the entrepreneur after crowdfunding platform has deducted the fees. It thus help the entrepreneur to reduce their time to avail seed fund and relying on single person/bank for the same.

After knowing the process, the following things needs to be taken care of

- Net Banking/M Banking and other such forms of payment should be made available
- Active participation in social media
- Payment portal

Thus a closer look at the process will reveal that crowdfunding as a source will largely depend on technology and also the fact that it has actively emerged due to technology.

Implications

The lender has no personal rapport with the entrepreneur so more credit rating of the firm or individual in case of project should be tightened otherwise investors' money would be lost. This would not make the source sustainable. Either the crowdfunding platform has to shoulder the responsibility of governing the investors' money by framing some mechanism or can tie up with platforms like CreditMantri who certifies a person's reliability and credibility based on which lenders can lend.

SEBI as a regulator will have to frame policies for crowdfunding at a speeded pace as the market is raising but no structure has been framed as of yet. But at policy level the infrastructure's role is already assumed to be functional.

Mobile Wallet

Paytm is a household name now and many others have followed in the mobile wallet category like Airtel Money, mRupee, Vodafone m-Pesa, Oxigen Wallet, Mobikwik and Idea Money (VMSI). Market of m-wallet segment includes transferring of money, services related to banking transactions, value added services such as shopping, ticketing, recharging, and bill payments. Mobile Payments in India is estimated to grow from \$86 million in 2011 to \$1.15 billion in 2016, with a compound annual growth rate (CAGR) of 68%¹. With these facts and figure it is evident that in coming days mobile wallets and payments through them is going to capture a huge market and technology again will be the enabling factor.

Knitting Technology and Mobile Wallets

Tapping into the untapped market – According to data from Reserve Bank of India (RBI), India is the home to largest number of unbanked families (more than 145 million). Potentially one of the largest bases to capitalize on. This can big time supplement the financial inclusion in India the reason being mobiles have now penetrated in the remotest village and the right technology infrastructure will help people connect formal financial system. It will provide a focus on providing merchants with Multichannel Payment Services.

Mobile wallets are also utilized in remittances – thus technology would be used to transfer wealth from one country to another. Data which is now going to be a major game changer for any business will also be due to infusion of technology. Analytics solutions – Payments Transaction Data Analytics will be a major source of payments-related revenue. Payment will now be through wallets using NFC, tokenization, biometrics – Because Mobile devices will be a mainstream option for person-to-person or person-to-business payments. Is out current technology infrastructure ready to support that? The technology must invariably be equipped with proper cyber security and laws in order to address the issues which may arise.

Implications

Financial institutions may lose control over their customers' transaction experience as payments become more integrated. And thus their point of contact may only be via effective use of technology. Winning issuers will be able to gain visibility into more of customers' spending patterns, build more holistic understanding of customers, and create more competitive offerings

As more efficient alternative rails are adopted, the role of traditional intermediaries as a trusted party may diminish. Financial institutions may face a new set of risks (e.g., reputation, security) and regulatory issues as they participate in new rails. Applications of these technologies can expand beyond money transfer to modernise other financial infrastructures. The physical or E or M money will be replaced by cryptocurrencies like Bitcoin, Litecoin etc. Is the current market mature enough to transact on these currencies. We do not have any policies pertaining to the technology born currencies. RBI as of now has refrained from adopting such forms of currencies. That again would be debateable.

Barcoding of the app based payment can be done. Bar code and cloud based solutions will rapidly evolve, particularly if a more open and reasonable path to Near Field Communication (NFC) doesn't surface in the short-term. The challenge is that bar codes are certified by the big payment networks, so open loop use is a challenge," he said. "That's where cloud-based wallet solutions may be able to gain hold, working around the NFC ecosystem obstacles completely.

Conclusion

A long way has yet to be covered in the form of technological development in financial market. Developed markets like UK and Us have been adopting instruments like Online invoice trading platform where in a business applies online as a 'seller' and, after approval by the platform, selects invoices that it wishes to raise

finance against A pool of investors bid to advance funds against the invoice, with the best bids ensuring a competitive rate Funds are advanced into the businesses account, usually within 48 hours of uploading the invoice When the business' customer pays the invoice, the business refunds the investor with the advance plus fees. Thus such innovative fintech blends must also be practised in Indian market

With the advent of technology, the world seems to be shrinking and so have the dynamics of communication, transactions and contractual understandings changing. The following themes may be cross functionally applicable and touching multiple cluster of innovation from Growth and working:

- Streamlined Infrastructure- Emerging platforms and decentralised technologies provide new ways to aggregate and analyse information, improving connectivity and reducing the marginal costs of accessing information and participating in financial activities
- Niche/specialized Product- New entrants with deep specialisations are creating highly targeted products and services, increasing competition in these areas and creating pressure for the traditional end-to-end financial services model to unbundle
- Reduced Intermediation- Emerging innovations are streamlining or eliminating traditional institutions' role as intermediaries, and offering lower prices and / or higher returns to customers
- Automation of High-Value Activities- Many emerging innovations leverage advanced algorithms and computing power to automate activities that were once highly manual, allowing them to offer cheaper,

faster, and more scalable alternative products and services

- The Strategic Role of Data- Emerging innovations allow financial institutions to access new data sets, such as social data, that enable new ways of understanding customers and markets
- Customer Empowerment- Emerging innovations give customers access to previously restricted assets and services, more visibility into products, and control over choices, as well as the tools to become "prosumers".

Analytics solutions and Payments Transaction Data Analytics will be a major source of payments-related revenue. All the firms are going to be valued on the basis of the data they have which can be utilized in future. Data is going to be the asset may be not shown in balance sheet but carrying a lot of value with it. No of users, subscribers, downloaders will be the items looked upon. Thus, technological positively seen will change the face of finance and financial services but critically looked at will wipe off many systems, processes and organizations if not attended timely.

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