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From the desk of the Editor-in-Chief

The COVID-19 pandemic has resulted in unprecedented turmoil around the globe. Every sector, every human, every non-human is affected badly.

The first cases of what is now recognized as SARS-CoV-2 infection, termed COVID-19, were reported in Wuhan, China in December 2019 as cases of fatal pneumonia. By the end of December 2020 there were over 79 million reported cases around the globe and over 1.7 million deaths globally since the start of the pandemic.

The impact on research in progress prior to pandemic was rapid, dramatic, and no doubt will be long term but as we all say every eventuality brings opportunities. During these toughest times also, we could get some good research articles for the issue. We are thankful to the contributors.

This shall pass too….

Sanjeev Bansal

From the desk of the Editor

Ever since the dawn of civilization, humans have been inclined towards knowledge and the quest to seek the truths that govern the way our world, our societies and our very own bodies organize, coordinate and work. This journey that we have embarked on this ever changing world wouldn't be possible without research, its findings and its proper documentation.

Medicine and medical education especially wouldn't be anywhere near as advanced as it is now if it weren't for the works of great thinkers and researchers of the past and present. I believe it is now up to us, the medical educators, practitioners and students to continue this expansion of knowledge and seek new and innovative ways to understand medicine through research and documentation.

Since inception of the civilization, human being was quest to seek the information through knowledge. Pertaining to the certain tools and methodology that include and used in the study was their prime concern. This journey of human civilization would not be possible without the research.

We are elated to inform you that all the issues of Amity Business Review (ABR) has been contributing tremendously to enhance quality of research and education in area of management and allied fields since its inception. ABR is dedicated to the swift propagation of quality research in area of Management and Management Technology to confront the challenges of 21st century.

We welcome the researchers across the globe for their intellectual contribution and promise them to maintain the value based relation with them in terms of research in times to come.

My best wishes.

Smrita Sinha

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ARTICLES

Prevalence of Mental Accounting in Financial Decisions: A Literature Survey

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ABSTRACT

Mental accounting refers to the varying values a person places on the same amount based on subjective criteria, often with harmful consequences. Mental accounting is a concept in the field of behavioral economics. It argues that individuals classify funds differently and are therefore prone to making irrational decisions in their spending and investing behavior. The concept of mental accounting as a concept in behavioral economics was introduced in 1999 by Nobel Prize-winning economist Richard Thaler. Mental accounting often leads people to make irrational investment decisions and behave in financially vindictive or harmful ways, such as financing a low-interest savings account while carrying a large credit card balance. Mental accounting can be problematic when one begins to be irrational with their separation heuristics. Since one cannot completely get rid of mentally categorizing money into different buckets even though such classifications are helpful to a certain extent, one should always keep an open mind and regularly follow up his overall portfolio performance..

Keywords: *Behavioral Finance, Investor Bias, Mental Accounting, Capital Market, Investment Decisions*

INTRODUCTION

Richard Thaler, currently a professor of economics at the Chicago Booth School of Business, introduced mental accounting in his 1999 paper "Mental Accounting Matters" which was published in the Journal of Behavioral Decision Making. He begins with this definition: "Mental accounting is the set of cognitive functions used by individuals and families to organize, evaluate, and track financial activities." The paper is full of details on how mental accounting leads to irrational spending and investing behaviour. Modern economic theory is largely based on sensible and objective consumer decisions. However, studies have shown that mental accounting colors the process of choosing and

making decisions about investment options. Mental accounting is the process of compartmentalizing various investments or expenses, looking at different compartments as separate and unrelated to others. For example, if a person buys a latte for Rs. 250 and accidentally spreads it, he will be highly resistant to buying another one, but he will have no problem buying Rs. 250 of gasoline. Although the dollar amount of purchases will be the same, buying more coffee for Rs. 250 seems wasteful to the consumer, but it is acceptable for him to buy Rs. 250 worth of gasoline.

Consumers engage in mental accounting based on purely subjective reasons, such as the intent of each account or the sources of funds. Some people save the money they earn, attributing greater value to it, but they simply spend the money they get from others, considering it an extra treat. Broken down further, it is (and, indeed, harmful) to maintain a savings jar that earns little or no interest while holding credit-card debt that earns double-digit figures annually. In many cases, the interest on this loan will wipe out any interest you might earn in a savings account. In this scenario it would be best for the individual to use the funds that he has saved in the particular account, to pay off the costly debt before he accumulates any debt. Individuals do not realize this mental accounting line of feeling, but in fact it is highly illogical. For example, some people set aside a special "money jar" or similar fund for a vacation or new home, while at the same time carrying substantial credit card debt. They are trying to treat the money in this particular fund differently from the money that is being used to pay off debt, despite the fact that taking money out of the loan repayment process increases interest payments, thereby reducing their overall net worth.

A common example of mental accounting is when people set aside a certain amount of money specifically for the purpose of investing in riskier securities or asset classes. Investors usually refer to this money as "money you can lose". Now from the outset, this difference makes some sense by investing a certain amount in risky assets, the loss of which will not really affect your long-term financial goals, however, if we look closely, we can understand that this difference is not really real. At the end of the day, it is a mentally made difference because in essence, all money is equal. Mental accounting can significantly affect investing and banking. For example, investors may spend a lot of time and effort maintaining two portfolios, one for "safe" investments and one for risky investments. In fact, the risk is the same whether the accounts are independent or together. Holding the two types of investments in a single portfolio allows an investor to more effectively balance the goals of reducing risk and improving returns.

Economists agree that money is interchangeable regardless of origin or purpose. Money received as a gift or from a tax refund is no different from earned money. Keeping a low-interest savings account to get rid of outstanding debt can enhance a more economic outlook. Increasing awareness of the impact of mental accounting through the

study of behavioral finance can help consumers explicitly rid themselves of the reckless spending of "found" money and irrational buying and investment decisions. Put it this way, the solution to this problem seems straightforward. However, not many people behave this way. The reason for this has to do with the type of personal value that individuals place on a particular asset. For example, many people feel that it is simply "too important" to forgo money saved for a new home or child's college fund, even though doing so may be the most logical and profitable move. Hence the practice of maintaining money in the account with little or no interest even when taking out outstanding loans is common.

Mental Accounting-Mathematical Framework

In mental accounting doctrine, the term framing refers to the manner in which a person prepares a transaction subjectively in his brain to lay down the utility that is received or expected by them. This notion is accordingly practiced in probability theory, and many mental accounting theorists devour that principle as a value function in analysis conducted by them. It is significant to notify that the price function for profit is concave (meaning risk aversion) while for loss it is convex (meaning a risk-seeking attitude). This definitely affects the manner in which investors appraise financial transactions.

Given such a structure, the question arises as to how do investors decode and take account of various transactions/results **(a, b)**. For this the investors can either observe the results compositely **[Value (a+b)]** and in such a case the results are unified **[Value (a) + Value (b)]**, or they can look at the results are discrete. Owing to the nature of the varied slopes of the value function for profit and loss, the utility reaches its maximum point in multiple ways, depending on the manner in which the following four categories of transactions are coded in the form of profit or loss:

1) Multiple Profits: Here, both **a** and **b** are regarded as profit. It is observed that **Value (a) + Value (b) > Value (a+b)**. Therefore, our attempt is to separate multiple profits.

2) Multiple Losses: Here, both **a** and **b** are regarded as losses. It is observed that **Value (-a) + Value (-b) < Value (-(a+b))**. Therefore, our attempt is to unify multiple losses.

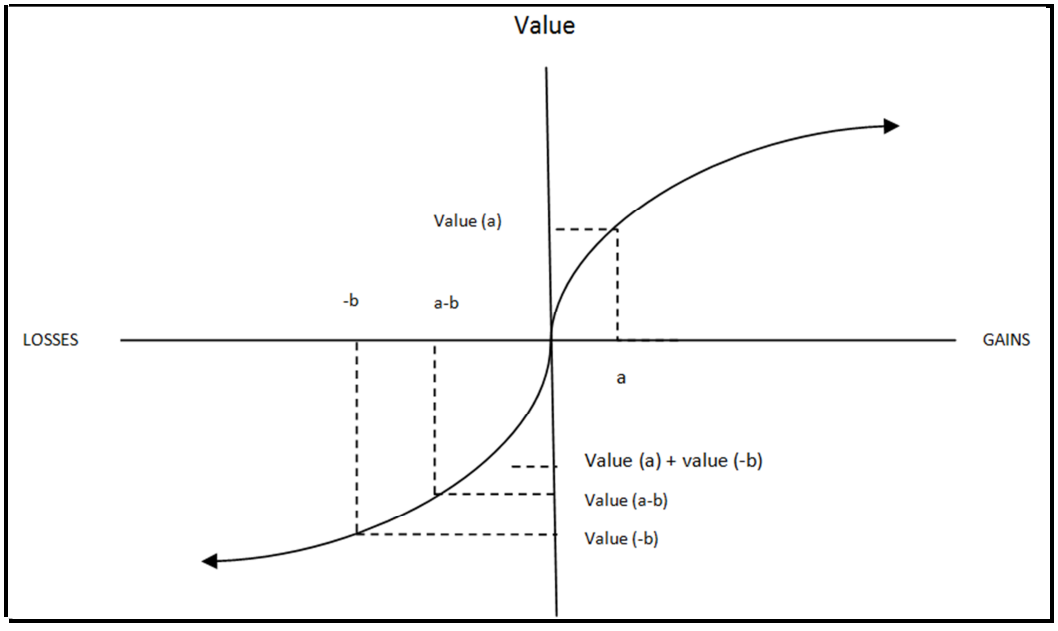
3) Mixed Profit: One of **a** and **b** is a profit and other is a loss, although the profit is larger among the two. Under such a situation, **Value (a) + Value (-b) < Value (a-b)**. Therefore, utility reaches its maximum point when mixed profits are unified.

4) Mixed Loss: In this case also one among **a** and **b** represents profit and the other one indicates loss, although the loss is now much larger than the profit. Under this situation, **Value (a) + Value (-b) > Value (a-b)**. Distinctly, it is not intended to integrate a compounded loss when the loss is much larger in comparison to the profit. This is what is referred to as the "silver lining", a context to the age old proverb "every cloud has a silver lining".

In case when the loss is just marginally larger than the profit, consolidation should be given preference.

Clearly, the manner in which the two results are seen i.e. the manner in which it is accounted for, can affect the degree of positivity or negativity with which they are seen.

Exhibit 1.1: Graphical Presentation of the "Silver Lining" denoting greater value obtained from separate results



Yet another significant notion which is used to comprehend mental accounting in investment is called the modified utility function. This concept states that there are two forms of values associated with any transaction. The first is called as acquisition value and the second is called as transaction value. Acquisition value is defined as the sum of money that an investor is intending to part with in order to obtain something materially good. On the other hand, Transaction value is the price that is associated to make a fair deal. If the price that an investor is being charged with is equivalent to the mental reference value of the commodity, then the transaction value can be designated as zero. Moreover, if the price is less than the reference price then the transaction utility can be called positive. The total utility derived from the transaction is the sum of the acquisition utility and the transaction utility.

Mental Accounting – Literature Survey

Seiler and Lane (2010) state that mental accounting is said to be present when an investor's willingness to sell differs when considering the asset in isolation versus the willingness to sell as part of an overall portfolio. The authors demonstrate that investors within their sample do experience

significant levels of mental accounting. The results demonstrate that mental accounting is commonplace amongst investors investing in real estate business. ***Zhang and Sussman (2017)*** highlight the role mental accounting can play in influencing financial decision-making in various settings and the potential benefits and pitfalls that can occur as a result, establishing a direct link between mental accounting and economic outcomes, particularly in the long-term, remains an ongoing challenge. ***Rockenbach (2002)*** put forth an experiment that adds further evidence that supports the importance of mental accounting in financial decision making. Its novelty lies in showing the relevance of mental accounting in an option pricing environment. It also explains that mental accounting is not a phenomenon of individual decisions alone, but can also be found in the decisions of institutional investors. ***Okada (2001)*** provides a theoretical explanation to confirm that when applied appropriately, mental accounting can serve a useful purpose to the utility-maximizing consumer in the long run, but when misapplied, it results in a misallocation of resources that does not add any value from the perspective of utility maximization. ***Mascarenas and Yan (2017)*** have tried to analyze the relationship between investors' mental accounting and investment portfolio design from psychological and financial perspectives and concluded that mental accounting is useful in investment markets and it is worth undertaking further studies and discussions in the future.

Olsen et al. (2019) reveal inter individual differences in mental accounting practices among self-employed business owners. They find that individuals who score high on mental accounting state that they perceive taxes as separate from their business turnover and indicate to put aside sufficient funds for future tax payments. Individuals who score lower on mental accounting perceive taxes as part of their business turnover to a stronger degree. Despite significant mean differences, we find that mental accounting scores for income tax and VAT are strongly related. ***Ozkan and Ozkan (2019)*** have pointed out that when it comes to investing with mental accounting, decisions made are wrong and carries a risk of damage although attention is paid whether each option's cost price is at profit or loss. In addition, in the mental accounting decision process, accounting and management accounting in general are associated with financial accounting and tax accounting, both affecting them and being affected by them. ***Anolam et al. (2015)*** have conducted a study which focuses on examining the extent to which the components of mental accounting affect the performance (profitability) of corporate organizations. It is therefore pertinent to note that the primary reason for studying mental accounting is to enhance our understanding of the psychology of choice. Moreover cost-benefit analysis is indispensable amid mental accounting practices to ensure that risks are adequately matched against associated returns. ***Salman et al. (2021)*** present the idea that despite a wide literature on mental accounting in developed economies, very inadequate research exists when it comes to the influence of mental

accounting. Consequently, their research results expanded that individual stock investors always focus on accounting matters when doing stock investment decisions. These findings show that the stock investors in terms of mental accounting are improved by risk tolerance. ***Chen and Tong (2013)*** are of the opinion that debt aversion is a result of mental accounting rather than a separate behavioral effect. The study demonstrates that indeed their observations are not solely driven by the actual debt position over time, but how the individual mentally processes the payments over time. The authors also urge to estimate the impact of mental accounting empirically.

Exhibit 1.2: Literature survey on the impact of mental accounting on financial issues

S.No.	Financial Issues	Number of Literature
1	Stock Market Investment	25
2	Consumer Borrowing	18
3	Budgeting Decisions	07
4	Taxation and Audit	06
5	Corporate Profitability	06
6	Financial Reporting	03
7	Capital Budgeting Decisions	02
8	Real Estate Investment	02
9	Retirement Planning	02
10	Insurance	01
	Total	**72**

Shams et al. (2006) offer conclusion that Mental accounting of the investors affect their mental predictions on the stock prices, leading to the deviation between the current stock price and its inherent value which is of a great opportunity for the speculators in a way that the efficiency of the market would become under question. Under such circumstances, market makers and experts can be of their greatest value in reducing the effect of the mental accounting on the inefficiency of the market. ***Mahapatra and Mishra (2020)*** have expressed that there are sufficient evidences to support the existence of a mental accounting system among Indian households. The study has established the existence of mental accounting in different financial choices in two ways. The current study replicates the use of reference points in mental accounting theory in the Indian context. The four concepts of segregation and integration of gains and losses have shown clear evidence of the mental accounting system among Indian households. ***Novandalina et al. (2022)*** have concluded that mental accounting fails to

influence investment decisions. This is supported by the fact that the majority of SME managers of MSME businesses are businesses that have been passed down from generation to generation and have strong experience in the industry so they do not need accounting considerations in deciding investment financing, but prioritize intuition and habits and trust in goods sellers. ***Angle et al. (2019)*** have opined that mental accounting gets its name from the cognizance that individuals generally incline towards having mental buckets for different productive purposes. When we create such mental buckets, it has certain damaging consequences on our finances. Mental accounting in turn results to a sort of financial inflexibility, which is generally the ability to adjust or goals based on new financial information. ***Konstantinidis and Katarachia (2015)*** have conducted a theoretical research implying that the impact of mental accounting on people who work and invest in financial sectors will be a fundamental tool to address irrational investment behavior and restore rationality. Mental accounting causes investors' irrationality and non-rational investment decision making.

Muehlbacher et al. (2017) argued that keeping a mental account dedicated to taxes would lead to employing expected net income as a reference point in the compliance decision and consequently would lead to higher tax compliance. Further, as per the study mental accounting seems to prevent bankruptcy; participants without a mental tax account were prone to spend more than their net income for private consumption and consequently faced liquidity problems when taxes had to be paid. The findings show the relevance of mental accounting for tax compliance of self-employed taxpayers. ***Kresnawati et al. (2019)*** have concluded that the development of mental accounting theory, which is in the context of the participant and the background of the participant, is very important to consider when testing this theory. This study examines the argument of mental accounting theory that individuals will behave differently in treating money. ***Lee et al. (2017)*** have stated that the difference in the various aspects of mental accounting according to the portfolio type is expected to contribute to understanding of the mental accounting system. At a more practical level, the existence of mental accounting should be acknowledged in any particular household's consumption expenditure and individualized financial planning. ***Xie (2019)*** has given the idea that irrational online shopping behavior of an excessive consumption, impulsive consumption and bundled consumption under the influence of mental accounting, and further discusses the internal mechanism of irrational online shopping behavior from the perspective of mental accounting theory. This paper has contributed further understanding of the way in which online consumer behavior can be influenced by mental accounting, and ultimately has an impact upon purchasing intentions. ***Momen et al. (2018)*** have developed a Collective Mental Accounting (CMA) portfolio selection model, which can be seen as a generalization of mental accounting models. The results show that although both mental accounting and collective mental accounting portfolios are

mean-variance efficient and they lie on the efficient frontier. These results show that although both mental accounting and collective mental accounting portfolios are mean-variance efficient and they lie on the efficient frontier.

Nuriyev and Azizov (2019) have concluded that all individuals can make a right or wrong decision on financial issues due to signals formulated on their brain. The research examined the influence of risk tolerance of people, making gain or loss on human behaviour from the mental accounting point of view. It was found that, the social status, education level, and some other factors have a positive correlation between the emotions created in their brain and behaviour of people while making financial decision. ***Aggarwal and Liu (2012)*** propose that the application of the principles of mental accounting to customer-brand relationships is not just appropriate and interesting but that it can also be used to generate a wide variety of hypotheses that would lead to some very insightful findings about consumer behavior. Specific tactics on cost cutting, brand positioning, brand extensions, brand equity, as well as on how best to handle instances of perceived brand transgressions all emanate directly out of seeing consumer-brand relationships through the mental accounting lens. ***Jain and Prakash (2015)*** are of the view that in the market individuals with different education level differ in their mental accounting with respect to hedging for gold and individuals with different income levels differ in their mental accounting with respect to invest decision in gold. The results help in understanding how to approach investors in order to have a win-win situation. ***Pannequin et al. (2014)*** address the issue of simultaneous demand for insurance and self-insurance. It investigates the interplay between insurance and self-insurance demands as well as their sensitivity to insurance prices. Experimental results partly support theoretical predictions but they also shed light on a strong and robust behavioral heuristic of mental accounting of losses. ***Saberi et al. (2020)*** have tried to present an optimal portfolio model in the field of bubble speculation based on mental accounting. The study makes an evaluation of the speculative portfolio of hypothetical portfolio based on mental accounting and stock exchange. The study concluded that Speculation based on mental accounting is less than portfolios without speculation bubble based on mental accounting.

CONCLUSION AND DISCUSSION

In practice there is no doubt with regard to the fact that mental accounting causes investors to treat money received from different sources differently. Individuals might feel the urge to spend the inherited money faster than the money earned as a salary and encourages individuals to spend money on useless things and activities. It encourages individuals to keep too much money as a cash emergency instead of investing the same or using the same to repay high-interest debts and results in financial inflexibility where individuals cannot realize and adjust their goals and budgets based on updated financial information.

Yet it can help an investor meet investment-related goals when a certain amount of money is invested in a retirement account, that money cannot be used by the account holder for spending purposes. In this way, they can skip unnecessary expenditures and save the same money for the future. It helps in the identification and classification of every single goal. It allows retailers, marketers, and individuals to focus on every goal. Moreover, investors can review and assess the performance of their investments from time to time. It helps marketers in building a strong relationship with their buyers.

REFERENCES

- Aggarwal, P., & Liu, M. W. (2012). Mental accounting in consumer–brand relationships. *Fournier, S., Breazeale, M. Fescherin, M.(Eds.) Consumer–brand relationship: Theory and practice. Routledge, New York*, 115-134.
- Angle, P., Konidala, S., Ujwal, D., Vishnu, B., & Misra, S. (2019). Impact of Mental Accounting Bias on Stock Market Integration. *Journal of Xi'an University of Architecture & Technology*, *11*(12), 283-304.
- Anolam, O. M., Okoroafor, S. N., & Ajaero, O. O. (2015). Effect of mental accounting on corporate profitability. *West African Journal of Industrial and Academic Research*, *14*(1), 100-114.
- Chen, L., Kök, A. G., & Tong, J. D. (2013). The effect of payment schemes on inventory decisions: The role of mental accounting. *Management Science*, *59*(2), 436-451.
- Jain, S., & Prakash, D. (2015). Relationship between Locus of Control and Mental Accounting of an Individual with Respect to Investment in Gold and Gold ETFS. *DIAS TECHNOLOGY REVIEW*, *12*(2).
- Konstantinidis, A., & Katarachia, A. (2015). Irrational Behavior and Mental Accounting. *The Economies of Balkan and Eastern Europe Countries in the changed World*.
- Kresnawati, E., Wahib, A. B., & Pertiwi, R. R. (2019). Mental Accounting Experiment: Mode of Payment Effect on Treating Money. *Journal of Accounting and Investment*, *20*(3), 339-353.
- Lee, S., Choe, H., & Kim, M. (2017). Mental Accounting of Retired Household by the Type of Household Financial Strategy. *국생활과학회지*, *26*(5), 403-417.
- Mahapatra, M. S., & Mishra, R. (2020). Behavioral influence and financial decision of individuals: A study on mental accounting process among Indian households. *Cogent Economics & Finance*, *8*(1), 1827762.
- Mascareñas, J., & Yan, F. (2017). How People Apply Mental Accounting Philosophy to Investment Risk?. *International Journal of Economics and Financial Issues*, *7*(3), 145-151.
- Momen, O., Esfahanipour, A., & Seifi, A. (2019). Collective mental accounting: an integrated behavioural portfolio selection model for multiple mental accounts. *Quantitative Finance*, *19*(2), 265-275.
- Muehlbacher, S., Hartl, B., & Kirchler, E. (2017). Mental accounting and tax compliance: Experimental evidence for the effect of mental segregation of tax due and revenue on compliance. *Public Finance Review*, *45*(1), 118-139.

- Novandalina, A., Ernawati, F. Y., & Adriyanto, A. T. (2022). RISK ATTITUDES, MENTAL ACCOUNTING AND OVERCONFIDENCE IN INVESTMENT PLACEMENT DECISION DURING AND POST COVID-19. *International Journal of Economics, Business and Accounting Research (IJEBAR)*, *6*(1).
- Nuriyev, N., & Azizov, A. (2019). Mental Accounting: The Impact Of Human Psychology On Financial Decisions. *Economic and Social Development: Book of Proceedings*, 1043-1050.
- Okada, E. M. (2001). Trade-ins, mental accounting, and product replacement decisions. *Journal of Consumer Research*, *27*(4), 433-446.
- Olsen, J., Kasper, M., Kogler, C., Muehlbacher, S., & Kirchler, E. (2019). Mental accounting of income tax and value added tax among self-employed business owners. *Journal of Economic Psychology*, *70*, 125-139.
- Ozkan, M., & Ozkan, O. (2020). Financial evaluation of mental accounting.
- Pannequin, F., Corcos, A., & Montmarquette, C. (2014, September). Insurance and self-insurance: Beyond substitutability, the mental accounting of losses. In *41st Seminar of the European Group of Risk and Insurance Economists (EGRIE)* (pp. 15-17).
- Rockenbach, B. (2004). The behavioral relevance of mental accounting for the pricing of financial options. *Journal of economic behavior & organization*, *53*(4), 513-527.
- Saberi, M., Darabi, R., & Hamidian, M. (2020). The Different Role of Mental Accounting on Optimal Portfolio Based on Speculative Bubble. *International Journal of Finance & Managerial Accounting*, *5* (19), 43-55.
- Salman, M., Ullah, I., Ullah, R., Javed, A., Rehman, K., Nawaz, T., ... & Rehan, M. H. (2021). Moderated Mediation Role: Relationship between Mental Accounting and Investment Decision-Making. *LINGUISTICA ANTVERPIENSIA*, *2021*(1), 1927-1947.
- Seiler, M. J., Seiler, V. L., & Lane, M. A. (2012). Mental accounting and false reference points in real estate investment decision making. *Journal of Behavioral finance*, *13*(1), 17-26.
- Shams, M. F., Kordlouie, H., & Dezfuli, H. K. (2012). The Effect of Mental Accounting on Sales Decisions of Stockholders in Tehran Stock Exchange. *World Applied Sciences Journal*, *20*(6), 842-847.
- Xie, J. (2019). Discussion on the Mechanism of Irrational Online Shopping Behavior—Based on the Perspective of Mental Accounting Theory. *Open Journal of Social Sciences*, *7*(05), 53.
- Zhang, C. Y., & Sussman, A. B. (2017). The role of mental accounting in household spending and investing decisions. *Client Psychology. New York: Wiley, Chicago Booth Research Paper*, (19-07).

Emerging Gender Divide in India's Digital Financial Inclusion: Urge for Gender Sensitive Policies

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ABSTRACT

"The government is keen to make India a $1 trillion digital economy that is dominated by digital payments & service, eCommerce, Internet of Things (IoT) and new technology powered by Artificial Intelligence (AI) and Machine Learning (ML)." - Ravi Shankar Prasad, Minister, MeitY (Bhatnagar 2019)

Digital Government, Digital Banking, Digital Payments, Digital Services, and the big dream of Digital India depict the keen interest of the Government in making India a digital economy. While India is pacing towards becoming a digital economy, it is essential to make sure no one is left behind. The Digital India program envisages empowering all citizens with digital technology to allow easier access and use of various digital services (Digital India 2019). However, this vision can be realized only when everyone is included in the digital economy, especially the vulnerable sections of the population which are socially underprivileged.

One such significant section of the population are the women. The United Nation's Sustainable Developmental Goal of Gender Equality states, "ending all discrimination against women and girls is not only a basic human right, it's crucial for a sustainable future; it's proven that empowering women and girls helps economic growth and development" (UNDP 2019). As India strives to become a digital economy, it runs a significant risk of leaving its women population behind. In this article, we analyze the digital financial inclusion of Indian women as an integral aspect of gender-inclusive development. We attempt to tackle a bundle of related questions. How much of India's growing digital financial services economy has included women in its growth? Which financial and banking products women use? Moreover, in which areas of digital financial inclusion do women fall behind? Primarily, we focus on the issue of gender disparity in the use of banking services to provide suggestions for the design and implementation of gender-sensitive policies around digital financial inclusion.

INDIA'S JOURNEY IN FINANCIAL INCLUSION

As per the World Bank, "Financial inclusion means that individuals and businesses have access to useful and affordable financial

products and services that meet their needs – transactions, payments, savings, credit, and insurance – delivered in a responsible and sustainable way" (World Bank 2019). In the past decade, financial inclusion has become a critical policy area for emerging economies primarily for the promise it holds for both the users and providers of financial services. For the supply side, the inclusion of the unbanked population brings in new users to the financial services market in the form of depositors, borrowers, insurance-seekers, etc. On the other hand, expansion in financial inclusion brings formal financial services closer to the unbanked population, thereby offering ease and safety in undertaking day-to-day transactions. For the governments and policymakers, financial inclusion is expected to enable informed and efficient implementation of schemes such as direct benefit schemes (e.g., LPG Gas Subsidy), credit assistance (Mudra and Awas Yojana), insurance schemes (Pradhan Mantri Jeevan Jyoti Bima Yojana & Pradhan Mantri Suraksha Bima Yojana) and pension schemes (Atal Pension Yojna).

While the quest for financial inclusion is promising, several obstacles stand in the way of ensuring complete financial inclusivity to all citizens. An efficient, scalable, and sustainable model of financial inclusion requires the active participation of commercial banks, non-banking financial institutions, and other financial service providers to provide financial services at a reasonable cost. India's first efforts for financial inclusivity began as early as 1969. Between 1969 and 1980, 20 major banks were Nationalized to expand the network of bank branches in rural areas and ensure easy availability of credit. Later in November 2005, the Reserve Bank of India (RBI) advised all banks to offer a basic 'no-frills' bank account with simplified KYC (Know Your Customer) norms to make opening and maintaining bank accounts easier for the poor and underprivileged sections of the population. Other noteworthy initiatives aimed at easing the access to formal credit include mandatory lending to priority sectors by commercial banks, subsidized credit for rural borrowers, the opening of RRBs (Regional Rural Banks) and NABARD (National Bank for Agriculture and Rural Development) (Chakrabarty 2012). However, in 2011, only 35.2 per cent of India's total population (aged 15+ years) had a bank account (World Bank 2015). It was evident that India needed to take strong and effective steps towards reaching the unbanked population.

Having a personal bank account is the first step towards the inclusion of individuals into the formal financial system. Over the last decade, India has made significant progress in this regard. The number of individuals with a bank account has risen from 47.03 per cent in 2013 to 79.47 in 2018. The case for bank account ownership of women is also similar. In 2013, on average, 39 women out of 100 had a bank account. This number has significantly increased to 78 out of 100 women owning a bank account in 2018 (See Figure 1). Most importantly, the difference between the percentage of men and women having a bank account has steadily decreased during this period. We can largely attribute this increase in bank accounts to the efforts of the Government, particularly the Pradhan Mantri Jan Dhan Yojana (PMJDY) and the Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA).

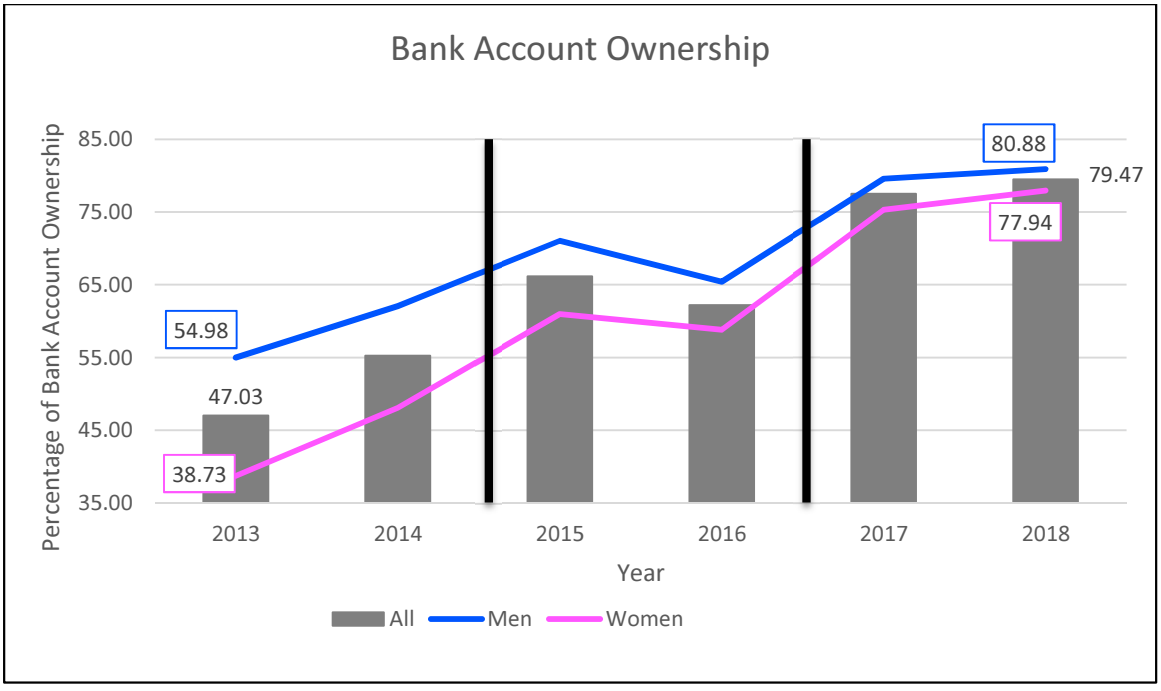

Figure 1: Bank account ownership (2013-2018): Data Source: Financial Inclusion Insights (FII) Survey Database

Here, it is necessary to note the role of PMJDY in bridging the gender divide in bank account ownership. As shown in Figure 2, after the launch of the scheme in 2014, more women own PMJDY accounts in comparison to men. This observation can be traced to one of the key benefits of the scheme, which included "an overdraft facility available to one account per household, preferably lady of the household" (PMJDY, 2019).

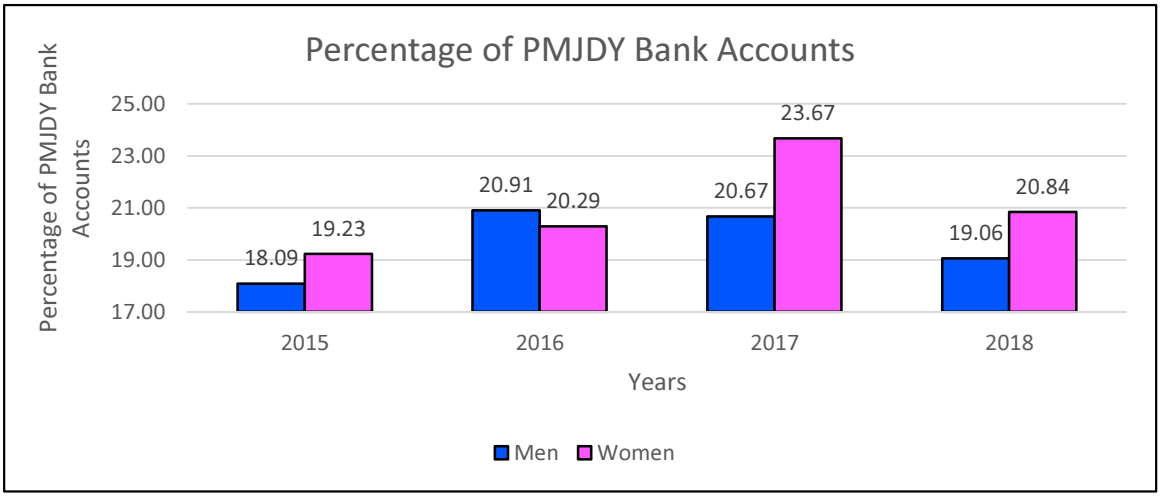

Figure 2: PMJDY bank account ownership among men and women (2015-2018): Data Source: Financial Inclusion Insights (FII) Survey Database

The large-scale opening of basic savings accounts and PMJDY accounts in recent years has brought a significant chunk of unbanked Indian women into the ambit of the formal banking ecosystem. However, as we noted earlier, a bank account is only the first step towards financial inclusion. Unless the users of these newly opened bank accounts actively use their bank accounts to access available financial services, it would be a fallacy to consider them financially included. In this context, the ratio of actively used bank accounts to total bank accounts is regarded as a key metric for assessing financial inclusion in an economy (Allen et al., 2016).

Reporting on the issue of inactive bank accounts, Global Findex Database 2017 found that 48.5 per cent of Indian bank account holders did not deposit or withdraw from their bank accounts in the past year (World Bank 2019a). While reasons such as migration, accounts with multiple banks, and death could be responsible for inactive accounts (Saligrama 2019), India's case seems peculiar as the average percentage of inactive bank accounts in the rest of the South Asian region is around 27 per cent (World Bank 2019a)[1]. Arguably, while India has succeeded in its goal of providing bank accounts to the majority of the population, the active use of these bank accounts remains debatable.

Having reviewed India's financial inclusion journey and the status of financial inclusion in the country, we now discuss the gender-based differences in the use of digital banking services. We focus on digital banking services for two reasons. Firstly, it is becoming increasingly hard to argue against the statement that the future of banking services is digital. With the rapid expansion of the internet and the high penetration of mobile phones, digital banking services are steadily becoming accessible to all. Secondly, in the long run, the digital model of banking services is a more cost-effective sustainable model for banks as compared to the traditional brick-and-mortar model of banking services.

In the following section, we explore the differences in the use of digital banking services among men and women. To undertake this analysis, we use the data provided by the Financial Inclusion Insights (FII) 2018 Survey conducted by InterMedia, in partnership with Bill and Melinda Gates Foundation[2].

USE OF DIGITAL BANKING SERVICES

The debit card is one of the most popular digital banking services available to bank account holders. Debit cards enable users to access banking services such as withdrawal or deposit of funds without visiting a bank branch (through a nearby ATM). It is considered an easier and safer option of transacting at any point of sale. With the Government's increased emphasis on moving towards a less-cash economy, adoption and usage of ATM/Debit cards are critical. Also, a key feature of the PMJDY account was a free RuPay card (a debit card). This initiative has certainly opened the doors of digital banking for many users.

In a gender-sensitive and financially inclusive society, we can expect widespread adoption of debit cards and an equal proportion of usage by men and women. However, in India's case, it seems, both the expectations are far from reality. Among those who have a bank

account, only 41 men out of a hundred men and only 25 women out of hundred women reported using a debit card. The difference in usage of debit cards between men and women is significant (Figure 3).

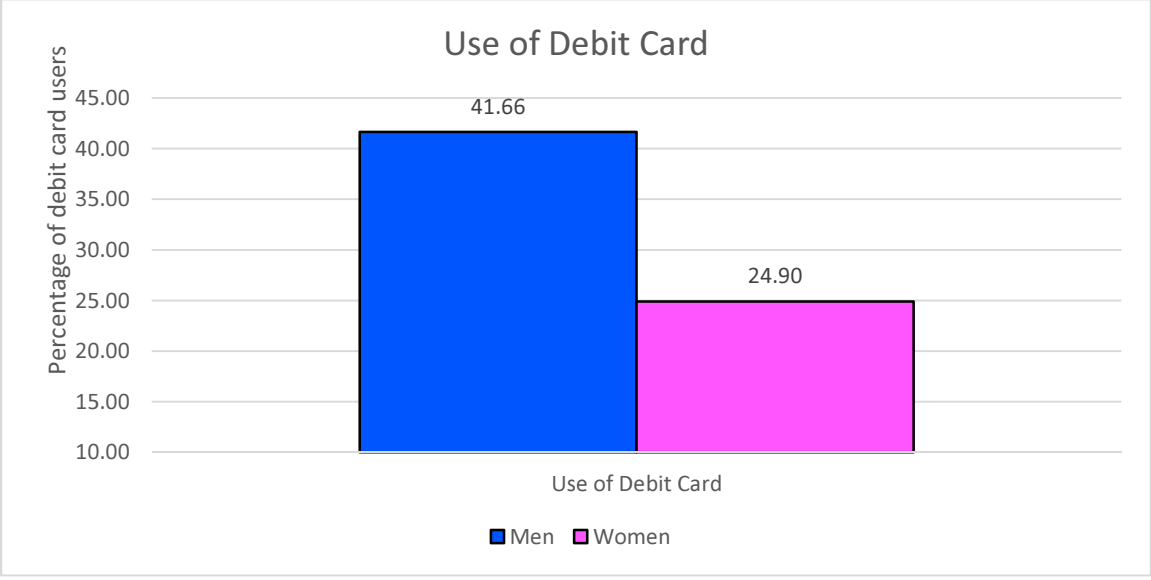

Figure 3: Use of Debit Card

Thanks to the ubiquitous nature of mobile phones and negligible data rates in India, mobile-based digital banking services have the potential to disrupt the traditional branch-based banking services ecosystem. The same is evident from the focus of the Government's financial inclusion policy, which places the JAM (Jan Dhan-Aadhar-Mobile) Trinity at its centre. The policymakers are of the view that mobile phones can serve as powerful channels in delivering banking services to the farthest corners of the country.

Along with traditional internet banking services, three major forms of banking services have emerged as the primary modes of transaction in the space of mobile-based digital banking services. These include payment banks (e.g., Airtel, PayTM, IndiaPost, Fino, Aditya Birla, and Jio), e-Wallets (e.g., Airtel Money, PayTM, Amazon Pay, MobiKwik and Ola Money), and UPI based payment apps (e.g., BHIM, PayTM, PhonePe, Google Pay, ICICI Pockets and Freecharge). With more merchants accepting payments through digital banking channels, more users are expected to use these services.

Though a lot is happening in the mobile banking space, access to a phone with a reliable data connection is the fundamental requirement for accessing mobile-based payment services. As per the 2018 FII survey data, while 77.19 per cent of the respondents had access to a phone, only 60.99 per cent of them owned a phone. On the other hand, in the case of women, while 69.09 per cent could access a phone, only 45.12 per cent owned a phone. In other words, only one in every two women owns a phone. This is significantly

lower than men and severely limits their access to mobile-based payment services, which is evident in the diffusion of mobile banking services.

To understand the diffusion of mobile banking services, we explored both awareness and usage of the above-mentioned services. Figure 4 graphically represents the levels of awareness and use for the three payment services available in India. As shown in the figure, awareness about Payment Banks and e-Wallets is extremely low compared to payment apps. In addition, the difference between the awareness levels among men and women remains persistent and significant. The awareness about Payment Apps is high among the respondents; however, the usage of mobile banking services is in single digits. Particularly the usage among women is negligible.

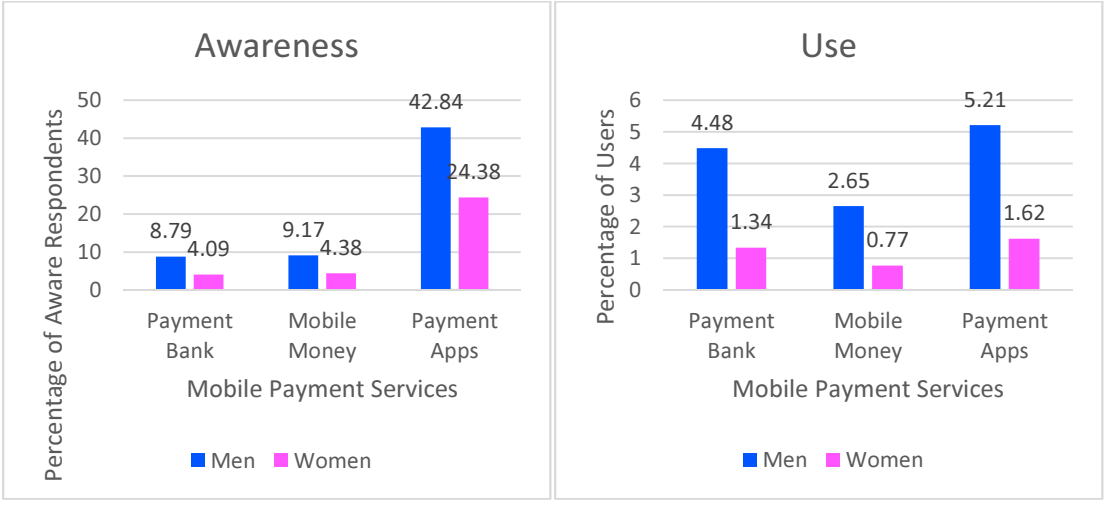

Figure 4: Awareness and Use of Mobile-based Payment Services

A key reason for such low diffusion of these services can be the adoption of smartphones (Singh and Vimalkumar, 2019). All three services require access to a smartphone to allow users to do digital transactions. As per the survey data, only 28 out of 100 individuals own a smartphone. Further, women constitute only 26.84 per cent of all smartphone users. Arguably, the disparity in smartphone ownership among males and females is one of the crucial factors in the gender divide observed in the awareness and use of mobile-based digital payment services.

Debit/ATM cards have become a popular choice for accessing digital banking services. While the use of the debit card is relatively higher among women in comparison to mobile-based payment services, we find that the gender divide is persistent across all channels of digital banking. A key reason which could explain the observed gender divide is the difference in the demand for banking and digital transaction services among the two genders. Given the socio-cultural norms prevalent in India, it could be argued that there is less requirement for

banking and digital transaction services among women in comparison to men. To further investigate this line of argument, we attempt to understand financial behaviours such as savings and borrowings between men and women.

Female Participation in Financial Activities

The survey data reveals that men and women portray similar financial behaviours. For instance, the proportion of men and women who have made savings in any form is almost the same. As shown in Figure 5, about 48 per cent of men and women save money in some form. Similarly, in the borrowing space, though more men borrowed money (54.28%), women are not far behind (45.71%). Considering, saving and borrowing money are routine financial activities for any household, we observe almost equal participation of men and women in these two activities. Both groups are equally likely to utilize banking and digital transaction services to undertake these two activities safely and easily. However, it might be possible that men and women differ in their preferences concerning formal and informal channels for saving and borrowing money.

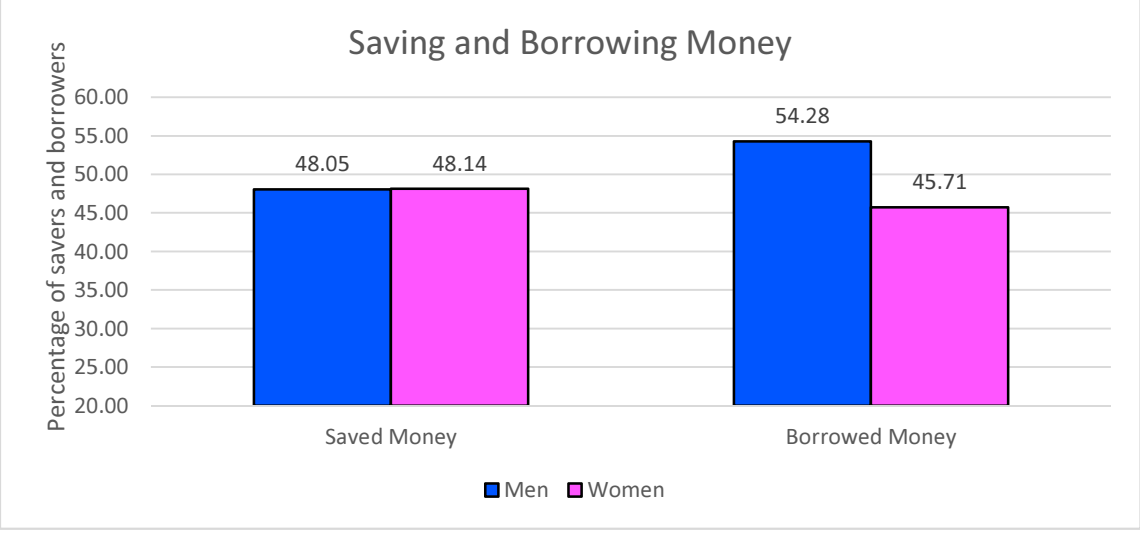

Figure 5: Saving and borrowing money in some form

Upon examining saving and borrowing behaviours among the genders across formal and informal channels, we find that men and women exhibit similar behaviours across all categories (Figure 6). Borrowing is extremely skewed towards the informal channels (80:20). Interestingly, more women (25.13 per cent of all women) borrow through formal channels compared to men. A key reason for this finding could be that banks and financial institutions have incentivized formal borrowing among women by offering lower interest rates. Given this, the financial inclusion of more women will aid poorer households in avoiding the risks and uncertainties posed by informal money lenders. Overall, our findings establish that the gender divide in digital financial inclusion is not due to the lower participation of women in financial activities.

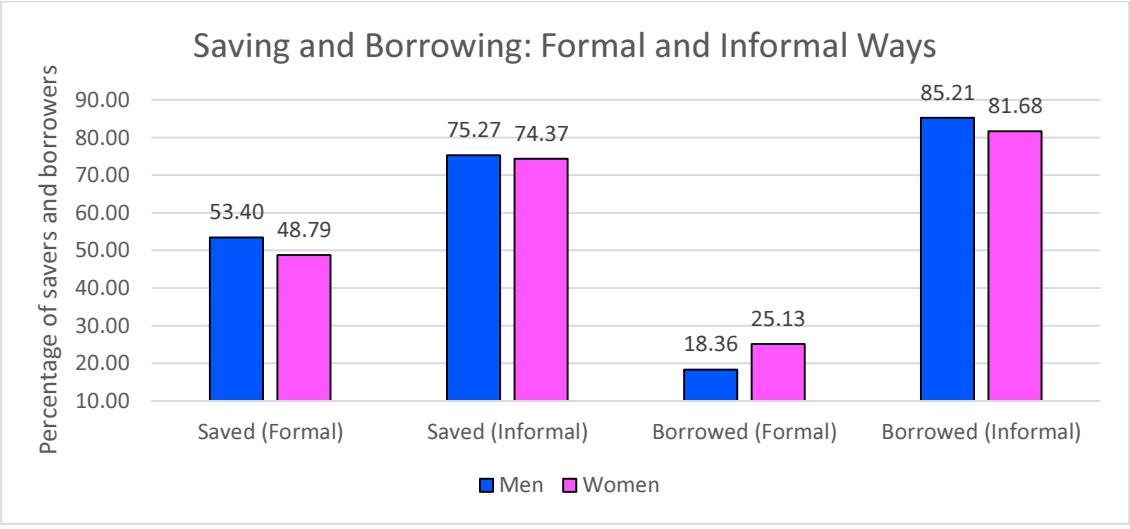

Figure 6: Percentage of Savers and Borrowers using Formal and Informal means

REGIONAL NUANCES

The diverse character of the Indian diaspora can hold a crucial position in the analysis of the gender divide in the use of banking services. To explore regional differences, we divided the survey respondents into six zones: North, South, East, West, Central and North East. We compared the number of men and women with active bank accounts across the six zones. Overall, we find that the percentage of women is lower than men in every geographical zone. Interestingly, the difference across the six zones varies considerably. As shown in Figure 7, The North-East and South zones have the lowest difference between the percentage of male and female active bank account users. Also, almost 60 per cent of the women in both regions are active bank account users. On the other hand, the Hindi heartland, which includes the Central and North Zone, exhibit the largest gender divides compared to all other zones. While the West zone shows a considerable gender divide among active bank account users, it has a higher proportion of women users as compared to the Central and North zones.

We observe a similar pattern across zones in the use of debit cards, the most popular channel for digital transactions available in India. North-East and South Zones have the highest percentage of women users and, consequently, exhibit a narrower gender divide in debit card usage. While the gender divide is also narrow in the East Zone, the average debit card usage among all respondents was only 20 per cent. Conversely, the gender divide in the West Zone is the largest among all the zones. However, the average debit card usage in the zone stood at the national average of 28 per cent. Lastly, North and Central Zones score low in the percentage of women users and exhibit a significant gender divide in the use of debit cards.

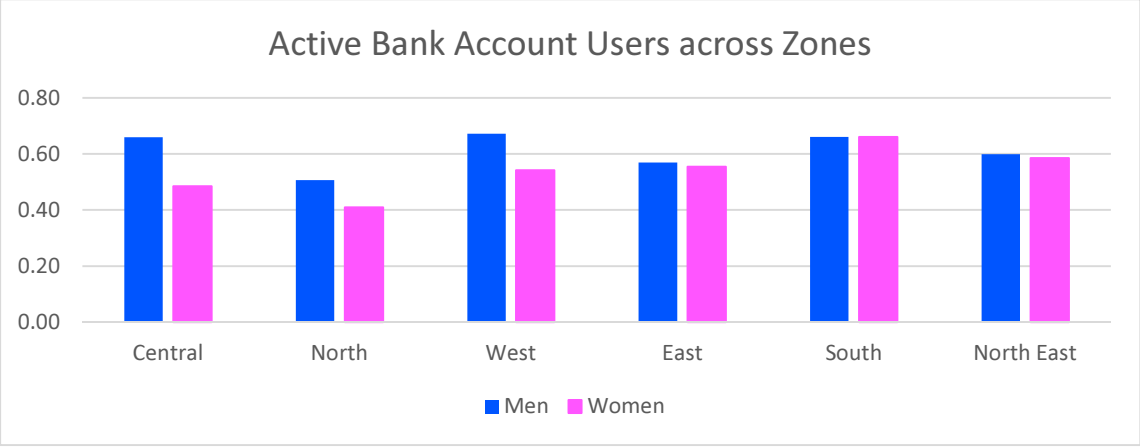

Figure 7: Active Bank Account Holders across Zones

To explore further, we compared the difference between the number of men and women with active bank accounts across the states. Figure 8 depicts the number of women holding an active bank account for every hundred men in all states in India.

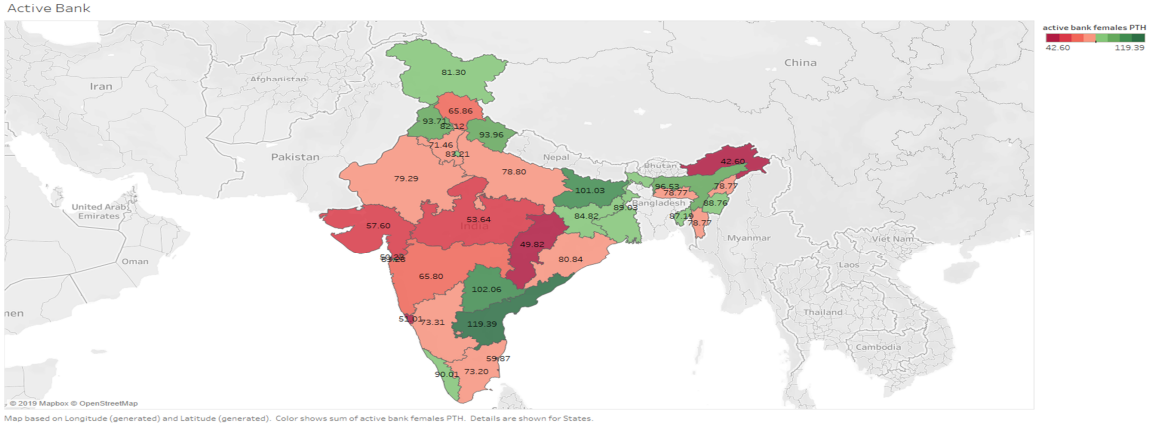

Figure 8: Number of women with active bank accounts per 100 hundred men

The analysis shows that the disparity among the states is more severe than it appears. Southern states perform better in terms of digital inclusion, with Andhra Pradesh leading the country with 119 women with active bank accounts per 100 men. Most Eastern and Northeastern states (except Arunachal Pradesh) have a healthy ratio of women with active bank accounts. As shown in the image, most of the Central and Western Indian states exhibit the severest case of the gender divide in financial inclusion. On average, these states have less than 60 women with active bank accounts per 100 men. Notably, Madya Pradesh, Haryana and Chhattisgarh are at the bottom of the list in terms of financial inclusion.

Our analysis of geographical differences further emphasizes the need for a localized gender-sensitive approach towards digital financial inclusion. Continuing with a

country-wide one-size-fits-all approach, which ignores the regional differences, runs the risk of further aggravating the observed gender divide in financial inclusion.

A key reason for the gender divide in the financial inclusion of women is low literacy rates (Singh and Vimalkumar, 2019). This becomes evident in our analysis when we observe that most of the states with severe cases of gender divide are also the states with the lowest rates of female literacy in the country. The need for incentivizing and encouraging general as well as financial literacy among women is a crucial step for policymakers for resolving the gender divide in financial inclusion.

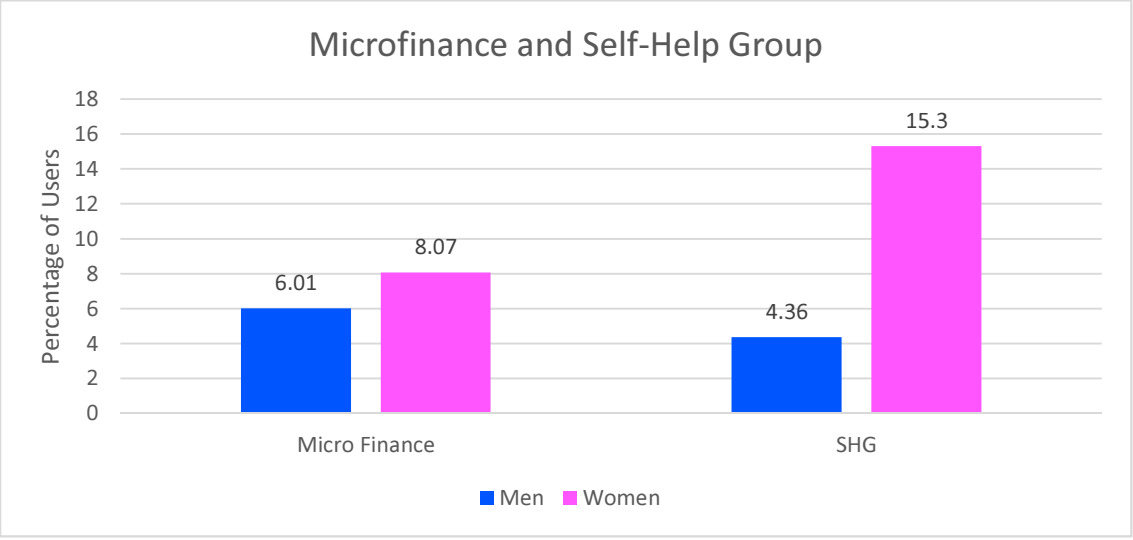

Figure 9: Use of Microfinance and Self-Help Group services

Another area of importance addressing the issue of the gender divide is the microfinance and self-help group ecosystem. Interestingly, we observe the opposite case of the gender divide in the use of microfinance self-help group services. We find that 8.07 per cent of women have used microfinance services in comparison to 6.01 per cent of men. Similarly, 15.30 per cent of women have been part of self-help groups compared to 4.36 per cent of men. Arguably, microfinance institutions (MFIs) and self-help groups (SHGs) perform better at addressing the financial needs of women. We believe that continued support of policymakers and technological innovations in the MFI and SHG ecosystem can help bridge the gender divide documented in our analysis in the use of other digital banking services.

CONCLUSION

A general policy approach to Financial Inclusion by the past governments has helped India to achieve substantial growth in bringing a large part of the unbanked population into the ambit of the formal financial system. However, a one-size-fits-all approach, which is insensitive to the deep-rooted gender inequalities in society, has resulted in the under-representation of women in the formal financial system. Thus, we urge

policymakers to understand the urgency to adopt a gender-sensitive approach towards financial inclusion and to bridge the widening gender gap. Such an approach towards financial inclusion can play a significant role in the improving status of women in the Indian household. On the other hand, the lack of a gender-sensitive approach in policymaking can aggravate the already existing gender disparities in the socio-economic domain.

With the help of the latest survey data on financial inclusion, our analysis has shown that gender disparity persists across different banking services. We present preliminary evidence of a significant gender divide in the use of traditional digital banking channels (like the debit card) and advanced banking channels, such as payment banks, e-Wallets, and payment apps. However, the low penetration rates of advanced digital channels across the genders provide an opportunity for policymakers to address the gender divide in financial inclusion at an early stage.

We call for efforts in the direction of gender-sensitive policies for two primary reasons. Firstly, by ignoring the growing gender divide in digital financial inclusion, we run the risk of sidelining women in the rapidly growing digital economy. This risk is especially higher for women in the economically and socially weaker sections of society. Secondly, women can play a major contributory role in the digital space. Currently, the reach of digital transaction services in India is in its initial stages and efforts for resolving the gender divide will allow more women to contribute to the growth of digital transactions in India. As we noted, addressing the gender divide in digital financial inclusion carries an immense potential for the economic and social empowerment of women.

Lastly, it is essential to note here that financial behaviours such as savings and borrowing are similar across the genders. Our findings suggest that both men and women show a similar tendency to use formal or informal channels to save and borrow money. This finding discredits the widespread belief that women are not financially active. Instead, it paints a worrying picture of the status of financial inclusion among Indian women. As the UN's SDG states, it is not only women's right to get equal access and opportunity to utilize banking and digital transaction services; it is critical in the empowerment of women. While we must acknowledge the contribution of government efforts like PMJDY in allowing more women to have a bank account, further efforts are needed to empower them to access and use traditional as well as digital banking services.

NOTES

[1] The South Asia Region includes Afghanistan, Bangladesh, Bhutan, India, Sri Lanka, Nepal, and Pakistan

[2] The survey collects data about the usage of digital financial services among the adult population (age > 15) across the nation through a scientific, national representative sample method. In the 2018 edition of the survey, data points were collected from a sample of 48,027 individuals. Among them, 23,062 were women, and 24,965 were men. Readers can find more details on the database at: http://finclusion.org/

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REFERENCES

Allen, Franklin, Asli, Leora Klapper, and Maria Soledad Martinez Peria (2016): "The Foundations of Financial Inclusion: Understanding Ownership and Use of Formal Accounts," *Journal of Financial Intermediation*, Vol 27, pp 1–30. https://doi.org/10.1016/j.jfi.2015.12.003.

Bhatnagar, Armaan (2019): "Keen to make India $1 trillion digital economy: Ravi Shankar," The Times of India, 19 September, https://timesofindia.indiatimes.com/articleshow/71200626.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

Chakrabarty, K. C. (2012): "The First Mile Walk into Financial Inclusion – Thinking Differently," *RBI Speeches*, 7 August, https://www.rbi.org.in/scripts/BS_SpeechesView.aspx?Id=715

Digital India (2019): "Vision and Vision Areas," 27 October, https://digitalindia.gov.in/content/vision-and-vision-areas

PMJDY (2019): "Pradhan Mantri Jan Dhan Yojana: Scheme Details," 27 October, https://www.pmjdy.gov.in/scheme

Saligrama, Anirudh (2019): "Five Years Of Jan Dhan Yojana: About 20% Of Accounts Lying Dormant," *Bloomberg Quint*, 15 August, https://www.bloombergquint.com/economy-finance/five-years-of-jan-dhan-yojana-about-20-of-accounts-lying-dormant

Singh, Jang Bahadur and M Vimalkumar (2019): "From Mobile Access to Use." *Economic and Political Weekly,* Vol 54, No 32, pp 60-67.

UNDP (2019): "Goal 5: Gender equality," UNDP: Sustainable Development Goals, 27 October, https://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-5-gender-equality.html

World Bank (2015): "Global Financial Inclusion (Global Findex) Database 2011," 15 April, http://microdata.worldbank.org

World Bank (2019): "Financial Inclusion: Overview," 27 October, https://www.worldbank.org/en/topic/financialinclusion/overview

World Bank (2019a): "The Global Findex Database 2017," 27 October, https://globalfindex.worldbank.org/

National Education Policy 2020: A Revolutionary Step for Education System in India

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ABSTRACT

Education is an important tool for the overall development of any nation. There is a famous proverb quoted by few scholars that "The best investment in the world is to invest in education". This research paper is dealing with the changing scenario of education in India. For upgradation of the education system of any country, a sound education policy is very much required. Education is not a media, it's a tool of the overall development of the intellectual property of any country. This research paper is an exploratory work of the researcher where secondary data has been used for the further study. Changes incorporated in the education sector in country where name of the ministry has been changed and various policy implementation is the key for the further changes in educational outcomes. The outcomes of this research paper is dealing with the changes of the resources in terms of future leaders.

Key words: *National education policy, education ministry, implementation, future leaders and education sector*

INTRODUCTION

Education plays an important role in establishing and building individuals values, believes etc. Every citizen has a fundamental right to get quality education. All the children from different sections of society should get education so that they can also prosper in the education system. Basic education is important for every child as it open up the way for further opportunities to learn more in any field.

On 29 July 2020, the Union Cabinet of India approved the National Education Policy 2020 (NEP 2020). This is the first NEP in the 21st century and has also recommended many changes in order to upgrade the education system in the country. The name of Ministry of Human Resource Development has been changed to Education Ministry. A lot of children specially the children from social-economically backward areas don't have access to Early Childhood Care and Education (ECCE). Huge investment in ECCE is needed

to provide universal access to education to all children, so that they can also prosper in the educational system. The NEP is focusing to provide education to all the children by 2030. NCERT (National Council of Educational Research and Training) will develop a National Curricular and Pedagogical Framework for Early Childhood Care and Education (NCPFECCE). This will be a guide for the parents and the early childhood care and education institutions. Education is a public service and should not be treated as a source of profit or commercial activity. In today's scenario more focus is given to summative assessment which is leading to the increase of 'coaching culture', in order to reduce this culture more focus will be given to formative assessment for learning. Now, more attention will be given on building characters and creating well-rounded individuals who will also have modern skills (Development, 2020).

NEED OF ACADEMIC DEVELOPMENT

The policy focuses on improving the student's development in both academic and non-academic field. Equal importance will be given to curricular, extracurricular or co-curricular activities and to vocational and academic streams etc. Conceptual learning will be encouraged and more importance will be given to creativity and critical thinking so that the students are motivated towards taking more logical decisions. The students will be inspired to learn local languages and local context will be included in all curriculum, teaching and policy. Students will be motived more to learn life skills and moral and ethical values (Development, 2020).

In the NEP, the curriculum and the structure of school education that was 10+2 earlier, has been changed to "5+3+3+4", this is divided according to the age group of 3–8 years, 8–11 years, 11–14 years, and 14–18 years. This has brought the preschool education of children of age group 3-5 under formal schooling, this is important as this age is considered crucial for mental development of a child. Therefore, the new policy has 12 years of schooling and three years of pre-schooling (Chakrabarty, 2020).

There will be a link between the curriculum of all the levels which include early childhood care and education, school education and higher education. The content in the curriculum will be reduced and each subject will contain only that content which is core essential (Chopra, 2020). The classroom sessions will be conducted in a more interactive manner, the students will be motivated to ask more questions, there will be more fun, creative and experimental activities in the classroom sessions that will help the students in experimental learning.

EDUCATION IN REGIONAL LANGUAGE

The students will be taught in their mother tongue or regional language 'wherever possible', till class 5th and no student will be forced to opt for any particular language which is not of their interest (GOYAL, 2020). The foundational literacy will be given to all students by class 3rd. Sanskrit will be included in the mainstream and three language formula will be adopted by all the institutions for higher education. The student will be taught coding from class 6 onwards. When the students will reach in 6th standard, they will have to do internships for at least 10

days with local tradesman or craftsman according to their interests. Student will be able to choose the subjects they want to study according to their choices; Specially in secondary school, so that they themselves can decide their path of study and make life plans according to their preference.

The persons who are reputed and experts in their field known as 'master instructors' can be hired by school for teaching subjects like entrepreneurship, agriculture and all the other subjects that would require local expertise to understand it properly. NCERT will develop National Curricular framework for School Education (NCFSE), after discussion with the government and expert authorities and it will be available in all regional languages. This will be updated in every 5-10 years. NEP has planned for providing quality textbooks at lowest prices or maybe at the cost of production. The students and educational system would get the textbooks at affordable price and their burden will be reduced (Development, 2020).

NATIONAL EDUCATIONAL TECHNOLOGY FORUM

National Educational Technology Forum (NETF) will be set up to expand digital learning. In the beginning E-courses will be uploaded in eight regional languages, and virtual labs will be prepared (Educaion Desk, 2020). The policy is planning to bring two crore children who are out of school now, back into the school as soon as possible (Jain, 2020). Apart from legal and medical colleges, all the higher education will have a single regulator, and MPhil degree will be closed. Foreign universities will be allowed to enter the Indian higher education. The top 100 universities in the world will be allowed to set up campuses in India. Special regulations will be made for these institutions to set up their campuses. As foreign colleges will be allowed to set up their campuses in India, so the students who are unable to go abroad for studies due to any reason can now get global exposure in their own country. A four year multidisciplinary undergraduate programme will be introduced. This programme will have multiple exit options, the students who exit after one year will get a certificate, the students who exit after two years will be provided a diploma degree, and the students who will exit after three years will have a bachelor's degree. The students can choose their major and minor subjects according to their interests and preferences, and will also do some research work during their course. If students perform well and complete a detailed research project within four years then they can get a degree 'with research'. IITs we also have to follow multidisciplinary education and include more arts and humanities courses (Saini, 2020).

The master's degree programmes will remain the same and after the master's degree the student can opt for a PhD programme. The students now entering the Ph.D. program will have to opt for credit-based courses during the time of their doctoral training, related to the subjects they have chosen for their Ph.D. All the higher education institutions will aim to become multidisciplinary institutions by 2030 and then slowly increase the strength of students so that the infrastructure and resources can be used to the full. The existing higher education institutions will also be expanded and improved. There should be at

least one multidisciplinary higher education institution in or near every district with high-quality education and medium of instruction in local languages. Through this education can be provided to students in remote areas easily. For admission in any higher education institute there will be a common entrance exam, but it will be optional (Saini, 2020).

The Gross Enrolment Ratio in higher education is to be increased to 50% by 2035 which is 26.3% (2018). If authorised, the institutions will have an option to start Open Distance Learning (ODL) and online programs. Through this access to education can be increased, opportunities for lifelong learnings (SDG 4) can be provided and GER will also improve. An Academic Bank of Credit (ABC) will be started, this will store the academic credits earned by the students during their course. ABC will allow the students to take a break and then re-join their studies within certain period of time, as it will contain all the previous credits of that students which will help the students to continue their studies without any problem (Saini, 2020).

Every student has an inborn talent which should be discovered and developed. The students who have strong interest in a particular field should be motivated to further pursue that field separate from school curriculum. Proper guidelines will be developed by NCERT and NCTE (National Council for Teacher Education) for the education of gifted students. B.Ed. Programs will allow to get specialisation in teaching the gifted students, methods will be taught to identify and encourage the talent of these students. Teachers and professors are considered as the backbone of our society, they play an important role in shaping the future of our children and because of that they contribute in shaping our nation too. Teaching profession in India was considered as the most honoured job and teachers were treated as the most esteemed members of society. The people who were best and most learned became teachers. But now, there is lack of motivation and quality of teachers is not satisfactory. There is a need to increase the motivation and empowerment of teachers so that the best will be willing to enter the teaching profession (Development, 2020).

EDUCATIONAL CRITERIA AND REGULATORY SYSTEM

The teacher education institutions (TEIs) that are not working properly will be given time of one year to rectify the violations done by them, and if after that also they do not meet the basic educational criteria then the Regulatory System will be allowed to take strict action against those TEIs. By 2030, only those TEIs should be functionally active that will work properly and will fulfil the basic educational criteria. A large number of merit-based scholarships will be launched all over the country for the students to study four-year integrated B.Ed. programmes. The higher educational institutions can also provide two year and one-year B.Ed. programme. The students who have completed their bachelor's degree in a specialised subject can opt for two-year B.Ed. programme and the students who have completed their four-year undergraduate degree opt for one-year B.Ed. programme. A special merit-based scholarship will be set up in rural areas in which the student can also choose for preferential employment in their local areas if they complete their B.Ed. programmes successfully. This will provide job

opportunities for local students, especially for female students. Special incentives will be provided for the teachers to practise in rural areas and specially in the areas where there is a deficiency of good teachers. This will also include providing housing facility in or near the school premises or increasing the housing allowances of the teachers (Development, 2020).

There will be an increase in expenditure on education, it will be 6% of the total GDP which was earlier 4% of the total GDP. In order to use technology for better learning outcomes a regulatory body- National Educational Alliance for Technology (NEAT) will be created. This will make learning more personalised and customised according to the requirement of student, by using artificial intelligence. (Mathur, 2020)

RESULT AND CONCLUSION

The New Education Policy will reduce the burden of classroom teaching and examination on students, and will give more importance to practical knowledge of students. The student will acquire both modern skills and traditional values that are needed in the 21st century.

NEP has provided the changes that were much needed in our education system and has all the tools that are needed to make Indian education system competitive at universal level.

The joint efforts of Central government, state government and Education Ministry are required to successfully implement NEP.

REFERENCES

Chakrabarty, R. (2020, august 20). *From 10+2 to 5+3+3+4: What does NEP's big shift in school education mean?* Retrieved from indiatoday: https://www.indiatoday.in/education-today/featurephilia/story/from-10-2-to-5-3-3-4-what-does-nep-s-big-shift-in-school-education-mean-1713346-2020-08-20

Chopra, R. (2020, december 23). *Explained: What is new in India's National Education Policy?* Retrieved from indianexpress: https://indianexpress.com/article/explained/reading-new-education-policy-india-schools-colleges-6531603/

Development, M. o. (2020). *National Education Policy 2020*. Retrieved from education.gov: https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf

Educaion Desk. (2020, july 31). *New Education Policy 2020 HIGHLIGHTS: All you need to know about NEP*. Retrieved from indianexpress: https://indianexpress.com/article/education/new-education-policy-2020-live-updates-cabinet-approves-nep-ramesh-pokhriyal-prakash-javadekar-6529139/

GOYAL, S. (2020, july 30). *New Education Policy 2020: Facts at a Glance*. Retrieved from jagranjosh: https://www.jagranjosh.com/general-knowledge/national-education-policy-1596096791-1

Jain, M. (2020, august 17). *NEP 2020: How new education policy will impact students*. Retrieved from financialexpress: https://

www.financialexpress.com/education-2/nep-2020-how-new-education-policy-will-impact-students/2056949/

Mathur, N. (2020, october 22). *NEP 2020: Implementation of New Education Policy in our education system*. Retrieved from hindustantimes: https://www.hindustantimes.com/education/nep-2020-implementation-of-new-education-policy-in-our-education-system/story-bw4OiekFCamI7NPoNkgAoJ.html

Saini, S. (2020, september 24). *New Education Policy (NEP) 2020 - Details, Major Changes, Benefits*. Retrieved from collegedekho: https://www.collegedekho.com/news/new-education-policy-in-india-2020-20262/

Knowledge Management for Effectual Talent Deployment-An Organization Building Approach

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ABSTRACT

With the significant role of talent management in efficient and smooth working of any organization it is obvious that while talking and managing talented employees both for attaining present and future goals of organization accompanied by generating and indoctrinating a culture of innovation, a mix of varied talent developing exercises, an organization tries to build a Learning and knowledge centric organization.

But it largely depends on various factors related to employees, organization culture and climate, external and internal pressures, leadership patterns and many external and internal factors whether employees will willingly share the knowledge in form of ideas, opinion, experience with other at different levels across hierarchy and outside. This poses a serious challenge on effective Human resource management and in managing the available talent both available and one that organization develops to meet desired results.

The present paper theoretically aims at understanding the role of Knowledge management as a long-term perspective when talked about managing talent at workplace. The paper brings in light the significant role that a futuristic perspective of managing workforce of today for building tomorrow's knowledge capital plays.

Keywords *– Talent management, Knowledge management, Talent supply chain, Future workforce.*

I. INTRODUCTION

Since we are all dwelling in knowledge society where the capital and value created by the tangible assets is not as significant as the intellectual capital. After the rapid technological innovation, the working and efficiency of all organization have witnessed a transformation. In such a scenario the profile of a talented worker needs to have a combination of technical, social, emotional, and cognitive skills. The present talented worker cannot limit himself to a certain profile and matched with scientific knowledge, technology, and his intellectual abilities he serves the organization in manifold ways.

A knowledge work is different from manual work in the sense that knowledge work is always information based and manual work is always material based. "Knowledge" is information that is contextual, relevant, and actionable.

Knowledge is usable even after elapse of time and it evolves the same does not applies

to information. Some of the core reasons for implementing Knowledge Management Systems in business organizations are -

- Globalization and competition all around the globe
- Restructuring and downsizing due to varied changes inside and outside the organization
- Sharing of best practices across (both within and outside the organization)
- Successful Innovation matched with technological developments
- Huge expectations and career aspirations of new workforce

Types of knowledge

Knowledge can be of different types viz-

- **Descriptive**-It is information about past, present and future or any assumption related to *knowing what*
- **Procedural-**it is information which tells step by step procedure and in exploring *how*
- **Reasoning**-it includes knowing why to interpret the evaluative conclusions
- **Linguistic**-It is the information that interprets communication as and when it is received
- **Presentation**-it is the information that furnishes how information is furnished focusing on delivery of knowledge

Defining Knowledge Management

- *Knowledge management* can be defined as a process that helps organization to identify, select, organize, disseminate, and transfer the expertise and information lying in the organization memory in form of individuals, technological capabilities, work system, methods, and procedures in an unstructured manner. It enables in efficient planning, learning, decision making in strategic ways.
- KM is a concept in which an enterprise gathers, organizes share, and analyzes the knowledge of individuals and groups across the organization in ways that directly affect performance.
- Knowledge management is a conscious, hopefully consistent, strategy implemented to gather, store, and retrieve knowledge and then help distribute the information and knowledge to those who need it in a timely manner. The strategy includes rules, procedures, and cultural aspects in addition to the hardware and software to help put the knowledge management strategy into action.

The **primary objective** of any corporate Knowledge Management (KM) program is to support the achievement of strategic business objectives. In other words, the "starting-point" for KM is to understand what the organization's business objectives are.

A recent McKinsey survey of 40 companies in the US, Europe and Japan showed that many executives think that KM "begins and ends with sophisticated IT systems" (Haus's child et al, 2021). Many KM projects fail because they are treated as technology-projects. To be successful (and meaningful), KM must not be an end, but must be a strong enabler to achieving real business results.

This end is achieved by defining a Knowledge Strategy for the organization that flows from and dovetails into the Business Strategy. Knowledge Strategies and KM initiatives that are "stand-alone" and not linked to Business Strategy are not likely to succeed. Key to defining and implementing a Knowledge Strategy that will lead to business results are steps such as identifying Knowledge Capabilities critical to business success, conducting a Knowledge Inventory & Knowledge Mapping.

II. KNOWLEDGE MANAGEMENT AND HUMAN RESOURCE MANAGEMENT

Managing people and driving their performance and knowledge with organizational long-term objectives decides to a large extent the future of any organization, thus first it is important to understand these basics, *People management* refers to the policies and practices which govern how people are managed and developed in organizations.

Human resource management is 'A strategic and coherent approach to the management of an organization's most valued assets – the people working there who individually and collectively contribute to the achievement of its objectives.' *Human capital management is* **'**An approach to obtaining, analyzing, and reporting on data which informs the direction of value-adding people management strategic investment and operational decisions at corporate level and at the level of front-line management.

Greengard (1998) said that though knowledge management can be implemented in different ways with human resource management strategies bring vast difference-

1) The first and foremost way to ensure knowledge management facilitated by knowledge management is to provide full support to the human resource executives by establishing cross functional teams to map knowledge and plan the initiatives.
2) Consistently the Human resource department should ensure through feedback, result analysis of different productivity reports, superior feedback and comparing with earlier performance the pace of knowledge transfer. It should be both technical, behavioral and should reflect from organization environment.
3) The Human resource department should ensure that the organization is having suitable technology to make knowledge management flourish and nurture a sharing culture.
4) The Human resource department should ensure by way of motivation, open forums, participation exercises to encourage the value of knowledge management in building a buy-in attitude.
5) With the support and vision of top management the human resource department should ensure that the philosophy of knowledge management should be considered as a work in progress rather than as a corporate image
6) Human resource department should try to correlate the concept and utility of knowledge sharing as a medium to enhance the worker's knowledge and relooking at the job profile and identifying areas where knowledge based on the tasks and competency can be shared and flown from one level to another.
7) HR department should align the knowledge management goals with business direction by identifying where the tacit knowledge resides and how it can be utilized for achieving company's goals.
8) Further, HR department should assess the knowledge level of its employees to determine whether it brings any benefit to the organization goals to determine the affords and outcome of knowledge management programs.
9) HR department should design or customize suitable Knowledge management activity, program, or orientation for its knowledge workers like organizing social gathering.

10) The HR department should ensure the linkage of HR activities and functions with knowledge management functions like as Found in Malaysian context by Yahiya and Gob (2002), that there is a linkage between four areas of HR functions and five areas of knowledge management –viz training and development, performance appraisal, compensation reward and decision making is having linkage with five different areas of knowledge management.

III. EVALUATING KNOWLEDGE MANAGEMENT

Model 1- Approach of Long-term Vision Process Approach by Bukowitz and Williams

-The This KM model depicts the process that defines the strategy for management to build, divest, and enhance knowledge assets. It is a model that emphasizes the "why" and "when" aspects. The strengths of this model rest on its strategic focus, which essentially puts knowledge management action into context. It is also worth noting that the notion of "divestment" is included - something which is often missing from KM models.

KM initiatives are the result of the response to tactical and strategic changes and needs. The model provides a great overview of the strategy behind KM but it does not include any deeper insight into what initiatives are suitable in a given instance.

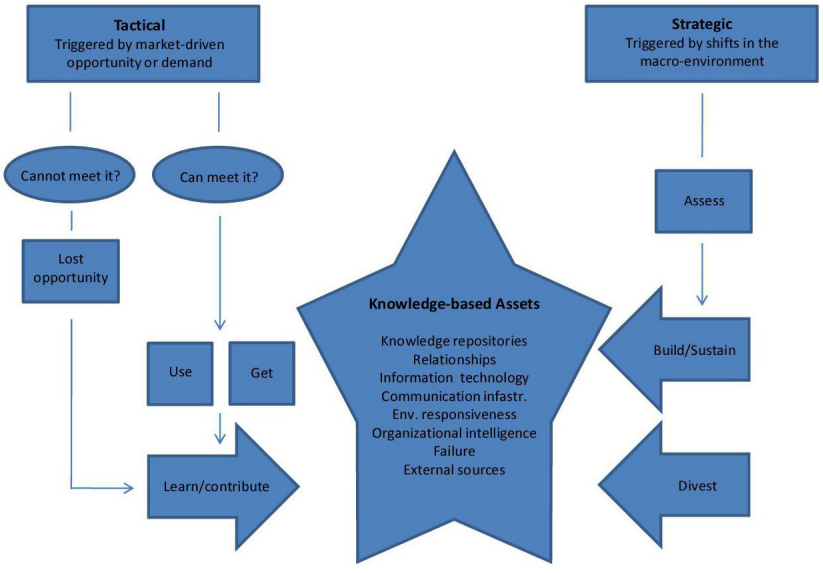


Fig 1-The KM Process Framework by Bukowitz and Williams (1999)

Model 2- KM Matrix by Gamble and Blackwell (2001) This KM model presents a general theoretical framework, as well as specific guidelines for implementation. The KM process is split into four stages. First management must locate the sources of knowledge. Then they must organize this knowledge to assess the firm's strengths and weaknesses and determine its relevance and reusability. This is followed by socialization, where various techniques are used to help share and disseminate it to whomever needs it in the organization. Finally, the knowledge is internalized through use.

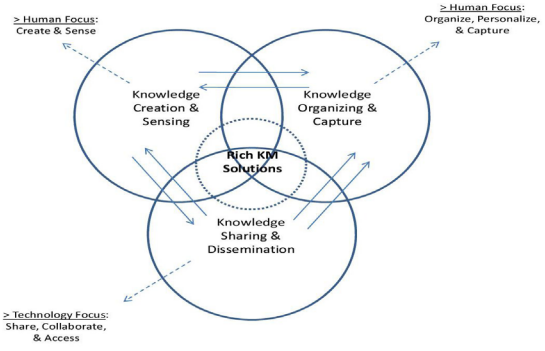
However, one limitation of this model is its focus. First, the overall strategic role outline by Bukowitz and Williams is not included. Secondly, KM's role here is limited to knowledge sharing, omitting the processes of knowledge acquisition/ creation and divestment. This is a perfectly legitimate approach to KM where the focus is on the sharing and retrieval of existing knowledge, but it does not fulfill the scope of the knowledge management definition outlined on this site.

Type / Approach	Tacit	Explicit	Embedded
Sense	Observe	Gather	Hypothesize
Organize	Contextualize	Categorize	Map
Socialize	Share	Disseminate	Simulate
Internalize	Apply, Decide, Act		

Fig 2- KM Matrix by Gamble and Blackwell (2001)

Model 3- Gamble and Blackwell approach - This model attempts to offer a more realistic overview of the KM process. The three broad categories overlap and interact with one another. Like Gamble & Blackwell, the focus is on managerial initiatives. Here too the strategic focus (the "when" and the "why" as opposed to the "what") is omitted. It is noteworthy that this model does include the creation of new knowledge as a specific KM initiative. The model also outlines the relationship of information and information management systems to knowledge management (KM).

Thus, Knowledge management is made in two dimensions: one dimension to manage existing knowledge, which includes developing of knowledge repositories (memos, reports, presentations, and articles), knowledge compilation, arrangement, and categorization. Another is to manage knowledge-specific activities, that is, knowledge acquisition, creation, distribution, communication, sharing and application.



IV. CONTEMPORARIES IN KM

a) **Knowledge Discovery and Detection:** It refers to the processes of identifying existing knowledge sources, as well as discovering hidden knowledge in data and information. This knowledge resides both inside the organization and externally, in customers, suppliers, partners, etc.

b) **Defining Explicit knowledge**: Document management, intelligence gathering, data mining, text mining etc. IT is useful and crucial in this respect.

- Tacit (embodied) knowledge: This includes tools/practices such as knowledge surveys, questionnaires, individual interviews, group interviews, focus groups, network analysis, and observation. IT has a more limited and indirect role.
- **Knowledge Organization & Assessment:** The process of mapping, categorizing, indexing, and evaluating organizational knowledge assets.
- **Data Mining** (also known as Knowledge Discovery in Databases - KDD) is extraction of implicit, previously unknown, and potentially useful information from data bases. The process uses machine learning, statistical correlations, statistical analysis, and sophisticated search strategies to extract data in such a way that the information is easily comprehensible.
- Then the human decides how to turn this information into knowledge. The source data bases are usually already owned by the organization. Data mining is frequently used by marketing departments to learn more about customers and how to better market products and services. The skilled knowledge manager will help create data base search strategies that enable successful data mining.
- **Initiating Discussion Forum** –It is an in-person or electronic forum for staff or like-minded individuals to exchange ideas, post questions, offer answers, or offer help on relevant subjects. Electronic forums also provide ways of archiving (or storing) and searching for previous exchanges. "Listserv" is a type of electronic forum.
- **Identifying Knowledge architect –**It is the staff member who oversees the definitions of knowledge and intellectual processes and then identifies the technological and human resources required to create, capture, organize, access and use knowledge assets. Architecture is the technology and human infrastructure to support the organization's KM initiatives. It includes physical (e.g., hardware and tools) and logical (e.g., knowledge policies) dimensions.
- **Identifying Knowledge assets,** also called intellectual capital, are the human, structural and recorded resources available to the organization. Assets reside within the minds of members, customers, and colleagues and include physical structures and recorded media

- **Content management** systems –These are very relevant to knowledge management (KM) since they are responsible for the creation, management, and distribution.
- **Storytelling-** Storytelling is a very old technique, dating back throughout most of human history. The practice is embedded into our culture; it was the primary form of family entertainment before the television (which is a different medium for story telling), it is mastered by competent politicians and journalists, and it remains as one of the most effective ways to reach someone and move them with your message.

V. IMPLICATIONS FOR MANAGERS

This very ambiguous category of systems refers to most systems used in the sharing, discovery, and creation of knowledge. Failures are generally due to an over reliance on technology, a lack of understanding of the limitations of these systems, improper fit with organizational practices, lack of acceptance, etc. Proper implementation implies paying attention to Organizational fit which helps in carrying out internal assessment of needs and work practices, cost-benefit analysis, etc., also for Organizational acceptance done by involving the user in the design and implementation, through managerial and technical support, and with product champions and deputing and delegating task to Knowledge managers.

Organization which fosters knowledge culture and aims at building congruence between knowledge building applying and connecting it t organization goals individually delegate task of knowledge building and its utilization to respective knowledge managers who look after promoting knowledge sharing through the organization's operational business processes and systems by, among others, strengthening links between knowledge sharing and the information systems, and improving integration among information systems in the organization, to facilitate seamless exchange of information across systems promoting collaborative tools such as activity rooms to facilitate sharing of ideas and work among internal teams and external partners.

VI. CONCLUSION

Knowledge benefits are basic and immediate benefits that a company can see, such as better handling of information and a better understanding of how to use knowledge within a company. Some of the benefits that fall into the intermediate category include things like the ability to solve problems faster and to approach problems with new ideas because of the availability of information and knowledge regarding those problems.

New employees will be able to become efficient much more quickly because there'll be a clear guide to the information they need. Ultimate benefits include the transformational change in any process, functions that result into attainment of long-term objectives of the organization.

Knowledge Management caters to the critical issues of organizational adaptation, survival, and competence in face of increasingly discontinuous environmental change. Essentially, it embodies organizational processes that seek synergistic combination of data and information processing capacity of information technologies and the creative and innovative capacity of human being.

REFERENCES

1. Davenport (1998), Working knowledge: How organizations manage what they know. Boston, MA: Harvard Business School Press.

2. Dignum, (1999),An overview of agents in Knowledge Management, Lecture notes in computer science, Volume 4369, 2006, pp 175-189
3. Greengard(1998), Knowledge management practices within a knowledge-intensive firm: the significance of the people management dimension ,Journal of European Industrial training, Volume 24, Issue 4
4. Hauschild et al, (2001) Critical success factors for implementing knowledge management in small and medium enterprises, Industrial Management and Data System, Vol. 105 Issue: 3, pp.261 – 279
5. Liebowitz (2009), Knowledge management and e-learning, CRC press
6. McKinsey survey, The McKinsey survey of global knowledge management, McKinsey quarterly
7. Markus (2001), Managing Dispersed Knowledge: Organizational Problems, Managerial Strategies, and Their Effectiveness, Journal of Management Studies Volume 38, Issue 7, pages 1037–1051, November 200
8. Malhotra, (1997), KM for e-business Performance advancing information strategyto internet time ,KM and business model innovation
9. Newell et al (2000), Fourth European Conference on Knowledge Management: Oriel College, Oxford
10. Robert S. Seiner (2001), Creating discipline of KM,KM text and cases, page 34-344
11. Sole & Wilson (2002), Storytelling in Organizations: The power and traps of using stories to share knowledge in organizations Harvard graduate school of education
12. Soliman and Spooner (2000), Managing knowledge workers in a knowledge-based economy: the changing role of human resource management in the Msc status companies, Malaysia
13. Ulrich (1998), Delivering Results: A New Mandate for Human Resource Professional, Book
14. Weaver,Bali et.al.(2009), The review of approaches to knowledge management system studies, Journal of Knowledge Management
15. Yahiya and Gob (2002), Managing human resources toward achieving knowledge management. Journal of Knowledge Management, 6(5), 457-468.

Transforming Healthcare Industry: Internet Based Technologies

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1.1 INTRODUCTION

Healthcare sector in India is always been flourishing and is one of the fastest growing sectors. According to (IBEF) Indian healthcare market is expected to reach US$ 372 billion by 2022 which was US$ 160 billion in 2017. The key contributor may include better health awareness, rising income, lifestyle diseases and increasing access to insurance. The government of India intends to increase the spending on healthcare to 3% of the Gross Domestic Product (GDP) by 2022.

This is an era of tech-enable change and healthcare sector is the front runner in this. Technology has helped in rapid evolution of healthcare sector. Now with the help of technology, everything is just a click away. Technology advancement in healthcare has saved countless patients. It has improved the quality of healthcare services and has made a huge impact on all the healthcare providers, patients, hospitals and all the people connected to healthcare services. It has also improved the standardization of healthcare industry by providing improvised healthcare techniques.

Technology in healthcare is providing modernised medical care, reduction in costs, avoiding duplication of tests/procedures and mechanised manual processes. With the increase in the awareness of health and wellness issues among people, they have started playing a major role in the overall process of care. Now, people are managing their own health with use of different new-age apps that deals in prevention and continuous monitoring of health, and they have access to best diagnostic tools, new and cutting-edge treatments and many advance procedures that will make the treatment less excruciating and will provide quick healing to patients. The new treatment technologies have provided better outcomes and has enhanced the quality of life of patients. It has also helped in reducing the costs of many health services. Patients can get advanced treatment at an affordable cost.

Introduction of technology in healthcare, along with expanded infrastructure and

improve efficiencies; is helping in dealing with the different challenges of the healthcare in terms of availability, affordability and quality. Raise in the use of technology in healthcare has given huge opportunities to the providers for improving patient experience and operate more efficiently with the help of expanded association and information sharing among providers. m-health, telemedicine, self-monitoring devices and all the other facilities are evolved through the advancements in technology.

1.2 ROLE OF INFORMATION TECHNOLOGY IN HEALTH CARE

The merging of Information Technology and healthcare is helping in improving the quality, safety and efficiency of healthcare system and has also improved patient care. It enables the healthcare providers and patients to collect, store, retrieve and transfer the information electronically. IT allows the healthcare providers to access and use information about their patients that are stored electronically, and patients can also communicate with their healthcare providers about their condition. E-pharmacy facilitates the consumers or patients to order medicines online from their computer or mobile phone. This has helped many people, especially the elderly people or the people who are sick, as they can get their medicines anytime, at their doorsteps. The people who are working and have no time to search for offline pharmacy can easily order their medicine through e-pharmacy.

EHRs (Electronic Health Records) makes information available to the authorised users, instantly and securely, and provide a correct and clean data. It may include all of the key administrative clinical data relevant to the patient's care under a particular provider; containing patient's past medical history, diagnosis, treatment plans, allergies, immunization dates, laboratory data, progress notes, medications, vital signs and radiology reports. The doctor can provide a better treatment to the patient after reviewing their past medical records. This will help in the reduction of duplication of task and also helps in managing the cost. Robotics helps the surgeons to perform the surgery with more accuracy and smaller incisions. The patients will also be benefited by the Robot-assisted surgery as their will be less pain, less blood loss and fast recovery. The patients will have to stay for a shorter period of time in the hospital (Nishith Desai Associates, 2017). Advanced robotics technology has enabled doctors to perform surgeries with better control and vision, which results in safe and accurate procedures (JOHNS HOPKINS MEDICINE). In India, robotic surgery is in its starting phase. There are eight robots installed in India, five in New Delhi, one in Chennai, one in Nadiad and one in Pune. The first robot was installed in All India Institute of Medical Science (A.I.I.M.S), New Delhi.

1.3 CLOUD COMPUTING AND DATA MINING IN HEALTH CARE INDUSTRY

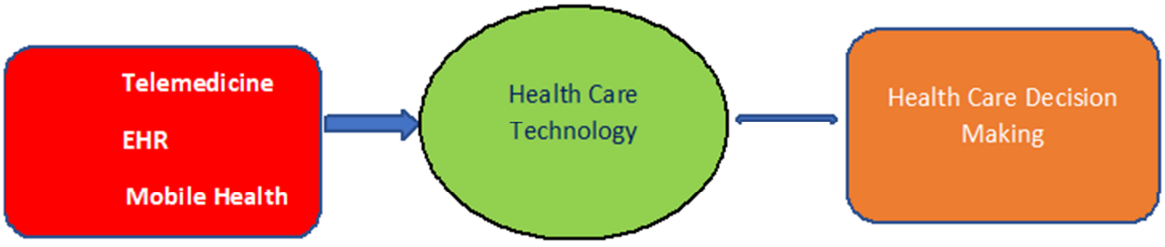
In healthcare industry, bulk of data is generated on daily basis, which is difficult to manage. Cloud helps in easy processing and management of data. It allows people to access their data from anywhere and is also cost effective. Any application under cloud computing can be used just by login into it and customising (eHealth Network, 2016).

Cloud computing increases the efficiency of the healthcare industry and decrease the cost spent on managing the data. Hospitals, doctors, patients, clinics, dispensaries, laboratories, pharmacist, medical consultants and counsellors can all be a part of a system to manage work flow by using cloud computing (Nishith Desai Associates, 2017). The healthcare professionals all around the world can share their knowledge through the use of cloud, which also results in the improvement of the healthcare protocols. It has considerable economic benefits as it provides cost flexibility and has the potential for reducing costs. In cloud computing, the hospitals and healthcare providers can use the applications, hardware, and services on a 'pay per use' which helps to evade heavy capital expenditure on buying and deploying expensive technology. AI (Artificial Intelligence) is the ability of computer algorithms to estimate the conclusions without direct human input. It is used in six healthcare segments: hospital, pharmaceuticals, diagnostics, medical equipment and supplies, medical insurance, and telemedicine. It has many advantages -AI when armed with learning and self-correcting capabilities can improve its accuracy based on feedback; it can gather recent information from various sources and assist physician for providing proper patient care; it also helps in minimizing diagnostic and therapeutic errors that are unavoidable in the human medical practice. An AI system takes out useful information from a large patient population for providing real-time conclusion for health risk alert and health outcome prediction. AI helps in increasing the efficiency and decreasing the cost of healthcare services. With the use of AI, the hospitals can concentrate on patient centric plans as it facilitates in eliminating the unnecessary hospital procedures, which results in faster delivery of healthcare services.

1.4 TELEMEDICINE AND HEALTH CARE INDUSTRY

Telemedicine (TM) is widely used in many medical specialities including psychiatry, dermatology, neurology (Vierhile, Tuttle, Adams, tenHoopen, & Baylor, 2018), ophthalmology (Zapata, et al., 2017) and allergy (Portnoy, Waller, Lurgio, & Dinakar, 2016). It has become an increasingly popular method for assessing medical services between the providers and patients. It is considered more economical as compared to the traditional types of visits in which patients have to meet the doctor time to time. TM when combined with information technologies such as electronic health records (EHR) can change the way care is delivered by developing the process of interaction between patient and provider. It helps in providing healthcare services to the patients irrespective of their location by the use of smartphones and computers. The patients in remote areas can get consultation from the doctors in the urban areas easily. TM enable the transferring of medical images like x-rays and scans and provide video consultation to the patients with their doctor. The patients are educated with the help of images and videos through TM. It also reduces the travelling and medical costs. With the use of telemedicine, a common man can have access to the specialist doctors without any increase in expenses or disturbance in their daily lifestyle. The online doctor consultation (or e-consultation)

provides patients the facility of discussing their problems with the doctor online. This reduces the chances of appointment cancellations or missing an appointment and the revenue of doctors increases.



1.5 MOBILE HEALTH

m-health (mobile health) is a convenient way for the patients to find solutions for their health problems. Mobile technology and wearable devices help the patients in tracking and managing their health data without seeing the healthcare provider. Patient can communicate with their physician or healthcare providers without meeting them with the help of m-health. The healthcare providers can send alerts and reminders through SMS on mobile phones of the patients regarding their medical regimen. The inbuilt mobile sensors or apps are used to capture and interpret the clinical data. Smart technology applications have become popular in mobile health care, example – a smart diagnostic chair designed by (Baek, Chung, Kim, & Park), that could Measure unconstrained heart rate and blood pressure. A mobile user can use intelligent sensors and activators to detect and respond to ambient conditions, the results of the detection can be sent wirelessly to a backend service centre (Curtis, et al., 2008).

E-pharmacies facilitates the consumers or patients to order medicines online from their computer or mobile phone. They associate with the retail pharmacies to deliver the medicines to their consumers at doorsteps. This has helped many people, especially the elderly patients or the people who are sick and cannot go out of the house to a pharmacy. The people who are working and have no time to search for offline pharmacy can easily order their medicine through e-pharmacy. Smart devices combined with technological advancements are able to monitor the changes in the working of a human body. To detect various physiological changes in the human body, monitors and sensors are been combined into wearables. They can track and monitor the weight, posture, sleep patterns, diet and exercise. For monitoring the changes in the health symptoms of an individual; these devices use raw data as input and then gives alert to the user about the potential issues that may arise in future. The wearable aware the user about the forthcoming threats and alerts the human body by consistent monitoring and sensing of the body. Healthcare professionals are often reluctant to engage with technology. There is lack of education and training in deploying the technology in a clinical setting and as a result staff often lack the confidence to utilise the technology effectively. There are concerns about quality, reliability, data overload, privacy and security; one of the

biggest concerns identified by doctors is the limited evidence on outcomes including cost savings. Technologies are praised for saving lives, improving health status and improving the quality of care but at the same time technology is criticised for being one of the dominant factors that is responsible for the continuing increase of medical costs. The "big-ticket" items that are highly visible, for example organ transplantation, diagnostic imaging systems, and new biotechnology products face both criticism and praise. The health care costs are increasing at an annual rate of 7% a year due to the use of medical technology. As a result, the Medicare programme is estimated to go bankrupt in nine years and overall health care cost to go $4 trillion annually in 10 years. The rise in the health care costs is an important reason for the increase in the number of uninsured people, and this cost problem is affecting everyone.

CONCLUSION

21st century health care industry is changing the face of the entire health sector. Internet of things and data analysis is improving the health status and quality of care. Mobile technology and wearables are the new rays of hope for the entire health care sector. Human being is more conscious for health-related issues, that's why mortality rate in our country has been controlled. Clinical diagnostics and telemedicine are the new way to cover the medical procedure in next stage. Data mining and uses of big data has made the life of medical administration ease. This industry is totally based on data, resultant every day, bulk of data has been collected in hospital. Arranging and organization of the bulk data was a challenge but technology has enabled us to put it in a sequence and helping us in decision making. There is still scope in data sciences which could be helpful to rectify and analyze the quantum of the diseases in future. Technological advancement has saved the life of millions of the patients. All stakeholders in health care services including doctors and owners of the hospitals are using data sciences for the standardization of the health care industry.

REFERENCES

Baek, H. J., Chung, G. S., Kim, K. K., & Park, K. S. (2011, november 11). A smart health monitoring chair for nonintrusive measurement of biological signals. *IEEE Trans Inf Technol Biomed, 16*(1), 150-8. doi:10.1109/TITB.2011.2175742

Curtis, D. W., Pino, E. J., Bailey, J. M., Shih, E. I., Waterman, J., Vinterbo, S. A., . . . Machado, L. O. (2008). SMART—An Integrated Wireless System for Monitoring Unattended Patients. *Journal of the American Medical Informatics Association, 15*(1), 44-53. doi:https://doi.org/10.1197/jamia.M2016

eHealth Network. (2016, november 1). *Advantage Cloud for Healthcare in India*. Retrieved from ehealth.eletsonline.com: https://ehealth.eletsonline.com/2016/11/advantage-cloud-for-healthcare-in-india/

IBEF. (2020, december 4). *Indian Healthcare Industry Analysis*. Retrieved from www.ibef.org: https://www.ibef.org/industry/healthcare-presentation#

JOHNS HOPKINS MEDICINE. (n.d.). *Types of Minimally Invasive Surgery*. Retrieved from www.hopkinsmedicine.org:

https://www.hopkinsmedicine.org/minimally_invasive_robotic_surgery/types.html

Nishith Desai Associates. (2017, february). e-Health in India Legal, Regulatory and Tax Overview. Nishith Desai Associates.

Portnoy, J. M., Waller, M., Lurgio, S. D., & Dinakar, C. (2016, july 7). Telemedicine is as effective as in-person visits for patients with asthma. *Annals of Allergy, Asthma & Immunology, 117*(3), 241-245. doi:https://doi.org/10.1016/j.anai.2016.07.012

Vierhile, A., Tuttle, J., Adams, H., tenHoopen, C., & Baylor, E. (2018, september 1). Feasibility of Providing Pediatric Neurology Telemedicine Care to Youth with Headache. *Journal of Pediatric Health Care, 32*(5), 500-506. doi:https://doi.org/10.1016/j.pedhc.2018.02.004

Zapata, M. A., Arcos, G., Fonollosa, A., Abraldes, M., Oleñik, A., Gutierrez, E., & Arumi, J. G. (2017, january 1). Telemedicine for a General Screening of Retinal Disease Using Nonmydriatic Fundus Cameras in Optometry Centers: Three-Year Results. *Telemedicine and e-Health, 23*(1), n.d. doi:https://doi.org/10.1089/tmj.2016.0020

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