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EFFECT OF CREDIT RISK MANAGEMENT ON FINANCIAL PERFORMANCE: AN EMPIRICAL STUDY OF NEPALESE COMMERCIAL BANKS

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ABSTRACT
This study empirically explored the effect of credit risk management on the financial performance of ten listed commercial banks in Nepal for the period, 2011/12-2017/18. Credit risk management, the independent variable, was surrogated by three parameters- Non-Performing Loan to total Loan Ratio (NPLLR); Non-performing Loan to total Deposit Ratio (NPLDR) and Capital Adequacy Ratio (CAR). Return on asset (ROA) and Return on equity (ROE) was used as proxies for financial performance. Using the ordinary least squares (OLS) regression as data estimation technique, the study revealed that all the three credit risk parameters capital adequacy, loans and advances and liquidity have a significant relationship with ROA and ROE. Based on the findings, the study recommended that the management of commercial banks should develop rigorous and robust credit policies that will enable banks to effectively assess the creditworthiness of their customers. The regulatory agencies should also come up with modern credit risk measurements, identification and control. Prompt and necessary action should also be taken against the management of any bank that flouts their credit risk guidelines in order to avoid unpleasant distress in the financial system in Nepalese context.

KEYWORDS
return on asset, return on equity, capital adequacy ratio, non-performing loan ratio, loans and advances, liquidity.

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INTRODUCTION
Performance evaluation is the important approach for enterprises to give incentive and restraint to their operators and it is an important channel for enterprise stakeholders to get the performance information. The performance evaluation of a commercial bank is usually related to how well the bank can use its assets, shareholders' equities and liabilities, revenues and expenses. The performance evaluation of banks is important for all parties including depositors, investors, bank managers and regulators. Thus, this study is focused towards analyzing how much of impact does the adequate capital and the management of credit risk holds in defining the performance of Nepalese banking sectors. It is crucial to know whether this optimism is truly warranted. It is against this backdrop that the present study set out to empirically ascertain whether credit risk management and capital requirement have enhanced profitability of Nepalese banks (Poudel, 2012).

Poor asset quality and low levels of liquidity are the two major causes of bank failures and represented as the key risk sources in terms of credit and liquidity risk to examine its impact on bank profitability. The study found that credit risk management is an important predictor of banks financial performance. In this study it was stated that the degree of impact strongly depends on regulatory environment in which banks operate. The most interesting aspect of the result is the positive and significant relationship between capital adequacy and banks financial performance. Liyugi (2007) found negative relationship between credit risk and liquidity on banks performance.

The increase in loan loss provision decreases the profitability whereas increase in total loan and advances increase profitability. The effect of credit risk on bank performance measured by the return on assets of banks is cross-sectional invariant. That is, nature and managerial pattern of individual firms do not determine the impact. Loan and advances ratio (LA) coefficient exerts most significant positive effect on the profitability across the banking firms (Funso et.al, 2013).

The capital adequacy ratio is a key measure to determine the health of banks and financial institutions. Capital adequacy refers to the sufficiency of the amount of equity to absorb any shocks that the bank may experience. In Nepal the commercial banks need to maintain at least 6 percent Tier-1 capital and 10 percent total capital (Tier 1 and Tier 2), that is, core capital and supplementary capital respectively. Tier 1 capital consists of paid-up capital, share premium, non-redeemable preference share, general reserve fund, accumulated profit, capital redemption reserve, capital adjustment fund, and other free reserves. The Tier 2 capital comprises of capital comprises of general loan loss provision, assets revaluation reserve, hybrid capital instruments, subordinated term loan, exchange equalization reserve, excess loan loss provision, and investment adjustment reserve. These minimum capital adequacy requirements are based on the risk-weighted exposures of the banks (Etzel, 2010).

Mostly nonperforming loan to total loan ratio, net nonperforming loan to total loan ratio is used as the indicators of the quality of assets of the commercial banks. (Baral, 2005). The maximum NPL allows for a healthy bank is 5 percent. Management quality plays a big role in determining the future of the bank. The management has an overview of a bank's operations, manages the quality of loans and has to ensure that the bank is profitable. Though there are above mentioned studies, still there are no such studies using more recent data are available in Nepal.

In today's world the performance of commercial bank is affected by many factors. But the major concern of the study here is to understand how the capital adequacy and credit risk management influences the overall profitability of the bank. The importance of the capital is to finance the assets as well as to protect the long term and short-term creditors who make the fund available to the business. The health of the financial system has important role in the country as its failure can disrupt economic development of the country (Das & Ghosh, 2007). Financial performance is company's ability to generate new resources, from day-to-day operation over a given period of time and it is gauged by net income and cash from operation.

Similarly, Capital adequacy is a percentage ratio of a financial institution's primary capital to its assets, used as a measure of its financial strength and stability. A ratio that can indicate a bank's ability to maintain equity capital sufficient to pay depositors whenever they demand their money and still have enough funds to increase the bank's assets through additional lending.

The remainder of this study is structured as follows: Section two literature review, section three describes statement of the problems, section four objectives of the study, section five research methodology, and final section analysis the results and conclusions.

LITERATURE REVIEW
Furlong and Keeley (1991) concluded that profit maximization, avoidance of bankrupt and their negative externalities on the financial system and incentive to increase risky assets.

Sinkey (1992) argued that the goal of credit risk management is to maximise a bank's risk adjusted rate of return by maintaining credit risk exposure within acceptable parameters. Banks need to manage the credit risk inherent to the entire portfolio as well as the risk in individual credits as transactions.

Rodrik (1992) has examined a panel of data for 198 banks found consistent evidence that the imposition of banks' lending rates and thus contributes to lower credit growth. The study on credit risk management concluded that high NPLs increase the uncertainty regarding the capital position of the banks and therefore limit their access to financing.

Robert and Gary (1994) found that net effect of increasing the ratio of substandard credits in the bank's credit portfolio and decreasing the bank's profitability, the well capitalized banks face lower need to external funding and lower bankruptcy and funding costs, and this advantage translates into profitability. Therefore, researches widely posit that the more capital a bank has, the more resistant it will be to failure.

In the study of Brownbridge (1998) has claimed that the single biggest contributor to the bad loans of many of the failed local banks was insider lending and further observed that the second major factor contributing to bank failure were the high interest rates charged to borrowers operating in the high-risk. The study examined a panel of data for 201 banks. The research found that impact of high non-performing loans in banks portfolio is reduction in the bank profitability especially when it comes to disposals.

Huzinga (1999) found that a bank should hold adequate capital against these risks and that they are adequately compensated for risks incurred.

Stoica (2000) has found evidence that the introduction of higher minimum bank capital requirements may well induce an aggregate slowdown of bank credit.

Barrios and Blanco (2000) found that bank performance and capital adequacy have impact on bank's profitability.

Staikouras and Wood (2003) concluded that a long-run relationship between profitability and concentration, capital asset ratio, loan-asset ratio and demand deposits-deposits ratio.

Li Yugi (2007) examined the determinants of bank's profitability and its implications on risk management practices in the United Kingdom. The study employed regression analysis on a time series data between 1999 and 2006. Six measures of determinants of bank's profitability were employed. They used Liquidity, credit and capital as internal determinants of bank's performance. GDP growth rate, interest rate and inflation rate were used as external determinants of banks profitability. The six variables were combined into one overall composite index of bank's profitability. Return on Asset (ROA) was used as an indicator of bank's performance. The study found that liquidity and credit risk have negative impact on bank's profitability.

Samuel et al. (2013) investigated the relationship between commercial banks' profitability and credit risk in Ghana by taking into consideration six commercial banks in their sample which were chosen using purposive sampling techniques for the period 2005-2009. The study employed secondary data only which were obtained from annual financial statements of respective banks for the period under study. The multiple regression models were employed to test the relationship which exists between the variables in the model. The ratio of Net profit to equity fund (ROE) were considered as a measure of banks' profitability and stood as a dependent variable in the model. Three ratios which were employed to represent credit risk in the model were (i) Non-performing loan to total loans and advances, (ii) Net charge off (impairment) to total loans & advances and (iii) Pre-provision profit to net total loans and advances. The study concluded that credit risk as positive and significant relationship with banks' profitability in Ghana. Their observations implied that as the probability of borrowers to default increases, commercial banks in Ghana realizes more profits.

Poudel (2013) appraised the impact of the credit risk management in bank's financial performance in Nepal using time series data from 2001 to 2012. The result of the study indicates that credit risk management is an important predictor of bank's financial performance. It also concluded that commercial banks are not giving more focus on credit risk mitigation that could help them to increase their eligible capital components, which is the another cause that some of the commercial bank have lower capital adequacy. Majority of the bankers and experts believe that the present capital adequacy framework prescribed by the central bank is adequate and the banks should follow the standards for the betterment of every concerned parties associated directly and indirectly with the performance and risks of the banks.

Jha and Hui (2013) analyzed the financial performance of different ownership structured commercial banks in Nepal based on their financial characteristics and identify the determinants of performance exposed by the financial ratios, which were based on CAMEL Model. The study financially analyzed eighteen commercial banks for the period 2005 to 2010. In addition, econometric model (multivariate regression analysis) by formulating two regression models was used to estimate the impact of bank-specific variables on the financial profitability namely return on assets and return on equity of these banks. Furthermore, the estimation results reveal that return on assets was significantly influenced by capital adequacy ratio, interest expenses to total loan and net interest margin, while capital adequacy ratio had considerable effect on return on equity.

Tamimi and Obeidat (2014) conducted a study aimed to identify the most important factors that determine the capital adequacy of commercial banks of Jordan in Amman Stock Exchange for the period from 2000 - 2008 using multiple linear regression analysis and the correlation coefficient (Pearson Correlation). There is a statistically significant positive correlation between the degree of capital adequacy in commercial banks and the following independent factors: liquidity risk, and the rate of return on assets. In another hand, there is an inverse relationship with statistical significance between the degree of capital adequacy of commercial banks and factors independent of the following: the rate of return on equity and interest rate risk. There is an inverse relationship is not statistically significant between the degree of capital adequacy in commercial banks and factors independent of the following: capital risk, credit risk, and the rate of force-revenue. As shown by the results of the study that the independent variables combined with a relatively high effect on the dependent variable and the changes that occur within, as the percentage of the interpretation of the independent variables of the dependent variable reached approximately 61 percent.

In the study conducted by Odunga et al. (2014) have examined the effect of bank specific performance indicators, credit risk and capital adequacy on the operating efficiency of commercial banks in Kenya. Specifically, we sought to establish the effect of bank specific credit risk ratios (Net charge off to gross loans ratio, loan loss provision to total loans ratio, loan loss provision to equity, loan loss reserves to equity ratio) and capital adequacy ratios (Core capital ratio, risk-based capital ratio, total capital ratio and equity capital to total assets ratio) on their operating efficiency. The study adopted an explanatory research design and analysed the panel data using Fixed Effects Regression. The results of the study indicated that the previous year operational efficiency and risk based capital ratio positively and significantly affected the bank's operating efficiency.

Ogboi and Unuafe (2014) conducted a study to find out the impact of credit risk management and capital adequacy on the financial performance of commercial banks in Nigeria. The data for the study were obtained from the published financial statement of six out of twenty-one banks operating in Nigeria as at December 2009. Panel data regression analysis was used to investigate the extent to which credit risk management and capital adequacy affect bank's financial performance in Nigeria in the period 2000 to 2009. The results showed that sound credit risk management and capital adequacy impacted positively on bank's financial performance with the exception of loans and advances which was found to have a negative impact on banks' profitability in the period under study.

Ikpefan (2014) examined the extent of the impact of capital adequacy, management and performance of the commercial banks in Nigeria (1986-2006). Capital adequacy ratios is found to have a negative impact on earnings. The researcher measured the efficiency of the management and operational expenses and found that there is a negative correlation to the return on capital. The implications of this study, among other things, pointed out that sufficient shareholders' funds can contribute to the promotion of Nigerian commercial banks,' increase performance and also increase customer confidence, especially after the global financial crisis, which has led to huge losses in the Nigerian financial system.

Samuel, Olausi and Abiola (2015) conducted a study to analyse the impact of credit risk management on the commercial banks performance in Nigeria. The aim of this study was to investigate the impact of credit risk management on the performance of commercial banks in Nigeria. Financial reports of seven commercial banking firms were used to analyse for seven years. The panel regression model was employed for the estimation of the model. In the model, Return on Equity (ROE) and Return on Asset (ROA) were used as the performance indicators while non-performing loans (NPL) and capital adequacy ratio (CAR) as credit risk management indicators. The findings revealed that credit risk management has a significant impact on the profitability of commercial banks' in Nigeria.

David and Osemwegie (2017) looked at the importance of capital adequacy and its impact on the financial business in the Nigerian banks through GLS estimator technique Statements for the period from 2007 to 2016. The application and study proved through empirical evidence the impact of capital adequacy in promoting financial business to the banks of Nigeria supporting the overriding impact of capital adequacy in improving the financial deeds of banks. Capital adequacy is closely linked to the economic growth of a country. The issue of capital adequacy in banks has gained significant importance under global regulatory changes especially in recent years as a result of the increased risks and financial crises they face. The interest of the industrialized countries in the subject of capital adequacy and the need to unify their control systems (Basel III), led them to make attempts to strengthen the capacity of global capital and rules. In order to avoid risks and transition of liquidity more rules and regulations were set up to reach to a more flexible banking sector and resolve problems. This has created safety margins, leverage rates and introduced liquidity risk management indicators to have high quality capital during periods of stress and crisis.

Joseph and Tabitha (2017) try to investigate the impact of capital on the financial performance in the context of commercial banks in Kenya. They found that the core capital to total risk weighted assets ratio and the total capital to total risk weighted assets ratio decreased for both the Tier I and Tier II banks during the years 2010 and 2015. Accordingly, both Tier I and Tier II banks upgraded these two ratios at a significantly higher level than the set minimum requirement of 8% and 12%, respectively.
Nwude and Okeke (2018) have found that credit risk management had a positive and significant impact on total loans and advances, the return on asset and return on equity of the deposit money banks. The study recommended that bank managers need to put more efforts to control the non-performing loan by critically evaluating borrowers' ability to pay back. The regulator should strengthen its monitoring capacity in this regard.
Oduro, Asiedu and Gamali Gadzo (2019) have observed that variables such as capital adequacy, operating efficiency, profitability, and net interest margin are inversely related to credit risk. Conversely, bank size and financing gap tend to relate positively with credit risk. Also, analysed changes in inflation tend to positively affect credit risk. Again, it was observed that, increase in bank credit risk negatively affects corporate financial performance which is consistent with Basel accord. Thus, for banks to survive in their industry, critical attention needs to be paid to management of its credit risk exposure.
Gadzo, Kportorgbi and Gatsi (2019) have found that operational risk influences the financial performance of the universal banks in Ghana negatively. Furthermore, the study indicated that bank specific variables measured by (asset quality, bank leverage, cost to income ratio and liquidity) significantly influence credit risk, operational risk as well as the financial performance of the universal banks positively.
In Nepalese context, there also have various efforts being made to find out answers for some of the questions like what is the role of capital adequacy requirement set by NRB? Similarly, the studies on profitability measurement are scarce in context of Nepal. In order to understand the performance of bank it's necessary to understand the determinants of profitability. But in Nepalese context there are very few studies with small sample sizes to analyse the factors affecting profitability. This study has focused on what is the role of capital adequacy in shaping the bank performance? What is the effect of bank liquidity in its profitability? How non-performing loan does contribute in determining the bank performance? How does loan and advances affect the profitability of bank?

STATEMENT OF THE PROBLEM
This study therefore deals with the following issue in the context of Nepalese banks: What are determinants (Capital Adequacy Ratio, Non-performing Loan, Loan Loss Provision, Liquid Assets Ratio and Credit Deposit Ratio) of profitability of Nepalese?

OBJECTIVES OF THE STUDY
The major objective of this study is to analyse the determinants (Capital Adequacy Ratio, Non-performing Loan, Loan Loss Provision, Liquid Assets Ratio and Credit Deposit Ratio) of profitability of Nepalese.

RESEARCH METHODOLOGY
The study is based on the secondary data that were collected from the 10 commercial banks of Nepal. The sample banks are Bank of Kathmandu, Citizen International Bank, Everest Bank, Himalayan Bank, Kumari Bank, Standard Chartered Bank, Laxmi Bank, Machhapuchhre Bank, Nabil Bank and Nepal Bangladesh Bank. The main sources of data are annual report of respective commercial banks which were collected from the website. The data were collected for return on equity and return on assets as the dependent variables. Whereas, non-performing loan/total loans and advances, loan loss provision/total loan, loans and advances/total deposit, total deposit/ loans and advances and capital adequacy ratio as independent variables. This study employs panel data techniques to determinants of profitability of commercial banks in Nepal for the period of 2011/12-2017/18.
This study has employed descriptive, correlation and causal comparative research design to deal with issues associated with the credit risk and bank performance in the context of Nepal. The descriptive research design has been employed to describe, measure, compare, and classify the financial situations of Nepalese commercial banks. The study also applied casual comparative research design to test the significance of variables on performance of Nepalese commercial banks. The basic purpose of employing causal comparative research design in this study is to understand and examine whether it is possible to predict bank performance measured by ROA and ROE on the basis of information about credit risk variables.

THE MODEL

In order to explain the effect of credit risk on bank performance have been used in this study. The multiple regression model of the form including all variables as specified in following equations have been used:

$ROA_{it} = \beta 0 + \beta_1 CAR_{it} + \beta_2 NPL_{it} + \beta_3 LA_{it} + \beta_4 LLP_{it} + \beta_5 LQD_{it} + {}_t e_{it}$ .... (I)

$ROE_{it} = \beta 0 + \beta 1 CAR_{it} + \beta_2 NPL_{it} + \beta_3 LA_{it} + \beta_4 LLP_{it} + \beta_5 LQD_{it} + {}_t e_{it}$ .... (II)

Where,
ROA_{it}=Return on Assets of Bank *'i'* for period 't'
ROE_{it} = Return on Equity of Bank *'i'* for period 't'
CAR_{it}= Capital Adequacy Ratio to Total Risk Weighted Assets of Bank 'i' for period 't'
NPL_{it}=Non-Performing Loan to Total Loans and Advances of Bank *'i'* for period 't'
LA_{it} =Loans And Advances to Total Deposit of Bank '*i*' for period 't',
LLP_{it}=Loan Loss Provision to Total Loan of Bank *'i'* for period 't',
LQD_{it}= Liquid Assets to Deposit and Borrowings of Bank 'i' for period 't',
βo= constant
β_1-β_5= Coefficient parameters
e_{it} = error terms,

VARIABLES AND HYPOTHESIS

Dependent Variables

The dependent Variables and Independent Variables have been used in this study are as follows:

Profitability: Return on Asset (ROA)

The Return on Asset (ROA) and the Return on Equity (ROE) have been used extensively as measures of profitability. ROA indicates how effectively a bank is managing it assets to generate income. ROA is the income earned on each unit of asset usually expressed as percentage. The problem with ROA is that it excludes from the total assets off-balance sheet items (for instance, assets acquired through a lease) thereby understating the value of assets.

Profitability: Return on Equity (ROE)

As an alternative measure of profitability the Return on Equity (ROE) is computed by dividing net income by equity. It measures the income earned on each unit of shareholders' capital. The shortfall of this measure is that banks with high financial leverage tend to generate a higher ratio. Banks with high financial leverage may be associated with a higher degree of risk although these banks may register high ROE. Thus ROE may sometimes fall short in exposing the true financial health of banks. Another challenge with using ROE is that it is affected by regulation. However, ROE is commonly used in conjunction with ROA.

Independent Variables

The following Independent Variables have been used in study:

Non-Performing Loan

The quality of assets held by a bank depends on exposure to specific risks, trends in non-performing loans, and the health and profitability of bank borrower. The study also reports the effect of credit risk on profitability appears clearly negative, this result may be explained by taking into account the fact that the more financial institutions are exposed to high risk loans, the higher is the accumulation of unpaid loans, implying that these loan losses have produced lower returns to many commercial banks (Miller &Noulas, 1997).

H1: There is significant and negative relationship between non-performing loan and bank's profitability.

Loan Loss Provision

Loan loss provision is an amount of money that a bank set aside from its annual earnings as a precaution against possible loss of a non-performing loan, or to off-set a lost credit facility. Ahmad and Ariff (2007) examined the key determinants of credit risk of commercial banks on emerging economy banking systems compared with the developed economies and study found that an increase in loan loss provision is also considered to be a significant determinant of potential credit risk.

H2: There is significant and negative relationship between loan loss provision and banks profitability.

Loans and Advances

Loans and advances is a facility granted to a bank customer that allows the customer make use of banks funds which must be repaid with interest at an agreed period. Kithinji (2010) analysed the effect of credit risk management measured by the ratio of loans and advances on total assets and the ratio of non-performing loans to total loans and advances on return on total asset in Kenyan banks. The study found that the bulk of the profits of commercial banks are not influenced by the amount of credit and non-performing loans. The implication is that other variables apart from credit and non-performing loans impact on banks' profit.

H3: There is significant and positive relationship between loan and advance and banks profitability.

Liquidity

Liquidity measures the ability of banks to meet short-term obligation or commitments when they fall due. Liquidity is a prime concern for banks and the shortage of liquidity can trigger bank failure. Banking regulators also view liquidity as a major concern. This is because banks without sufficient liquidity to meet demands of their depositors' risk experiencing bank run. Holding assets in a highly liquid form tends to reduce income as liquid asset are associated with lower rates of return. For instance, cash which is the most liquid of all assets is a non-earning asset. It would therefore be expected that higher liquidity would negatively correlate with profitability.

H4: There is significant and negative relationship between liquidity and bank's profitability.

Capital Adequacy Ratio

Capital adequacy ratio (CAR) is chosen because it is the core measure of a bank's financial strength from a regulator's point of view. Capital adequacy ratio consists of the types of financial capital considered as the most reliable and liquid, primarily shareholders' equity. Bank with good capital adequacy ratio have good profitability. With good capital requirement, commercial banks are able to absorb loans that have gone bad. Bourke (1989) report a positive and significant relationship between capital adequacy and profitability. As indicated above following variables were taken to test the effects of credit risk management on the financial performance of the commercial banks. The study used the tools to test the significance of the independent variables and dependent variables.

H5: There is significant and positive relationship between capital adequacy ratio and bank's profitability.

RESULTS AND CONCLUSION

To achieve the purpose, the method applied to analyse secondary data are descriptive statistics, Pearson correlation coefficients and stepwise cross sectional regression analysis. The detail of data analysis has been presented in the respective sections.

DECEPTIVE STATISTICS

In this section it shows the average, standard deviation, minimum and maximum of overall data of profitability (ROA and ROE) as dependent variables, capital adequacy, non-performing loan ratio, loan and advance, loan loss provision ratio and liquidity are independent variables.

In the Table 1 which shows the descriptive analysis of variables, the return on asset ROA of 10 sample commercial banks is 1.84 percent on average. The return on assets varies in a wide range from a minimum of 0.92 percent to a maximum of 2.82 percent. The return on equity for sample bank on average is 17.57 percent with standard deviation of 2.66. The minimum value for return on equity is 9.79 whereas maximum value stands for 28.27 percent.

TABLE 1: DESCRIPTIVE STATISTICS (N=70)

Measures\Variables	**Mean**	**Standard Deviation**	**Minimum**	**Maximum**
ROA (%)	1.84	0.22	0.92	2.82
ROE (%)	17.57	2.66	9.79	28.27
CAR (%)	12.85	0.71	11.32	16.31
NPL (%)	1.82	1.94	0.4	4.46
LA (%)	77.17	2.15	57.73	84.4
LLP (%)	1.05	0.66	0.4	2.47
LQD (%)	31.62	1.52	25.38	40.15

Source: Annual report of sample commercial banks and results are drawn from SPSS 21.

The capital adequacy ratio for sample bank on average is 12.85 percent with standard deviation of 0.71. The minimum value for capital adequacy ratio is 11.32 whereas maximum value stands for 16.31 percent. The nonperforming loan for sample bank on average is 1.82 percent with standard deviation of 1.94. The minimum value for non-performing loan is 0.4 whereas maximum value stands for 4.46 percent. The loan and advance for sample bank on average is 77.17 percent with standard deviation of 2.15. The minimum value for loan and advance is 57.73 whereas maximum value stands for 84.46 percent. The loan loss provision for sample bank on average is 1.05 percent with standard deviation of 0.66. The minimum value for loan loss provision for is 0.40 whereas maximum value stands for 2.47 percent. The liquidity for sample bank on average is 31.62 percent with standard deviation of 1.52. The minimum value for liquidity for is 25.38 whereas maximum value stands for 40.15 percent.

CORRELATION ANALYSIS

In this section the correlation between profitability measures; return on asset and return on equity and explanatory variables; capital adequacy ratio, non-performing loan, loans & advances, loan loss provision and liquidity have been presented and analysed. A correlation matrix used to ensure the correlation between explanatory variables. Cooper & Schindler (2009) suggested that a correlation coefficient above 0.8 between explanatory variables should be corrected for because it is a sign for multicolinary problem. Hair et al. (2006) argued that correlation coefficient below 0.9 may not cause serious multicolinary problem.

TABLE 2: PEARSON'S CORRELATION MATRIX FOR DEPENDENT AND INDEPENDENT VARIABLES DURING THE PERIOD OF 2007/08 TO 2017/018

	ROA	ROE	CAR	NPL	LA		LLP	LQD
ROA	1							
ROE	0.917**	1						
CAR	0.524**	0.499**	1					
NPL	-0.306**	-0.396**	-0.633**	1				
LA	0.243**	0.139	0.319**	-0.274**	1			
LLP	0.348**	0.470**	0.575**	0.785**	0.239**		1	
LQD	-0.618**	-0.631**	0.516**	-0.347**	0.099		-0.417**	1

Source: Annual report of sample commercial banks and results are drawn from SPSS 21.

The single asterisk (*) sign indicates that result is significant at 1 percent level, double asterisk (**) sign indicates that result is significant at 5 percent level.

The ROA reflects the ability of a bank's management to generate profits from the bank's assets and this profitability measure is correlated with other explanatory variables either positively or negatively. In Table 2 below, the correlation analysis was undertaken between profitability measure; return on asset and return on equity and explanatory variables; capital adequacy, non-performing loan, loans & advances, loan loss provision and liquidity.

As per the Table 2, the correlation coefficient between return on asset and loans and advances was 0.243 which is the smallest positive coefficient as compared to other variables, this mean that commercial banks loans and advances have small association with profitability. This result shows that the liquidity of commercial banks which measured by the ratio of liquid assets to deposit have negative correlation with the profitability measured by return on asset.
Return on equity (ROE) is more concerned about how much the bank is earning on their equity investment. As described in the above table there is a positive relationship between return on equity and capital adequacy, loans & advances and liquidity. Again in this case liquidity has a considerable relationship with ROE (a coefficient of 0.631) whereas there is a negative correlation of –0.396 between return on equity and non-performing loan.

REGRESSION ANALYSIS

In order to test the statistical significance and robustness of the results, this study also relies on secondary data analysis based on cross-sectional regression model as specified earlier. It basically deals with regression results from various specifications of the model 1 and model 2 to examine the estimated relationship of bank performance (ROA and ROE) with capital adequacy and credit risk variables for cross-sectional data of 10 sample commercial banks that include 70 observations during the period 201/11 through 2017/18.

REGRESSION ANALYSIS OF RETURN ON ASSETS

The Table 3 shows that the beta coefficient for capital adequacy ratio is positive with return on asset which indicates that higher the capital adequacy ratio higher would be banks profitability.

TABLE 3: ESTIMATED RELATIONSHIP FROM REGRESSION OF RETURN ON ASSETS ON CAPITAL ADEQUACY, CREDIT RISK VARIABLES, AND LIQUIDITY RATIO FOR 10 SAMPLE BANKS WITH 70 OBSERVATIONS DURING THE PERIOD 2012 THROUGH 2018

Models	Intercept	CAR	NPL	LA	LLP	LQD	F	Adj. R^2	SEE
I	-0.010 (-2.15)*	0.232 (6.85)*					46.97*	0.269	0.016
II	0.023 (11.98)*		-0.141 (3.58)*				12.81*	0.086	0.018
III	-0.011 (-1.01)			0.040 (2.79)*			7.76*	0.051	0.019
IV	0.026 (11.36)*				0.675 (4.13)*		17.07*	0.114	0.018
V	-0.023 (-4.64)					-0.143 (8.74)*	76.43*	0.376	0.015
VI	-0.032 (-4.83)	0.124 (3.57)*					32.09*	0.427	0.014

Source: Annual report of sample commercial banks and results are drawn from SPSS 21

The single asterisk (*) sign indicates that result is significant at 1 percent level.

The Table 3 shows that the beta coefficient for loan and advance is positive with return on asset which indicates that higher the loan and advance higher would be banks profitability and it is significant and 1 percent level. The table shows that the beta coefficient for loan loss provision is positive with return on asset which indicates that higher the loan loss provision higher would be banks profitability. It is significant and 1 percent level. The table shows that the beta coefficient for liquidity ratio is negative with return on asset which indicates that higher the liquidity ratio lower would be banks profitability. It is significant and 1 percent level.

REGRESSION ANALYSIS OF RETURN ON EQUITY

The Table 4 shows that the beta coefficient for capital adequacy ratio is positive with return on equity which indicates that higher the capital adequacy ratio higher would be banks profitability.

TABLE 4: ESTIMATED RELATIONSHIP FROM CROSS-SECTIONAL REGRESSION OF RETURN ON EQUITY ON CAPITAL ADEQUACY, CREDIT RISK VARIABLES, AND LIQUIDITY RATIO FOR 10 SAMPLE BANKS WITH 70 OBSERVATIONS DURING THE PERIOD 2011/12 THROUGH 2017/18

Model	Intercept	CAR	NPL	LA	LLP	LQD	*F*	*Adj. R^2*	*SEE*
I	-0.006	1.608					41.07*	0.243	0.120
	(0.17)	(6.41)*							
II	0.227		-1.329				23.07*	0.150	0.128
	(17.05)*		(-4.80)*						
III	0.067			0.167			2.44***	0.011	0.138
	(0.825)*			(1.56)***					
IV	0.260				6.622		35.09*	0.214	0.123
	(16.613)*				(1.118)*				
V	-0.123					-1.061	82.08*	0.393	0.108
	(-3.403)					(9.060)*			
VI	-0.116	0.529	-0.392			-0.851	32.93*	0.434	0.104
	(-2.45)**	(-1.72)***	(-1.34)			(6.44)*			

Source: Annual report of sample commercial banks and results are drawn from SPSS 21

The single asterisk (*) sign indicates that result is significant at 1 percent level, double asterisk (**) sign indicates that result is significant at 5 percent level and triple asterisk (***) sign indicates that result is significant at 10 percent level.

The study reveals that capital adequacy, loans and advances and liquidity has positive significant relationship with ROA whereas nonperforming loan to total loan and loan loss provision to total loan have negative and significant relation with ROA. In case of ROE, loan loss provision to total loan has negative and significant relation with ROE. Liquidity, capital adequacy, loans and advances and non-performing loan has positive and insignificant relation with ROE.

SUMMARY AND CONCLUSIONS

Credit risk management is an important predicator of banking financial performance thus success of bank performance depends on risk management. Since the risk management in general has very significant contribution to bank performance, the banks are advised to put more emphasis on risk management.
Capital adequacy is a percentage ratio of a financial institution's primary capital to its assets, used as a measure of its financial strength and stability. A ratio that can indicate a bank's ability to maintain equity capital sufficient to pay depositors whenever they demand their money and still have enough funds to increase the bank's assets through additional lending. Banks list their capital adequacy ratios in their financial reports. It is stated in terms of equity capital as a percent of assets. Capital requirements imposed by regulators tend to be simple mechanical rules rather than applications of sophisticated risk models.
The major objective of this study is to analyse the effect of credit risk management and capital adequacy on performance of commercial banks in Nepal. However, the specific objectives are to examine the relationship of capital adequacy with bank performance in terms of ROA and ROE, to examine the capital adequacy, credit measures and non-performing loan in commercial bank of Nepal, to determine whether credit risk measured by nonperforming loan, loan loss provision, and loans & advances affects bank performance in terms of ROA and ROE.

This result shows that the liquidity of commercial banks which measured by the ratio of liquid assets to deposit have negative correlation with the profitability measured by return on asset. Return on equity (ROE) is more concerned about how much the bank is earning on their equity investment. As described in the above table there is a positive relationship between return on equity and capital adequacy, loans & advances and liquidity.

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INNOVATIONS IN MARKET SEGMENTATION: A REVIEW

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ABSTRACT

Even though market segmentation is one of the most established concepts in marketing, there are still some shortfalls in the body of research, which create a gap between theory and practice and lead to failure in the implementation of segmentation. This research paper highlights the need of using a new theoretical foundation of market segmentation which will help the FMCG companies to segment the market in competition oriented marketing to gain fruitful results

KEYWORDS
FMCG, convenience, promotion, price, purchase location, quality.

JEL CODE
M31

INTRODUCTION

When it comes to marketing strategies, most people spontaneously think about the 4P (Product, Price, Place, Promotion) – maybe extended by three more Ps for marketing services (People, Processes, Physical Evidence). Market segmentation and the identification of target markets, however, are an important element of each marketing strategy. They are the basis for determining any particular marketing mix. The importance of market segmentation results from the fact that the buyers of a product or a service are no homogenous group. Actually, every buyer has individual needs, preferences, resources and behaviors. Since it is virtually impossible to cater for every customer's individual characteristics, marketers group customers to market segments by variables they have in common. These common characteristics allow developing a standardized marketing mix for all customers in this segment.

REVIEW OF LITERATURE

As long as companies have been competing for sales, markets have been separated into smaller homogenous markets (Ginter 1956). According to the founder of the market segmentation concept, Smith (1956), market segmentation is a brief and temporary phenomenon. Effective use of this tool may result in more official recognition of market segments through seeing groups of customers as individual markets. Market segmentation refers to looking at a heterogeneous market as smaller homogeneous markets, in order to be able to change product preferences to significant market segments' needs (Smith 1956). These segments will be subjected to similar marketing activities in order to create required behaviour (Söderlund 1998). Thus, the underlying principle for segmentation is that the market is fragmented; hence, a homogenous market does not exist (Beane and Ennis 1987). Engel (1972) further contends the notion that consumers are different from each other, and that these differences influence market demand. Serving all consumers is almost like mission impossible; people have different needs and wants and therefore they cannot be targeted in the same manner (Vyncke 2002). To find those consumers a company can satisfy, it is of significant importance to undertake market segmentation.

In marketing literature, segmentation is a central and prevailing concept, which offers directives regarding companies marketing strategies. Segmentation constitutes the focal point in marketing strategy and has been extensively adopted by companies for as long as companies have tried to differentiate themselves from competitors (Kamineni 2005). Hunt and Arnett (2004) continue and argue that one of the most established notions in modern marketing is market segmentation. According to Engel (1972), companies adopting segmentation receive a wide range of advantages, especially concerning information that can be obtained. Weinstein (2006) state that companies must gain the consumers' trust and win them over and to accomplish this, companies must understand consumers' needs and wants in the segments where they struggle. Accordingly, by using the obtained information from segmentation, companies can easier understand consumers' wants and needs (Engel et al 1972). As one of the aims with advertising and promotion is to inform market segments of the product or service existing on the market, this information can be applied in order to direct companies marketing activities more effectively (Smith 1956). Companies can then better adjust to shifting market demands and plan more distinct offerings to consumers (Engel et al 1972).

To gain competitive advantages, companies should identify those segments with possibilities for the firm, target the particular group of customers and finally create a certain marketing mix aimed to reach each segment (Hunt and Arnett 2004). Market segmentation often helps companies achieving better profitability than expected Wind (1978), and one of the reasons why segmentation is such an accepted marketing tool is because it contributes to increased sales compared to mass marketing approaches Cross (1999)

Since Smith (1956), first introduced the notion of segmentation, numerous ways for segmenting the market has been widely discussed in marketing literature (Mathur 2006; Vyncke 2002). However, independent of which segmentation classification, they all presume that consumers can be divided into homogenous clusters. Thus, companies employ segmentation as a tool to identify desirable markets, and tailor the marketing mix. (McGoldrick 2002)

For a company to successfully target its wanted group, the segmentation strategy has to be completely accurate (Solomon 1994), and if companies have well defined and penetrated market segments, the firm will get a deeper position on the market (Smith 1956). However, segmenting a market successfully is a difficult task. Consumers operate on several levels, and it is hard to understand how and what consumers act on (Kamineni 2005). Unfortunately, it is not directly obvious what individual demand thus causing different companies to come to diverse conclusions. This is due to differences in their theoretical and analytical approach, concerning what segment is right (Dickson and Ginter 1987)

Four different traditional market segmentation approaches are frequently being mentioned in marketing research. These segmentation variables are referred to as geographic, demographic, psychographic, and behavioural variables and consumers can be segmented according to them. According to Kotler (2005), these variables are the major variables in market segmentation. They are further in this research referred to as traditional market segmentation variables. Geographic variables are such variables as country size, city size, and density. Segmenting on demographic variables involves dividing consumers with regard to their age, life cycle, income, and occupation. The psychographic variables cover social class, lifestyle, and personality. The fourth segmentation variable, behavioural consists of

benefits sought, usage rate, and purchase occasion. (Kotler et al 2005) each of these variables offer important insights to the understanding of the market. However, at the same time, there are constraints with using them. As such, critiques have been directed towards all of these traditional segmentation variables

Geographic segmentation is not appropriate to use, since it has weaknesses in its nature (Haley 1968). Furthermore, Haley (1968) claims that the geographic variables are not good predictors of the consumer behaviour, as in today's society there is not much diversity between rural and urban areas. Thus, it is not effective to use this variable, as it cannot predict future buying behaviour within consumers. Moreover, geographic segmentation variables are based on ex post factor analysis of consumers in different market segments, which rely on explanatory features (Haley 1968). The capability of geographical variables has also been questioned due to their lack in offering an understanding of target markets (Schoenwald 2001).

Some of the problems with using demographic variables derive from marketers trying to segment whole markets. If there is not a clear segment, the demographic variables will be of no utility since they then cannot describe the segment. (Beane and Ennis 1987) neither are they capable to predict future buying behaviour (Haley 1968), which are essential for marketers as this is the aim with segmentation; to make the consumers into a customer, meaning to make consumers buy. Marketing managers must know what it is that drive consumer's behaviour. Based on this argument, demographic variables are not effective to apply, since they are unable to capture the drivers of consumers' behaviour. (Lancioni and Oliva 1995) demographic variables are not proficient enough to foresee behaviour (Tynan and Drayton 1987; Schultz 2002). Schultz (2002) also argues that segments based on demography are "nice to know but not terrible helpful". Furthermore, these variables do not perform enough; marketers need and want to get more acquainted with their customers in order to effectively segment a market (Wells 1975)

Singh A (2014) also find out that traditional segmentation techniques doesn't hold good for current market segmentation. In his study he tested that only age and gender in demographic variables have impact on the market segmentation.

OBJECTIVE

The objective of the research is to highlight the new concepts that are coming up in the market segmentation.

RESEARCH METHODOLOGY

This research is exploratory in nature. Data is being collected from the various secondary resources including books, article, company reports and magazines etc.

NEW CONCEPTS

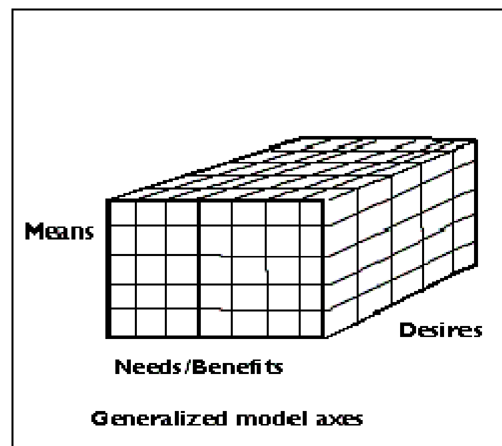
In the era of modern technology, the following new techniques are emerging:

1) Multidimensional Segmentation

In segmenting markets, most researchers use a single set of basis variables, be they demographics, psychographics, product category-related attitudes, product usage-related behaviours, derived importance from conjoint exercises, latent structures or whatever. However, there is no reason to limit the basis for segmentation to only one type of variable when many criteria actually determine buyers' response to offerings in the category. These criteria are multidimensional, encompassing attitudes, needs, values, benefits, means, occasions, and prior experiences, depending on the product or service category and the buyer.

A segmentation scheme based on only one set of basis variables may limit the utility of the information to the firm because various users of segmentation schemes have different needs. For example, product development managers may want the market segmented on perceived values and benefits sought; marketing communications managers may want the market segmented into groups of buyers with similar needs, desires, or psychographic profiles; and sales managers may want the market segmented on sales potential or profitability. A segmentation scheme based on multiple dimensions, using separate segmentation schemes for each one, is often more useful and more flexible for planning marketing strategy and executing marketing tactics. Thus, one may consider different segmentations on a sample of buyers using different bases, say, performance needs, means (the ability to pay), and desires concerning product-user identity.

FIGURE 1: THE MULTIDIMENSIONAL SEGMENTATION MODEL



In the past such segmentation schemes were deemed as too confusing and produced too many segments for marketing managers to address effectively. Yet, in this era of flexible manufacturing, micro-niche targeting, and multi-channel direct marketing, many market planners now consider and use market segmentation schemes that support much finer targeting efforts. Each surveyed customer, now a member of one segment in each of the three segmentation schemes, was assigned to a single cell in the segmentation matrix. Thus respondents in each cell were very similar on all three dimensions and different from respondents in other cells on at least one set of basis variables.

This approach provided a much cleaner and more understandable segmentation scheme then had we tried to dump all three sets of measures into a single clustering effort. Alone, this segmentation approach provides considerable insight into the marketplace structure. However, each cell of the segmentation scheme, along with means and distributions of all descriptor variables, can be put into a database and manipulated to provide a more dynamic understanding of the market structure and allow the user to reform the cells into new segmentation schemes. With a well designed segment manager program, the user can aggregate cells into specific market segments based on the varying needs of different internal functional and departmental users, while using a common base of homogeneous cells for all of the segmentation schemes in the company. Thus, any specific tactical segmentation scheme can be directly linked to the strategic segments or to any other tactical segmentation scheme.

2) Artificial Neural Networks

Starting in the early 1990's, artificial neural networks (ANN) have been developed to address a host of analytical problems. Both the appeal and the bane of ANN's is that they do not require any particular underlying model formulation and they do not require any particular data structure, as do, say, regression analysis or factor analysis.

Generally, ANN's are given a set of input variables and a set of known outcomes, and the algorithm is asked to find the best relationship between the inputs and the outputs. It does this by initially forming a trial relationship on a subset of the data, called the learning set or calibration set. The algorithm then backs up

through one or more "hidden layers" of input junctures, or neurons, and adjusts the weight of each input to that neuron to maximize its contribution to accurately predicting the outcome. This learning procedure is repeated over and over for each neuron until the process is halted by user specifications, or there is 100% accuracy in the prediction of a separate test sample. Results are tested and validated with other samples.

There are some specialized neural networks that are designed to cluster cases of data. This fall in the class of unsupervised neural networks, meaning that the outcomes are not pre-specified. Typically, these algorithms attempt to form clusters based on minimizing variance around a specified set of "seeds" or based on optimizing a transform function. Currently, one of the best known of these clustering ANN's is the Kohonan Self-Organizing Map. All ANN's of this type require a large number of cases because they need a large learning sample, a large test sample, and a large validation sample. Results have been mixed - some extremely well, others not so good. The usefulness of the clustering solution seems very dependent on the initial selection of seeds or the shape of the transform function. Many alternative runs may be necessary to find an acceptable solution.

One positive aspect of using ANN's to form clusters is that they tend to handle messy data well, that is missing variable data, variables with non-standard distributions, and variables using different scales.

Unlike cluster analysis, ANN's internally decide the relative impact, or weight, of an input variable on the results. Thus, it is difficult to externally weight any of the variables so that they have a higher influence on the clustering outcome.

3) Latent Class Models (Mixture Models)

Unlike other segmentation approaches, latent class is based upon statistical modelling; often involving dependent variable relationships characterized by regression and logic specifications. It assumes that data are generated by a mixture of distributions, and the analysis involves simultaneously estimating segment level models and determining segment identities. After the estimation process, individual respondents can be assigned into segments based upon their posterior probability of membership. For example, using only product selection choice data where respondents are never directly asked about brand, price, and features, a latent class analysis can reveal segments that are brand loyal, price sensitive, feature sensitive, etc. through an examination of the resulting coefficient estimates. In practice, the use of latent class analysis in conjoint and discrete choice applications has received much attention, and user-friendly software is now readily available. Cohen and Ramaswamy (1998)[3] cited two studies concluding that latent class conjoint was superior to several different segmentation applications to conjoint data in terms of fit, descriptive validity, and predictive validity.

However, other investigations comparing latent class results with procedures that first cluster based on individual level response data, and as a second step develop models within the segments found little difference in the resultant size and membership of the two clustering solutions. However, the overall explained variance in the dependent variable, thus its predictive power, was greater with the LCM approach.

While latent class analysis offers some advantages over more conventional procedures, it requires assumptions and specifications that are not needed in traditional approaches. When dependence relationships are involved, the importance of that relationship in forming segments may not be sufficient for strategic and many tactical market segmentation efforts. This is true of any segmentation procedure utilizing dependent relationships such as CHAID and CART. However, the methods can be very useful for better understanding market structures.

4) Fuzzy and Overlapping Clustering

Most clustering algorithms are programmed so that all cases are assigned to one and only one cluster. That is, the algorithms require that the results be mutually exclusive and exhaustive. The basic idea in fuzzy (or overlapping) clustering is to allow a single case to be assigned to more than one cluster, or alternatively to assign a portion of a case to more than one cluster. Currently, there is no widely available software to handle this procedure, and there may be little need for it.

Most clustering routines assume cases are grouped into hyper-spheroids in multidimensional space. Cases are assigned to a cluster based on their multivariate distance from the center of the spheroids or based on their probability of belonging to each spheroid. In the situation where a particular case is nearly equal distant, or has nearly equal probability of belonging to more than one spheroid, the standard clustering program will assign the case to the closest one, even if it takes five decimal points to do it. Many statisticians and research methodologists believe that there should be an alternative for the clustering algorithm to assign the case to each of the clusters.

In theory, that sounds fine. Practice is a different story. The effect of such a procedure would be to increase the variance within each cluster, thus reducing the variance explained by clustering. Cluster homogeneity would suffer, cluster overlap would increase, and the resulting clusters would be much harder to explain because they would be less differentiated. It would seem better practice to throw these ambivalent cases out of the analysis. Throwing out cases that do not fit well is very controversial. However, I believe our objective in market segmentation, and the underlying clustering of cases, is to identify unique and differentiated markets, recognizing that some cases may be "fence sitters" between segments. Cases that depreciate the differentiation should be held out of the analysis. Thus, there was a little need to further develop the concept of fuzzy or over-lapping clustering routines.

By way of an example, think about the situation where you may ask respondents to complete a conjoint trade off task about their drink selection preferences in different situations, say, at a business social function and at a bar with a group of friends. The conjoint attributes and levels are identical, but respondents' resulting profile preference ratings may be different, based on the situation. If you independently derive importance for each attribute for each of those two occasions, you will get two sets of derived importance for each respondent. There is no reason whatsoever that you cannot subject both sets of derived importance for these respondents to a standard clustering routine. The same respondent may then show up in two different clusters, depending on the results from their situational preferences.

5) Occasion-Based Segmentation

A particular challenge in market segmentation analysis is how to form segments when circumstances or occasions drive product preference and selection. For example, it is well known that beer brand preference and brand selection is often driven by the situational circumstances of the purchaser at the time of consumption. Restaurant selection is also well known to be dependent on occasion and circumstance. Mechanically, this is not very difficult. All as it takes is a different way of looking at the data input file to standard clustering routines. A case becomes an occasion with individual respondent information appended to each occasion-case.

Here is an example. Let's say we are measuring the relative influence on brand choice of a set of brands, product attributes, and price variations for carbonated soft drinks (CSD's) for immediate consumption in a variety of store type settings grocery, convenience, mass merchandise, deli, and drug. Each respondent is asked to execute a point allocation of importance of each of the attributes, plus price and brand name, on influencing their selection for each store setting that they have experienced in the last 10 days. In addition, we ask demographic and consumption volume profile information to better describes the respondent. We need to construct the data file as shown below, showing the first two respondents.

TABLE 1: OCCASION BASED SEGMENTATION

Occasion 1 measures	Respondent 1 profile data
Occasion 2 measures	Respondent 1 profile data (duplicated)
Occasion 3 measures	Respondent 1 profile data (duplicated)
Occasion 1 measures	Respondent 2 profile data
Occasion 3 measures	Respondent 2 profile data (duplicated)
Occasion 5 measures	Respondent 2 profile data (duplicated)

Here, each set of point allocation data for each store setting becomes a case. The respondents' profiling data is appended to each set of occasion ratings. At this point we have two choices. We could execute a clustering of the point allocation data for each type of shopping trip, thus deriving segments based on importance drivers within store type, separately.

Alternatively, we could submit all of the point allocation data to a clustering algorithm and find clusters or segments where the importance drivers are similar within each cluster and different between clusters, regardless of the occasion. The resulting clusters may or may not differentiate between store types. Either way, we have executed occasion based segmentation.

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A CRITICAL ANALYSIS OF FACTORS INFLUENCING CUSTOMER'S PERCEPTION TOWARDS THE INTERNET BANKING

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ABSTRACT
The internet banking has got tremendous response in recent years. There have been huge following of internet baking in India and in the world also. But the major concern about internet banking is that it is popular in urban area and that too in young generation. Every national bank is striving hard to provide internet banking to its customers. It is in bank as well as customer's favor that internet banking becomes more reachable. There are certain factors which are encouraging the use of internet banking at the same time there are some factors which are prohibiting internet banking. In this paper the researcher has made an attempt to analyze both these factors.

KEYWORDS
internet banking, customer perception.

JEL CODES
L86, M31, G21.

INTRODUCTION
The Indian Banking Regulation act 1949,Banking is defined as: "Accepting for the purpose of the lending of deposits money from public repayable on demand or other wise and withdraw able by cheques, draft, order or by any method." The bank is one of the major institutes in today's life. Every activity of human is dependent on money and the money is primarily exchanges in the banks. The numbers of banks have increased by leaps and bounce in India. In India the government is providing encouragement to promote banking. The schemes like Jan Dhan Yojna have influenced many people to pursue banking in their daily life. This has increased tremendous pressure on banks. Hence the effort has been made by banks to reduce its pressure by promoting online baking. The internet use has also increased in the same rapid way. The rate of internet has decreased in considerable rate. The more and more people are getting used to with internet. The number of smart phone users has increased a lot. These all things are favorable for internet banking. Banking services are informational (Bradley and Stewart, 2002) these can easily be automated and digitised. (Porter and Miller, 1985), every bank these days is considering the adoption of information technology equipment's as a means to improve the performance, service quality and efficiency in delivering the services. Realizing this fact, academicians, practitioners put emphasis in their studies that information source in banks is of huge significance and they looked at information technology as strategic response to dynamic financial environment (Ammayya, 1996). Centeno argues that speed, the convenience of remote access, 24/7 availability and price incentives are the main motivation factors for the consumers to use internet banking (Centeno 2004). E-banking service is a self-service by customers, it requires less resources and lower transaction and mere production costs (Southard and Siau, 2004). Daniel (1999) elaborates electronic banking as the delivery of bank's information and services by banks to customers by various ways such as a personal computer or a mobile phone with browser.

OBJECTIVES
1. To study the factors affecting the choice of internet banking
2. To evaluate the uses of internet banking
3. To understand the fear factors which are prohibiting the customers to use internet banking.

HYPOTHESIS
H_o There is no significant difference between the age of customer and frequency of using internet banking facility

REVIEW OF LITERATURE
Barnes and Corbett (2004) suggest that latest innovations in telecommunications have enabled the launch of new methods for banking industry. One of these is mobile banking; in which a customer interacts with a bank via a mobile phone or personal digital assistant.
Broderick and Vicharapornpuk (2002) studied the importance of customer role in designing and providing quality service in Internet banking.
Tushar Chaudhari (2017) suggest that All the major banks must have separate counter which will be specifically used for assistance in cash less transaction also Extra charges on Cash less transaction must be stopped.
Gupta (2006) in his study analyzed the potential of Internet banking and found that its capability to reach each and every cranny and gap of the world holds great significance for a realm like India.
Khare (2010) in his study described the importance of technology in civilizing customer service levels in being used deliberately and progressively more by service organizations.

RESEARCH METHODOLOGY
The current method of research is exploratory. The emphasis was given on the collection of primary data. The primary data was collected in Nagpur city. Pilot study was undertaken by the researcher before actually finalizing a questionnaire. The necessary changes were made and then it was distributed to the respondents. The questionnaire was filled from respondents. The observation during the course of the research was also proved to be vital. The sampling method was random sampling method. The details of respondents are given in the table number 1.

TABLE 1: PROFILE OF RESPONDENTS

Particulars	Categories	Number of Respondents	Percentage %
Gender	Male	56	46.67%
	Female	64	53.33%
Age	21-30	27	22.5%
	31-40	32	26.67%
	41-50	23	19.16%
	51-60	36	30%
	60 & above	02	1.33%
Marital Status	Married	81	67.5%
	Unmarried	39	32.5%
Types of customers	Student	29	24.17%
	Working professional	41	34.17%
	Salaried	18	15%
	Businessmen	18	15%
	Housewife	12	10%
	Pensioner	02	1.33%
Qualification	U.G. []	28	23.33%
	P.G. []	30	25%
	Professionals []	57	47.5%
	Ph.d []	05	4.17%
Gross Annual income	Below 4 lakh	45	37.5%
	4 to 8 lakh	20	16.67%
	8 to 12 lakh	45	37.5%
	12 to 16 lakh	10	8.33%
Type of Account	Saving	83	69.17%
	Current	37	30.83%

Source: primary data collection

TABLE 2: SOURCES OF AWARENESS ABOUT INTERNET BANKING

Sr. no.	Source	Number	Percentage
1	Advertisement	27	22.5%
2	Newspapers	18	15%
3	Parents	04	3.33%
4	Relatives	06	5%
5	Television	43	35.83%
6	Friends	10	8.34%
7	Bankers	12	10%
Total		120	100

Source: primary data collection

From this table it is clear that the television is playing vital role in promoting internet banking. The advertisement and newspaper articles are also playing their part.

TABLE 3: FACTORS INFLUENCING THE INTERNET BANKING FACILITY

Sr. no.	Particular	Number	Percentage
1	Saves time	16	13.33%
2	24 hour service	41	34.17%
3	Advice of friends/ relatives	11	9.17%
4	Advice of bank personnel	13	10.83%
5	Advertisement influence	30	25%
6	Belief in security	09	7.5 %
	Total	120	100

Source: primary data collection

The major factor which has influenced Internet Banking Facility is that it is available 24 hours. Many people are using it because of advertisement which states that the can save considerable amount of money.

TABLE 4: HOW MANY TIMES DO YOU USED INTERNET BANKING FACILITY

Sr. no.	Particular	Number	Percentage
1	Daily	17	14.17%
2	Once in two or three days	41	34.17%
3	Weekly	25	20.83%
4	Monthly	27	22.5%
5	Once a while	10	8.33%
	Total	120	100

Source: primary data collection

There are so many people who are using internet banking once in two or three days. These people are salaried people and they have become trained in internet banking.

TABLE 5: PURPOSE OF USING INTERNET BANKING FACILITY

Sr. no.	Particular	Number	Percentage
1	Online ticket booking	10	8.33%
2	Online bill payment	08	6.67%
3	Balance enquiry	28	23.33%
4	Request for cheque book	10	8.33%
5	tax payment	11	9.17%
6	Share trading	03	2.5%
7	Online shopping	50	41.67%
	Total	120	100

Source: primary data collection

The primary purpose of using internet banking is for online shopping. The various apps like amazon, flipcart are becoming more and more popular.

TABLE 6: WHAT WERE THE FEAR FACTORS BEFORE USING INTERNET BANKING FACILITY

Sr. no.	Particular	Number	Percentage
1	Security reason	41	34.17%
2	Prefer face to face	28	23.33%
3	Don't know how to use	11	9.17%
4	Sites are not user friendly	10	8.33%
5	There is no one to guide at beginning stage	30	25%
	Total	120	100

Source: primary data collection

Even that the banks have taken large steps towards safeguarding interest of customers while using internet banking still the fear has not gone out of the system of people.

TABLE 7: HYPOTHESIS TESTING

Age/Frequency			Total
	27 *22.00* (1.14)	17 *22.00* (1.14)	44
	32 *36.50* (0.55)	41 *36.50* (0.55)	73
	23 *24.00* (0.04)	25 *24.00* (0.04)	48
	36 *31.50* (0.64)	27 *31.50* (0.64)	63
	2 *6.00* (2.67)	10 *6.00* (2.67)	12
Total	120	120	240

For checking the above hypotheses, the chi square analysis was undertaken it was found that the chi square statistics id 10.0847. The p value is 0.039025. the value of p is less than 0.05. so null hypothesis is rejected. Hence we can conclude that There is significant difference between the age of customer and frequency of using internet banking facility

CONCLUSION

It was found that television and advertisements plays vital role in reaching the consumers. The respondents were using internet banking primarily because they can use it anytime in a day even at night. The popularity of online shopping and various apps like amazon, Flipcart etc. are proving as a catalyst in increasing use of internet banking. The researcher found that still there is still security fear in consumers.

RECOMMENDATIONS

Internet banking is need of time. The apps must be made more users friendly. Especially more efficient free toll number must be provided which will assist people. The customers must be given various youtube videos regarding how to use internet banking.

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NEED OF DESIGN THINKING AND INNOVATION IN BUSINESS ENVIRONMENT

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ABSTRACT

Turbulent business environments, competition, globalisation and dearth of resources have put significant competitive pressures on many businesses. Rapid specialized technology developments and increased global access to geographically unlimited markets allow consumers seemingly to have infinite choices for the best satisfaction of their needs in choosing desired products. Providing value to customers becomes vital to any organization to sustain the business in future. As a main task of design through design thinking is to seek value to customers, fosters management thinking from chaotic fluctuations in external turbulence and enables sustainable order in actions. This is why awareness of extended design application is becoming crucial nowadays among academics and practitioners. Although Design is most often used to describe an object or end result, it is however a process which can become, if used efficiently, the most powerful tool and foundation for driving a brand or business forward. Design Thinking is a mind set to develop and deliver innovative ideas, change and solutions to complicated problems. It is an activity-based process with a strong emphasis on teamwork. The paper describes new roles for design Thinking in addressing emerging global challenges in business environment.

KEYWORDS

business, business environment, challenges, design thinking, innovation.

JEL CODES

O35, Q55.

INTRODUCTION

As Prof. Dorst states, 'Recently, design thinking is identified as an exciting new paradigm for dealing with problems in many professions—majorly business and IT sector.' Following the success of Apple, a huge debate took place on the framing, application and use of the term design thinking among large business enterprises. Design thinking term was coined by the business community to denote a process which would infuse creativity into management.
Design thinking involves empathetic understanding of a problem, using creative skills to find solutions, and the application of process to derive home success.
CEOs such as Apple's Steve Jobs and Renault-Nissan's Carlos Ghosn have exploited the potential of design, placing design strategists in the boardroom to ensure that design is no longer an afterthought to the periphery, but is at the core of an organisation's business processes. Design Thinking provides a solution-based approach to solve problems. It is a way of thinking.

OBJECTIVES

1. To understand the concept of Design Thinking.
2. The Need and Importance of Design Thinking as a 21st Century Skill.
3. How does Design Thinking help in solving problems in 21st Century?

RESEARCH METHODOLOGY

The research paper is an attempt of exploratory research, based on secondary data sourced from journals, magazines, articles, newspapers and media reports.

LITERATURE REVIEW

Described as a human-centered approach to innovation, Design Thinking can be interpreted as a conceptualization of the way designers think and work (Brown, 2008; Johansson-Sköldberg et al., 2013; Kimbell, 2011; Liedtka, et al., 2013). Many proponents of Design Thinking describe how it takes account also of aspects such as feasibility and viability, and creativity within constraints (Brown, 2008). The most tangible representations of Design Thinking are put forward by IDEO. More recently, the use of Design Thinking has been proposed as a way for individuals to develop their 'creative confidence' (Kelley). This paper therefore seeks to complement the descriptions of Design Thinking in the literature by describing DT in practice, thus investigating what happens when the concept meets an organizational context.

DESIGN THINKING PROCESS

Empathy- It's the ability to see an experience through another person's eyes, to recognize why people do what they do. It's when you go into the field and watch people interact with products and services in real time. What we sometimes refer to as "design research."
Define-During the Define stage, we put together the information you have created and gathered during the Empathise stage. This is where you will analyse your observations and synthesise them in order to define the core problems that you and your team have identified. You should define the problem as a problem statement in a human-centred manner.
Ideate- In this stage, the team members can start to "think outside the box" to identify new solutions to the problem statement we created, and we can start to look for alternative ways of viewing the problem. There are various ways of Ideation techniques such as Brainstorm, Worst Possible Idea, and SCAMPER. Brainstorm and Worst Possible Idea sessions are majorly used to stimulate free thinking and to expand the problem space. It is important to get as many ideas or problem solutions as possible at the beginning of the Ideation phase.
Prototypes- Prototypes may be shared and tested within the team itself, or on a small group of people outside the design team. This is an experimental phase, and the aim is to identify the best possible solution for the problems identified during the earlier stages of this process. The solutions are implemented within the prototypes, and, one by one, they are investigated and are either accepted, improved and re-examined, or rejected based on the requirements.
Test- Evaluators test the complete product using the best solutions identified during the prototyping phase. This is the final stage of the model, but in an iterative process, the results generated during the testing phase are often used to redefine one or more problems and inform the understanding of the users, the conditions of use, how people think, behave, and feel, and to empathise.

FIGURE 1: DIAGRAM SHOWING DESIGN THINKING PROCESS

Design Thinking is a process where we are constantly being questioned so it can help us redefine a problem in an attempt to identify alternative strategies and solutions that might not be instantly apparent with our initial level of understanding. Design Thinking is often referred to as 'outside the box thinking', as designers are attempting to develop new ways of thinking that do not abide by the dominant or more common problem-solving methods – just like artists do.

NEED OF DESIGN THINKING AND INNOVATION IN BUSINESS ENVIRONMENT

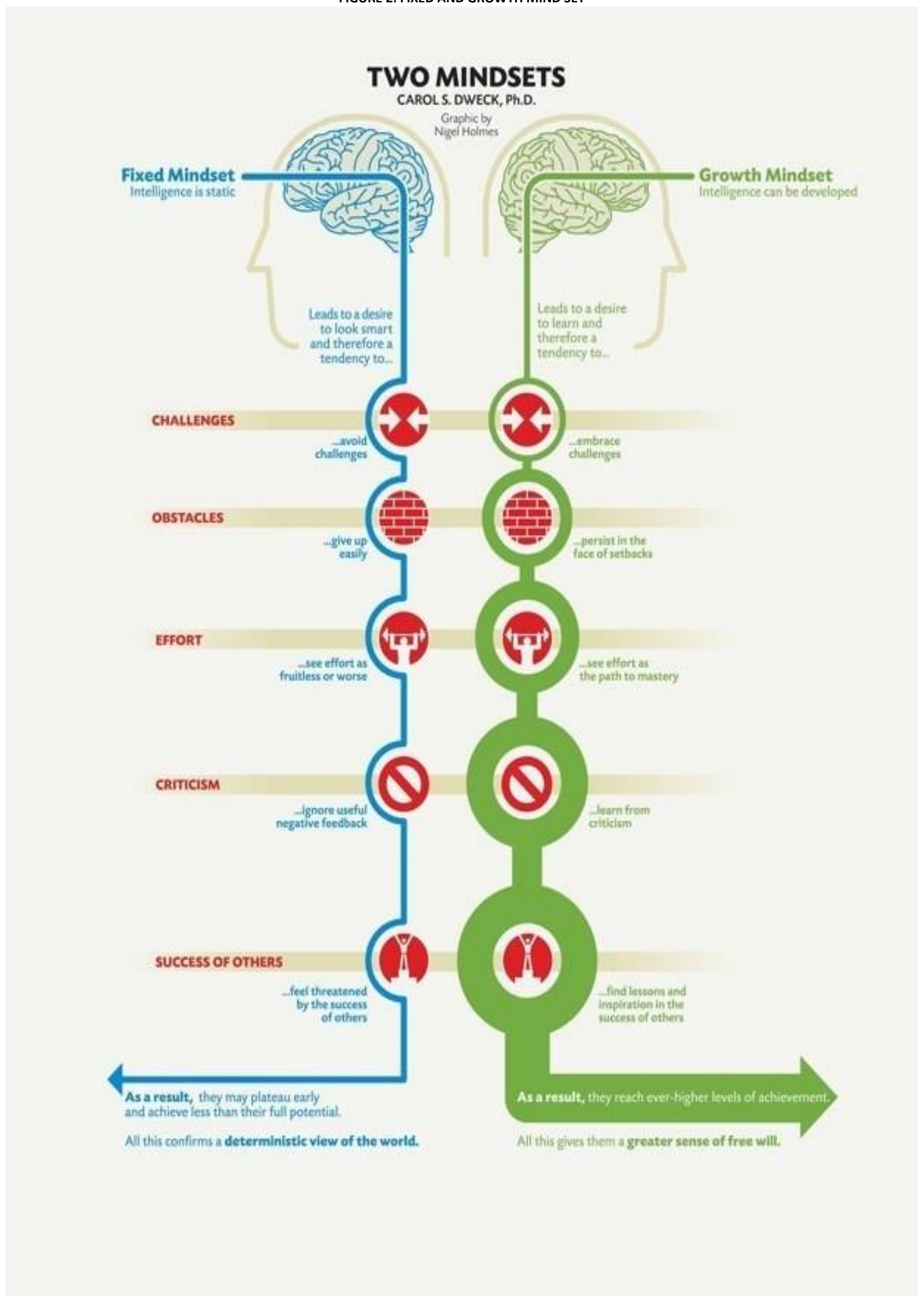
Businesses have slowly come to recognize that design can be used as a differentiator to respond to changing consumer behaviour. Again and again, Fortune 500 names such as Apple, Microsoft, Disney, and IBM have demonstrated the intrinsic value of "design thinking" as a competitive advantage that drives business growth. It is a methodology that employs unique and creative techniques to solve complex problems and find desirable solutions. Traditionally, design thinking was considered as a method used only by designers. However, it is applicable to anything that entails creating innovative ideas and solving problems. Various businesses and organizations use it to solve existing problems and discover new opportunities. A fundamental element of design thinking is simply thinking and ideating on a solution to address a problem or to meet a customer needs.

Design thinking should be at the core of strategy development and organizational change in order to create a culture that's focused on this way of solving problems. This way of thinking can be applied to products, services, and processes; anything that needs to be improved.

WHERE DOES DESIGN THINKING ADD VALUE?

Businesses have a never-ending list of goals, from constantly releasing new products that increase sales by resonating with customers to providing better customer support. When a business decides on a new product, a massive, expensive machine shifts into high gear, especially at large corporations. Applying design thinking can help to direct the attention to the specific solutions people need. It has become clear that using design in numerous ways and on a strategic level creates competitive advantage, boosts innovation capacity, adds value across the whole value chain and has a positive impact. It adds value to both users and businesses. For this one needs to have a growth mindset, it creates a psychological safety for risk taking and for collaborations.

FIGURE 2: FIXED AND GROWTH MIND SET



COMPANIES USING DESIGN THINKING

There are many examples that use design thinking in their day-to-day operations, like Apple and Google. Design thinking can and does work for all types of organizations, big and small. Yes, it can be challenging to implement at a more established company where process and systems run amuck, but the benefits outweigh the process of cutting through all the red tape.

IBM

IBM has taken numerous steps to cultivate design thinking into its culture by increasing the number of designers on its workforce from one for every 33 coders, to one for every eight. It got to know its users – in this case, all employees in the organisation. It built empathy maps and personas, and observed the way that its people worked. Once the business understood the current scenario, it then identified pain points, and from that started to imagine things that could help solve them."

INFOSYS

Infosys uses design thinking as it offers the most effective model to cultivate the creative power and potential of the enterprise. The company applies design thinking process and practices to increase opportunities for innovation and optimize their employees' problem-solving skillsets. Infosys has used design thinking workshops to change the mindset of its 170,000+ employees.

FIDELITY LABS

Fidelity Labs, has 8 global locations, 150 people, and over 200 patents. The three foundations of Fidelity Labs' design thinking methodology are "scan," "try," and "scale." They first "scan" across industries to find opportunities for innovation, then "try" to quickly prototype and test products with customers, and finally "scale" by identifying opportunities and delivering them to their 22 million customers and partners.

PEPSICO

Pepsico is also using Design Thinking to address the user experience. It tried Design Thinking a little differently. They decided to take the top-down approach. The CEO Indra Nooyi had the mandate to innovate and she believed doing it the design way. She hired Mauro Porcini, who till then led design at 3M, as the first-ever chief design officer at Pepsico. PepsiCo launched Lifewtr, a premium-priced bottled water featuring labels that are designed by artists and change several times per year.

TOSHIBA

Toshiba had been struggling with their disused factories that were once actively churning out floppy disks. When floppy disks lost their charm, the factories remained shut for a decade. After applying design thinking, Toshiba decided to convert these factories into vegetable farms, growing lettuce, spinach, and other green leafy vegetables. Toshiba is growing over 3 million units of vegetables annually since 2015. In the future, they are also planning to introduce robots that pick vegetables.

BRAUN

The team at design company Industrial Facility were given the challenge of creating a better experience with the Oral B electric toothbrush. Instead of looking at the client's idea of tracking a user's brushing performance, the company looked at the problems the customers had. These included forgetting to purchase replacement brush heads and the toothbrush running out of power. As a result, Industrial Facility created toothbrushes with charging capabilities. The toothbrushes were also fitted with a button that users could press that would send a reminder to their smartphone to purchase a replacement.

CAPITAL ONE

Capital One has adopted design thinking as a mantra to reinvent itself as a software company and innovation incubator. After acquiring design firms Adaptive Path and Monsoon, Capital One has recently rolled out fresh digital features, from an emoji-enabled SMS chatbot to GPS-tracked transaction histories.

DESIGN THINKING IN VARIOUS DOMAINS

Nowadays, Design Thinking is used in every domain. Organizations are implementing Design Thinking to gain more productivity and to become more customer oriented.

1. DESIGN THINKING IN MARKETING

Design Thinking looks at people, products, place, process and performance. Marketing meets at design thinking in branding and service design. Design Thinking influence branding and helps in expanding innovation. Design and market should work together to solve customer problems. It also provides a structured approach for service and product development.

2. DESIGN THINKING IN INNOVATION

Design Thinking puts a tool set for creativity in hands of people. It involves collaboration across multiple disciplines. Its helps to create effective strategy development, organizational change and business transformation. Through design thinking right problems can be solved and appropriate solutions can be tested. Design Thinking in Innovation goes through three phases LEARN, CREATE, MAKE.

LEARN to identify the challenges and the right problem to solve it.

CREATE implies doing research to form ideas and prototypes are made to bring possible solutions.

MAKE is implementing the process. Things can always be made better so iterate, iterate and iterate.

3. DESIGN THINKING IN HUMAN RESOURCE

Human needs are the centre of design thinking. Design thinking learns actual needs of people through qualitative and effective research.

"Empathy maps reveal perceptions from the user's point of view, and by forcing research that looks at both emotions and reason, gets a truly people-centric view of a situation."

Design Thinking evolves a robust selection process that yields best fit of the candidate to the job profile.

4. DESIGN THINKING IN INTERNET OF THINGS

Design Thinking develops end user to focus on solutions to complex problems. It empathizes phase end users. It gets to the bottom of real problem with current technologies and products. Design Thinking helps in testing multiple prototypes and looking for more input from end users. By applying Design thinking to internet of Things, we can implement intentional innovation to solve the challenges in Internet of Things such as architecture, verticals and other related domains.

5. DESIGN THINKING IN FUELLING BRAND STRATEGY

Design thinking act as a linking between design and business and look at design from a wider perspective of business approach. In the book, Design Management: Using Design to Build Brand Value and Corporate Innovation, Brigitte de Mozota categorized design contribution inside organizations into three domains:

Operational design involves design tasks such as creating graphic design materials, designing products, and digital user interfaces.

Functional (tactical) design involves the design process such as arranging the cooperation between departments and different stages of the design process.

Strategic design involves looking to the design from a strategic perspective that links between the company strategy and consumer needs such as building the company brand and reflecting it to the above two types of design inside the organization.

CONCLUSION

In conclusion, Design thinking is at the core of effective development and organizational change. It defines how organizations learn from one another, and pushes teams to explore new horizons. The design way of thinking can be applied to anything from systems, to procedures and user experiences. Ultimately, it is there to improve quality of life and create a better world for all. This process requires more than a single process adoption but transformation in the mind-set of the organisation. It means changing the way people in the organisation think, and the way organisation is structured so that the internal processes are adaptive. This will allow the flexibility to create agility, adaptability, and innovation as one of the means to create people centred, entrepreneurial and meaningful organizations. It can create an ecosystem of co-creation that allows various stakeholders, such as employee, management, end users, to be a part of decision making, and making the organizations more meaningful.

In pursuit of innovation, not just the big players but start-ups and small businesses can also employ design thinking considering it as imperative to their success. Design thinking is a tool for simplifying and humanizing. Adopting it is not easy. However, doing so is empathetic, as it is a more thoughtful and human approach to business.

LIMITATIONS
The findings of the study indicate that when organisations implements design thinking, the main use of this method is during early or innovation stage and less in phase of product development which where design is already included. Also, our study finds that design thinking cannot replace the traditional system, but rather adds a new field of work. Moreover, in order to implement design thinking the organisations needs to have right mindets, collaborations and conductive environment which is tough to get in an organisations as people of various mindsets are working together under one roof.

FUTURE SCOPE
Design Thinking has become a game changing competency for majority of enterprises. Design Thinkers need to take a step back and re-think how to take this concept forward. The Design Thinking community will then follow and respond. Design Thinking needs a new lifting up into both tactical and strategic approaches. As we face the task of solving complex and strategic problems, it is the time for Design Thinking to step-up and become a key component on how to do this in order to understand customer needs, and to solve organizational challenges that corporations and society are grappling with. The ability to extract from Design Thinking methodologies can significantly help in the future. What is increasingly demanded today is to solve more complex problems in creative ways, and Design Thinking needs to work in harmony with many other thinking skills to make its contribution. It can connect to a wider universe of problems and complexity of design itself, over the centuries it broke out of past confines. Design thinking makes us all design-conscious if we allow it to. It is the human-centred design that can draw out the best of our thinking if we do allow it to. As Design Thinking has taken hold, there has been an increasing demand to raise up its capacity to help solving problems in our business complexities, in our countries and in our lives.

Implementing design thinking is definitely not an easy task, but with it, you can create a workplace where employees look forward to work and innovate. This cultivates empathy for customers and paves the way for rapid prototyping and user testing to launch innovative products quickly to the market. Through design thinking approach, enterprises have seen dramatic improvements in their top and bottom lines, companies have been able to completely transform their lines of business and fight the disruption.

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A STUDY ON THE IMPACT OF RERA ACT ON CUSTOMERS AT SHUSHMITHA SOUTHERN HOUSING, CHENNAI

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ABSTRACT

The project work entitled "A study on the impact of RERA ACT on Customers at Shushmitha Southern Housing, Chennai" www.rushmoressh.com was mainly conducted to identify the resolved and unresolved factors within the Indian Real Estate Industry, radiating direct and indirect impact on customers after the implementation of RERA ACT across the Indian states and it found that RERA has increased Quality of Construction since Developers are made to give 5 years warranty period to Flat Buyers against Construction defects. It has made Developers deliver their projects On Time without delays. It has thrown a transparent picture of the Real Estate Industry where a customer can analyze the choices of property with the help of RERA validation features. Customers are courageously reporting to RERA offices whenever Developers violate Agreement norms and RERA steps in to set it right at once. India's Global Image on Real Estate Sector has been upgraded by RERA act.

KEYWORDS
RERA Act, housing projects.

JEL CODE
K25

INTRODUCTION

The Real Estate (Regulation and Development) Act, 2016 is an Act of the Parliament of India which seeks to protect Customers as well as help boost investments in the real estate industry. The Act establishes Real Estate Regulatory Authority (RERA) in each state for regulation of the real estate sector and also acts as an adjudicating body for speedy dispute redressal. The bill was passed by the Rajya Sabha on 10 March 2016 and by the Lok Sabha on 15 March 2016. The Act came into force on 1 May 2016 with 59 of 92 sections notified and remaining sections/provisions came into force on 1 May 2017. The Central and state governments have notified the Rules under the Act.

SCOPE OF THE STUDY

This study has diluted and concentrated samples from SSH's customers as well as general public living in Chennai City RERA zone in order to secure a more realistic feedback from Chennai's Real Estate Industry.

The scope of this study is to identify the impact of RERA on Customers and also hunt for grey areas for further curative measures for 100% Customer Protection under RERA era. The scope of the study involves the preparation of questionnaires and data sheet for Chennai RERA zone audience only.

PROBLEM STATEMENT

RERA Act has only protected the interest of customers (home buyers / joint development land owners) of projects executed on lands which are ABOVE **500 sq.m (5380 sq.ft/2.25 grounds approx.)** and on projects with above 8 flats thereby failing to protect the interest of customers (home buyers / joint development land owners) of projects executed on lands **LESS THAN 500 sq.m (5380 sq.ft/2.25 grounds approx.)** and on projects with less than/equal to 8 flats.

To illustrate the above said loop-holes with respect to Chennai RERA Zone, customers (home buyers / joint development land owners) are exposed to high risks in areas such as Anna Nagar, Ashok Nagar, Madipakkam, Adampakkam, etc. wherein most of the lands there are less than 5380 sq.ft/2.25 grounds approx.) and most of the projects are less than/equal to 8 flats. This research is limited to understanding Chennai Customer Behaviours under RERA era across the positive, negative and neutral parameters.

In addition, there are other teething issues, monitoring concerns and grey areas revolving around the RERA Act which needs to be addressed and ironed-out for a fool-proof and water-tight RERA ACT.

OBJECTIVES OF THE STUDY

1. To study the impact of RERA ACT on Customers.
2. To validate quality assurance, timely delivery & rectification procedures.
3. To audit grey areas, corrective measures & speedy redressal of disputes.

LIMITATION OF THE STUDY

1. The study was limited to a short period only.
2. The data depends totally on the respondent's perspective, which may be proficient or biased or opinionated or ill-informed.
3. In this study the sample size was 132 taken within Urban Chennai RERA zone only. Hence, it cannot represent the mind-set of Rural Tamil Nadu too.

REVIEW OF LITERATURE

Shubham Jain (May 9th 2018) is her article **"How RERA change the real estate landscape"** published by **www.FinancialExpress.com** stated that there is sea of positive changes post-RERA getting notified in the respective Indian states and the respective state governments will have to play an important role and be proactive in tackling issues of under-staffing and streamlining of operations of the RERA authority and tribunal. RERA success depends on the Political willingness and administrative efficiency of the State Government of the respective Indian States. The State Governments must take all pro-active and comprehensive steps to protect customer's right using RERA Act.

Samridhi Malhotra (Jun 5th 2018) is her article **"Advertisement guideline in RERA"** published by **by www.rerafiling.com** stated that the promoter shall not issue any advertisement in any manner including by the way of issuance of brochures, pamphlets, words of mouth, or in any other manner, for booking of the apartment or plots or building in real estate project without getting their particular project registered under RERA. If he/she is found advertising the project without getting it registered, he/she will be imposed on harsh penalties that are prescribed in the norms. After getting the project registered, the promoter then gets the right to

advertise his/her project via any sort of media like brochures, pamphlets, etc. Advertisements published for inviting buyers for the purchase of apartment/plot, shall be truthful and based on the facts as have been revealed to the authority with strictly no exaggeration or misinterpretation which may create a biased impression in the minds of the buyers about the property they are interested to buy. In case, the promoter is found advertising any false claims that he/she fails to deliver, he/she shall be exclusively liable for further penalties.

METHODOLOGY

The type of research design opted for this study is descriptive research design. Descriptive research is used to obtain information concerning the current status of the phenomena. Data collected for this study was from both primary and secondary sources.

The main objective of this type of research is to describe the state of affairs as it exists at present. It determines the customer attitude towards the RERA ACT and its impact on them. This design was selected with the objective of knowing the impact of RERA ACT. The main characteristic of this method is that the researcher has no control over the variables; he can only report what has happened or what is going on.

Data was collected using by distributing questionnaires through WhatsApp using survey tools and in-person sessions. Quantitative questionnaires (close-ended questions & mathematical and statistical calculations) were used. The structured questionnaire with majority of closed-ended with multiple choices was distributed to the respondents to be filled up. Likert and Dichotomous scaling techniques were used.

Sample size selected for this study was 132 Stratified Sampling technique was used (Probability sampling).

The populations representing real estate customers was divided into three layers / strata. Each layer / strata of the population consisted of Along with the Percentile Analysis, statistical tools such as Chi-square and Correlation were used for data analysis. Software tools such as SPPS/ MS Word/ MS excel were used.

Layer 1	Recent Past Customers of the company
Layer 2 A	Present Customers of the company
Layer 2 B	Prospective Customers of the company
Layer 3	General Public outside the company

ANALYSIS AND RESULTS

TABLE 1 - GUARANTEED TIMELY DELIVERY & 5 YEAR DEFECT RECTIFICATION, POST-RERA

OPTIONS	FREQUENCY	PERCENTAGE (%)
Strongly Agree	31	23.49
Agree	92	69.69
Neutral	7	5.30
Disagree	1	0.76
Strongly Disagree	1	0.76
Total	132	100

From the above Table, it is inferred that 23.49% of customers strongly agree that they are satisfied regarding guaranteed timely delivery under RERA regime, 69.69% of customers agree the same, 5.30% are mixed mind-set about the same and 0.76% of customers agree that they are not satisfied regarding the same and 0.76% of customers strongly agree they are not satisfied regarding guaranteed timely delivery under RERA regime.

TABLE 2: UNHAPPY THAT RERA DOES NOT PROTECT FLAT BUYERS OF PROJECTS WITH <= 8 FLATS AND <= 2.25 GROUNDS IN INDIA

OPTIONS	FREQUENCY	PERCENTAGE (%)
Strongly Agree	74	56.06
Agree	57	43.18
Neutral	1	0.76
Disagree	0	0
Strongly Disagree	0	0
Total	132	100

From the above Table, it is inferred that 56.06% of customers strongly agree that they are unhappy that RERA does not protect flat buyers of projects amidst <= 8 flats and <= 2.25 grounds, 43.18% of customers agree the same, 0.765% of customers are having mixed mind-set about the same, 0% of customers disagree the same and 0% of customers strongly disagree that they are unhappy that RERA does not protect flat buyers of projects amidst <= 8 flats and <= 2.25 grounds.

TABLE 3: 100% SAFE TO BUY FLATS FROM RERA REGISTERED PROJECTS IN INDIA

OPTIONS	FREQUENCY	PERCENTAGE (%)
Strongly Agree	68	51.52
Agree	56	42.42
Neutral	5	3.79
Disagree	3	2.27
Strongly Disagree	0	0
Total	132	100

From the above Table, it is inferred that 51.52% of customers strongly agree that they feel 100% safe to buy flats from RERA registered projects, 42.42% of customers agree the same, 3.79% of customers are having mixed mind-set about the same, 2.27% of customers disagree the same and 0% of customers strongly disagree that they feel 100% safe to buy flats from RERA registered projects.

FINDINGS

1. Maximum respondents (92%) were extremely happy that RERA has made Developer accountable and punishable for delay and construction defects.
2. Maximum respondents (70%) were happy that RERA has guaranteed Timely delivery by Developers.
3. Maximum respondents (78%) were happy that RERA has Developer assure Maximum Quality of Construction and 5-year rectification commitment.
4. Maximum respondents (52 %) profoundly endorsed that it is 100% safe to buy flats from RERA Projects.
5. Maximum respondents (98%) wanted all projects irrespective of number of flats and land extent to be covered by RERA
6. Maximum respondents (100 %) wanted more regulatory norms for RERA to make it loop-hole free
7. Maximum respondents (89%) endorsed that RERA has regulated the real estate industry

SUGGESTIONS

1. RERA acts must guards all Customers across India irrespective of Total Land Extent and Total No of Flats. Currently, Developer projects with <= 8 Flats and <= 2.25 Grounds are NOT covered under RERA thus exposing Flat Buyers of such projects to potential RISKS. This loop-hole must be addressed with immediate

effect. RERA act must also protect customers of projects with <= 8 Flats and <= 2.25 Grounds and this corrective measure will make the act 100% loop-hole free one.
2. RERA act must bring more reforms to rope in the Professionals such as Engineers and Architects vouch for Quality Assurance since they are the spine behind Developer's RERA registered projects. RERA must bring them within the legal loop so that Developers are cornered on all sides to delivery on time with hi-quality of construction.
3. State government bodies across Indian states must enforce all norms effectively without any laxity since signs of laxity will kill the very essence of what RERA stands for.

CONCLUSIONS

RERA has increased Quality of Construction since Developers are made to give 5 years' warranty period to Flat Buyers against Construction defects. It has made Developers deliver their projects On Time without delays. It has thrown a transparent picture of the Real Estate Industry where a customer can analyze the choices of property with the help of RERA validation features.

Customers are courageously reporting to RERA offices whenever Developers violate Agreement norms and RERA steps in to set it right at once. India's Global Image on Real Estate Sector has been upgraded by RERA act.

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