

ISSN NO: 2822-1605

NCCS
College of IT & Management
[Affiliated to TU]

National College of Computer Studies

**RESEARCH
JOURNAL**

VOLUME 1

DECEMBER 2021

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Published by: National College of Computer Studies, Paknajol Marg, Kathmandu

NCCS Peer Reviewed Research Journal

Volume 1, 2021

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This first volume covers different articles from various disciplines of science and society like economics, sociology, anthropology, management, etc. We hope this volume will contribute to generating new knowledge on management, technology, economy, and the development processes of the society as well as the country.

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December 25, 2021

Kathmandu, Nepal

NCCS Peer Reviewed Research Journal

Volume 1, 2021

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Received: July 2021 Received in revised form: September 2021 Accepted: November 2021

Organizational Strategy and its Effects on Performance of Nepalese Commercial Banks

- Dr. Achyut Gnawali¹

Abstract

Organizational Strategy is a pattern of important decision that guides the organization in its relationship with its environment; affects the internal structure and processes of organization; and centrally affects the organization's performance. Descriptive and casual research designs were used in this study. A structured questionnaire based on 5-point Likert scale has been used to collect the data. The sample size was 507(Respondents) and selected on the convenient basis. Lending strategy, treasury management strategy, resource mobilization strategy, innovation and service quality strategy, and segmentation strategy were used as independent variables and organizational performance was used as dependent variable in this study. It was found that organizational strategies have impacted on organizational performance. The study recommends that investors and managers should make use of strategic management to improve their organizations actual performance at all times.

Key Words: Organizational Strategy, Lending, Innovation, Segmentation, Treasury, Resource mobilization

JEL Classification: *M41, L1*

Background

Strategy is considered to be a detailed plan for a business in achieving success. Managers employ strategy to achieve result. Strategic management is combination of science and arts which increases an organization's chances of success as it involves detailed planning of each and every variable of the organization that can help in the achievement of goals and objectives.

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Business environment has become highly competitive and fast changing in recent times. The traditional management approach that focuses mainly on internal environment of an organization cannot anticipate the effect of external changes and actions of competitors. It is important for attaining competitive edge that companies need to be more strategic in its operations giving due considerations to the likely impact of its external environment (i.e. technological innovation, marketing methods, actions of rival companies) on its performance. As such, the strategic management has become quite important to organizations to thrive in today's business world (Hamel, 1996). Strategy to be successful, manager should consider the organization as a whole and not as any entity made of distinct and independent business units, and must include everyone in the organizational. Strategy is a detailed plan for a business in achieving success (Kazmi, 2008).

Strategic management is the process of examining both present and future environments, formulating the organizations objectives, implementing and controlling decisions focused on achieving these objectives in the present and future environments. In other works, strategic management is involved in deploying a firm's internal strengths and weakness to take advantage of its external opportunities and minimize its external threats/problems (Adeleke, Ogundele and Oyenuga, 2008).

According to Lamb (1984), strategic management is an ongoing process that evaluates and controls the business and the industries in which the company is involved; assesses its competitors and sets goals and strategies to meet all existing and potential competitors; and then reassesses each strategy regularly to determine how it has been implemented and whether it has succeeded or needs replacement by a new strategy to met changed circumstances. Strategic management is the leading process through which the organization achieve its vision and mission and obtaining a sustainable competitive advantage. This determines long term evolution and organizational performances by detailed formulation, accurate implementation and continuous evaluation of strategies (Pruna,2008). Likewise, Johnson and Scholes (2002) had conceptualized strategy as the direction and scope of an organization over the long term, which achieves advantage for the organization through its configuration of resources within a changing environment and to fulfill stakeholder expectations.

Hayes and Pisano (1994) opined that in a stable environment, competitive strategy is about staking out a position and strategy focuses on getting better at the things necessary to defend that position. The emphasis on strategy, as a set of decision making rules, has also been placed by latter authors, who added it as a link between short and long run decisions.

Innovation is defined as the initiation, adaptation and implementation of an idea or proposal that will lead to a change within the organization, and the installation of the adopted idea into a sustained identifiable pattern within the organizational behaviors. Innovation, therefore, may include acceptance and implementation of new product lines or process technologies (Preece & Delbecq, 1977). Innovation and performance are complex constructs. Innovation is risky, disrupts organizational operations and activities, and its impact on firm performance is neither predictable nor necessarily desirable (Thompson & Strickland, 2003).

Empirical studies show that the quality of service offered is related to overall satisfaction of the customer. According to Parasuraman, Zeithaml and Berry (1988) reliability, tangibility and empathy positively related with customer satisfaction. Sulieman (2011) found that reliability, tangibility, responsiveness and assurance have significant and positive relationship with customer satisfaction. Moreover, the result of Ravichandran et al (2010) indicates responsiveness is the only significant dimension of service quality that affects the satisfaction of customers positively.

Marketing segmentation helps to identify of profitable markets, specialize on a market segment, use of marketing resources, monitor changes in the market place, adopt suitable marketing strategies and focus on competitors (Koirala, 2012). Successful development and implementation for any global marketing strategy depends on the organizations' ability to segment its markets so that uniform sets of marketing decisions can be applied to specific customers that exist horizontally, i.e., across nations or cultures (Sethi, 1971).

Lending strategies includes all the activities related with credit such as; credit processing, credit marketing, portfolio management, concentration risk monitoring, risk hedging, capital required for the risks and credit reporting etc. Banks have to follow the basic principle of lending for

minimizing risk associated. There are various fundamental norms and principles like safety and security, liquidity, risk diversification, profitability and loan purpose (Thapa & Rawal, 2010:).

Matching the assets and liabilities of the bank is the major concern of the treasury department. Treasury management is responsible for the identification of risks associated with the business and for controlling risks which could erode financial strengths using mitigation and hedging techniques and encouraging a culture of sound financial practices (Thapa & Rawal, 2010). Jaworski & Kohli (1993), suggest positive relationships between market business strategies and overall firm performance.

There is no dedicated research study in organizational strategy and organizational performance. In addition, the newer dimension of combined impact of organizational strategy on organizational performance is still unfolded in Nepal .Therefore, the present research study has been conducted to fill the above mentioned research gaps. In nutshell, it is the most comprehensive research on impact of organizational strategy on organizational performance of Nepalese commercial Banks.

Objectives of the Study

The main purpose of this study is to analyze the strategic management practices and organizational performance in Nepalese Commercial Banks. More specifically this study proposes following specific objectives:

- 1. To examine the present practices of strategies in selected organizations.*
- 2. To assess the relationship between the use of Organizational Strategy and the Organizational Performance of Nepalese Commercial Banks.*
- 3. To examine the impact of strategies on organizational performance.*

Research Methods

Descriptive research and explanatory research design was employed. There were 31 banks at the time of the study. Out of these 31 banks only 17 numbers of banks were established before 2002. The selection of the bank for the study was framed on the basis of ten years in operations. Furthermore, six earliest established Nepalese commercial banks were selected for the study. These banks were established between 1937 and 1993. In the sampling framework, samples of

employees were taken for the study. This stratification of population resulted into sampling frame of six banks namely, Nepal Bank Ltd. Kathmandu (1937), Rastriya Banijya Bank Ltd. Kathmandu (1966), Nabil Bank Ltd. Kathmandu (1984), Nepal Investment Bank Ltd. Kathmandu (1986), Standard Chartered Ltd. Kathmandu (1986), and Himalayan Bank Ltd. Kathmandu (1993). According to the Annual Report of the Banks, there were 8248 total numbers employees in these banks. Accordingly, the sample size determined was 367 numbers of employees using sample size calculator. The sample was determined with 95% of confidence level, 5% margin of error with a response distribution of 50%. The determination of sample size was formulated with reference to Gupta, (1996).

Out of the distributed employees' questionnaire, total of 534 questionnaires were returned. However, 507 returned questionnaires were useable. Henceforth, the response rate was 69.07% in total. The overall field work for data collection was undertaken from January 2013 to July 2016. The primary data collected were cleaned, tabulated and analyzed using the software SPSS v. 22. The data collected in this study was used to generate descriptive statistics as well as inferential statistics. The descriptive measures used are frequency distributions, measures of central tendency, and measures of dispersion. The inferential statistics uses were t-test, f-test, Pearson's correlation coefficient test and regression analysis were used.

Multiple Regression Model- : Organizational Strategy to Organizational Performance

$$\hat{Y} = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e_i$$

Where,

\hat{Y} = Organizational Performance

X_1 = Lending Strategy

X_2 = Treasury Management Strategy

X_3 = Resource Mobilization Strategy

X_4 = Innovation and Service Quality Strategy

X_5 = Segmentation Strategy

α = Constant

β_1 = Slope coefficients

e_i = Error term

Reliability and Validity

Strategy variable was measured with 45 opinion statements and Performance variable was measured with 6 opinion statements in Likert 5-point scale (with 5=strongly, to 1=Strongly

Disagree. The Cronbach's α for overall Strategy (highly reliable) was 0.959 and for overall Performance was 0.821 (highly reliable).

Results

Overall Organizational Strategy practice in commercial banks

Table 1 shows the results, that grand mean of respondents regarding performance evaluation on different statements is 3.56. It indicates that the respondents were agreed on almost all the opinion statements is greater than test value. That means all statements are important factors. To test the significant difference from the mean score, the p value of all opinion statement was 0.001(<0.01), which indicates that all the statements are significant variables. The individual mean score of the variables of organizational strategy resulted in following Segmentation Strategy =3.55 (SD=0.584); Innovation Strategy =3.60 (SD=0.619); Resources Mobilization Strategy =3.68 (SD=0.686); Lending Strategy =4.00 (SD=0.746); Service quality and Delivery Strategy =3.78 (SD=0.655); and Treasury Management Strategy =3.81(SD=0.658). The result shows the lending strategy with the highest mean indicating wholesome agreement of the lending strategy implementation by the commercial banks. Whereas, the lowest dealt was segmentation strategy.

Table 1: Respondents' view on Organizational Strategy in commercial banks

Variables of Strategy	N	Mean	Std. Deviation	Test Value = 3.00		
				t value	p value	Remarks
<i>Segmentation Strategy</i>	507	3.553	0.584	21.311	0.001	Significant
<i>Innovation Strategy</i>	507	3.609	0.619	22.125	0.001	Significant
<i>Resources Mobilization Strategy</i>	507	3.686	0.686	22.517	0.001	Significant
<i>Lending Strategy</i>	507	4.00	0.746	30.192	0.001	Significant
<i>Service quality and Delivery Strategy</i>	507	3.785	0.655	26.974	0.001	Significant
<i>Treasury Management Strategy</i>	507	3.817	0.658	27.953	0.001	Significant

Segmentation Strategy practices in commercial banks

Table 2 shows that grand mean of respondents regarding segmentation strategy on different statements is 3.55 (SD = 0.584). It falls under agreed band and mean of almost all the opinion statements is greater than test value. To test the significant difference from the mean score, the p

value of all statement comes out to be 0.001(<0.01), which indicates that all the statements are significant factors. The managers focused on manufacturing and trading sector industries as it can be interpreted with the highest mean score 3.665 (SD = 0.901). However, these commercial banks of Nepal make the financial statement analysis properly for effective strategic management and the Segmentation based on geographic region which was found to be the lowest mean score 3.430 (SD =0.962). However, despite of being significant factors; the mean score indicates as the least important contributing factors to segmentation strategy. That leads to proper performance of the selected organizations. Table 2 puts details of Segmentation Strategy practices dimensions.

Table 2: Respondents' view on Segmentation Strategy in commercial banks

Opinion Statements	Mean	Std. Deviation	Test Value = 3.00			Remarks
			T	df	Sig. (2-tailed)	
Concentration on niche product	3.361	0.950	8.552	506	.001	Significant
Segmentation identifies market opportunities	3.611	0.867	15.877	506	.001	Significant
Adopt the changing business situation	3.651	0.866	16.930	506	.001	Significant
Service sector investment	3.550	0.848	14.620	506	.001	Significant
Focused group on income level	3.602	0.882	15.360	506	.001	Significant
Focused on manufacturing and trading sector industries	3.665	0.901	16.607	506	.001	Significant
Segmentation based on geographic region	3.430	0.962	10.064	506	.001	Significant
N= 507						

Innovation Strategy practices in commercial banks

Table 3 shows that the highest grand mean of respondents regarding innovation strategy is 3.609 (SD = 0.619). It falls under agreed band and mean of almost all the opinion statements is greater than test value. To test the significant difference from the mean score, the p value of all statement comes out to be 0.001(<0.01), which indicates that all the opinion statements are significant factors. However, each statement is significant indicating all variables are important factors for Innovation Strategy practices. The manager uses innovation for gain competitive advantages and growth were found to be highest mean score 3.744 (SD = 0.931). Hence, these commercial banks of Nepal make use of the innovation for achieving advantage and growth for

effective strategic management. The launch research and development activities which was found to be the lowest mean score 3.393 (SD = 0.931). Despite of being significant factor, it seems to be least important contributing factors to strategic management. Table 3 puts details of Innovation Strategy practices dimensions.

Table 3: Respondents' view on Innovation Strategy in commercial banks

Opinion Statements	Mean	Std. Deviation	Test Value = 3.00			
			T	df	Sig. (2-tailed)	Remarks
First to develop new product	3.499	0.977	11.504	506	0.001	Significant
Innovation reduced cost of production	3.464	0.889	11.737	506	0.001	Significant
Launch research and development activities	3.393	0.931	9.490	506	0.001	Significant
Gain competitive advantages and growth	3.744	0.931	17.982	506	0.001	Significant
Technological superiority than others	3.692	0.829	18.797	506	0.001	Significant
Creation of inclusive and diverse banking products	3.613	0.894	15.453	506	0.001	Significant
Increase value, reduce cost and increase productivity through innovation	3.728	0.876	18.704	506	0.001	Significant
Satisfy unmet customer needs through innovation	3.736	0.912	18.170	506	0.001	Significant
N= 507						

Resources Mobilization Strategy in commercial banks

Table 4 shows that the highest grand mean of respondents regarding resource mobilization strategy is 3.68 (SD = 0.686). It falls under agreed band and the mean of almost all the opinion statements is greater than test value. To test the significant difference from the mean score, the p value of all opinion statement comes out to be 0.001(<0.01), which indicates that all the statements are significant variables. Manager uses innovation for recruitment and selection of competent staffs was found to be highest mean score of 3.779 (SD =0.870). Commercial banks of Nepal also make the innovation for achieve advantage and growth properly for effective strategic management and the accumulation and allocation of resources that was found to be the lowest

mean score 3.608 (SD = 0.914). Despite of being significant variables, it is also least important contributing factors to Resources Mobilization Strategy thus to strategic management. Table 4 puts details of resource mobilization practices dimensions.

Table 4: Respondents' view on Resources Mobilization Strategy in commercial banks

Opinion Statements	Mean	Std. Deviation	Test Value = 3.00			
			T	df	Sig. (2-tailed)	Remarks
Management of different resources	3.740	0.877	18.979	506	0.001	Significant
Utilization of equipment, services and facilities	3.700	0.918	17.174	506	0.001	Significant
Accumulation and allocation of resources	3.608	0.914	14.963	506	0.001	Significant
Recruitment and selection of competent staffs	3.779	0.870	20.157	506	0.001	Significant
Adequately and timely available of resources for implementation of strategies	3.619	0.871	16.018	506	0.001	Significant
Sound information system	3.669	0.931	16.176	506	0.001	Significant
N= 507						

Lending Strategy in commercial banks

Table 5 shows that the highest grand mean of respondents regarding lending strategy is 4.000 (SD = 0.746). It falls under agreed band and mean of almost all the opinion statement is greater than test value. To test the significant difference from the mean score, the p value of all statement comes out to be 0.001 (<0.01), which indicates that all the statements are significant factors. Managers applies credit policies for follow up directives of NRB which was found to be highest mean score 4.093 (SD = 0.962). This indicates commercial bank of Nepal makes the lending strategy for achieving competitive advantage and effective lending strategy, thus contributing to strategic management. Likewise, the credit policy and procedure before making loan was found to be the lowest mean score of 3.905 (SD = 0.906). It indicates towards lowest mean and lowest contributor, despite being the significant factor. Table 5 puts details of Lending Strategy practices dimensions.

Table 5: Respondents' view on Lending Strategy in commercial banks

Opinion Statements	Mean	Std. Deviation	Test Value = 3.00			
			t	df	Sig. (2-tailed)	Remarks
Credit policy and procedure before making loan	3.905	0.906	22.497	506	0.001	Significant
Visit business sites of customers	4.035	0.917	25.329	506	0.001	Significant
Loan decision made by loan committee with terms and condition	4.039	0.895	26.154	506	0.001	Significant
Evaluation of borrowers creditworthiness	3.978	0.946	23.287	506	0.001	Significant
Follow up directives of NRB	4.093	0.962	25.566	506	0.001	Significant
Analysis of financial statement for loan decision	4.014	0.933	24.455	506	0.001	Significant
Follow and monitor of loan customers frequently	3.939	0.923	22.903	506	0.001	Significant
N= 507						

Effect of Organizational Strategy on Organizational Performance

The influence of Organizational Strategy over Organizational Performance is analyzed with the regression analysis. Table 6 and 7, summarizes the model. The result shows that there is a significant impact of Organizational Strategy on Organizational Performance. It signifies that a change in Organizational Strategy will improve Organizational Performance. The finding of multiple regression analysis between Organizational Strategy and Organizational Performance indicates that Organizational Strategy is a significant predictor of Organizational Performance. The *R* value of 0.649 indicates the strong positive relationship between Organizational Strategy and Organizational Performance ($F=25.293$, $p<0.01$). Similarly, *R*-square value of 0.409 states that 40.9% change in performance is due to combined independent variables. Likewise, Standard error of the estimate of 0.556 indicates the variability of the observed value of Performances from regression line is 0.556 units. Since, VIF of each of independent variables is less than 10, there is no problem of multicollinearity in this model. Thus, it was shown that there is significant correlation between Organizational Strategy and significantly predict the Organizational Performance. All the variables of Organizational Strategy are significantly influences the

dependent variable organizational performance. The variable of Organizational Strategy viz., Lending Strategy has 2.9%, Treasury Management Strategy has 19.8%, Resource Mobilization Strategy has 11.6%, Innovation and Service Quality Strategy has 16.2% and, Segmentation Strategy has 18.0% contributed towards Organizational Performance.

Likewise, *t*-value of the coefficient and their significance levels are reported in table 7. It is observed that the *t*-values of two variables are statistically significant at 1% level namely Treasury Management Strategy and Resource Mobilization Strategy, whereas, the variables namely, Innovation and Service Quality Strategy and Segmentation Strategy are significant at 5%. This suggests that these variables have a bearing on explaining the variability of organization performance. However, *t*-value for Lending Strategy is not statistically significant. The finding of this study is aligned with the study made by Jusoh (2006), Perera, Harrison, and Poole (1997), Abernethy and Lillis (1995) and Davila (2000). They investigated the influence of organizational strategy on organizational performance. It was found that a change in organizational strategy will improve organizational performance.

Table 6: Model Summary Organizational Strategy on Organizational Performance

<i>Model</i>	<i>R</i>	<i>R Square</i>	<i>Adjusted R Square</i>	<i>Std. Error of the Estimate</i>	<i>Durbin-Watson</i>	<i>F</i>	<i>p value</i>
1	.649 ^a	.409	.390	.55689	1.924	25.293	.001
a. Predictors: (Constant), Lending Strategy, Treasury Management Strategy, Resource Mobilization Strategy, Innovation and Service Quality Strategy, and Segmentation Strategy							
b. Dependent Variable: Organizational Performance							

Table 7 : Multiple Regression Analysis: Coefficients

<i>Model</i>	<i>Unstandardized Coefficients</i>		<i>Standardized Coefficients</i>	<i>t</i>	<i>Sig.</i>	<i>Collinearity Statistics</i>	
	<i>B</i>	<i>Std. Error</i>	<i>Beta</i>			<i>Tolerance</i>	<i>VIF</i>
(Constant)	1.768	.182		9.737	.001		
Lending Strategy	.029	.058	.030	.507	.612	.449	2.229
Treasury Management Strategy	.198	.056	.209	3.532	.001	.455	2.196
Resource Mobilization Strategy	.116	.044	.127	2.640	.009	.688	1.454
Innovation and Service Quality Strategy	.162	.073	.159	2.210	.028	.307	3.254
Segmentation Strategy	.180	.057	.176	2.398	.016	.535	1.869

From the above results, the estimated equation can be written by taking the values from the model:-

$$\hat{Y} = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e_i$$

Therefore, $\hat{Y} = 1.768 + 0.029 * X_1 + 0.198 * X_2 + 0.116 * X_3 - 0.162 * X_4 + 0.180 * X_5$

Discussion and implications

The banking sector is the most prominent one in the financial sector, it is the fastest growing sector in Nepal in the last two decades. Financial liberalization and technological revolution intensify the competitive pressures among the financial institutions. Well-designed Organizational Strategy can more effectively and efficiently lead an organization towards higher performance.

The present scenario of Organizational Strategy in Nepalese Commercial Bank has a moderately utilized. The perception of employees' towards the dimensions of Organizational Strategy in a nutshell can be understood with a mean score of 3.75 (SD=0.681). Likewise, in terms of the dimension including Segmentation Strategy, Innovation Strategy, Resources Mobilization Strategy, Lending Strategy, Service quality and Delivery Strategy and Treasury Management Strategy. In these dimensions, the lending strategy implementation by the commercial banks was at the higher side, whereas, the lowest dealt with was segmentation strategy. Likewise, the mean scores for Segmentation Strategy practices in commercial banks was 3.55 (SD=.584). However, these commercial banks of Nepal make the financial statement analysis properly for effective strategic management and the Segmentation based on geographic region. The mean scores for Innovation Strategy practices in commercial banks was 3.609 (SD=.619). The managers use innovation for gaining competitive advantages and growth of their respective banks. Hence, these commercial banks of Nepal make use of the innovation for achieving advantage and growth for effective strategic management. However, the research and development activities were not their priority. The mean scores for Resources Mobilization Strategy in commercial banks was 3.68 (SD=.686). Managers use innovation for recruitment and selection of competent staffs. Commercial banks of Nepal also make the innovation for achieve advantage and growth properly for effective strategic management. However, the accumulation and allocation of resources is a matter of concern. The mean scores for Lending Strategy in commercial banks was 4.000 (SD=.746). Managers apply credit policies for follow up directives of NRB in Nepalese

commercial banks. The banks use lending strategy for achieving competitive advantage and effective lending strategy, thus contributing to strategic management. However, the credit policy and procedure is still a concern. The mean scores for Service Quality and Delivery Strategy in commercial banks was 3.78 (SD=.655). The recent technology helps the banks to provide faster reliable and better services. These commercial banks of Nepal make use of the technology for effective service quality and delivery strategy. However, the concern is the appearance of physical facilities. Likewise, the mean score of Treasury Management Strategy in commercial banks was 3.817 (SD=.658). The Nepalese commercial banks avoid insolvency and increase in collection rates, these banks are more prominent towards avoiding insolvency and focused on collection rates. However, the cash management through reserve, sell of quick assets and commercial papers are not encouraging.

The findings in this study show the evidence that an alignment among changes in Organizational Strategy significantly improves Organizational Performance. That is Organizational Strategy significantly increases performance of the banks. The findings indicate a change of 40.9% in performance is due to combined independent variables of Organizational Strategy. Likewise, the variables of Organizational Strategy viz., Lending Strategy have 2.9%, Treasury Management Strategy has 19.8%, Resource Mobilization Strategy has 11.6%, Innovation and Service Quality Strategy has 16.2% and, Segmentation Strategy has 18.0% impact contribution towards Organizational Performance. The finding of this study is aligned with the study made by Jusoh (2006), Perera et al.(1997), Abernethy and Lillis(1995) and Davila(2000).They investigated the influence of organizational strategy on organizational performance.

Recommendation for future Researchers

With this research on the relationship between organizational strategy and organizational performance, this area is ripe for future research. Among potential topics is the notion of how organizational strategy and organizational performance in other sectors or other service sector can be undertaken for further exploring the subject phenomenon. In order to improve the future study, the sample size could be collected from the manufacturing firms across the country (Nepal). This can further be compared to the service industries including the banking sector. Further research might be carried out with more sample of banks, as this study only based on six

commercial banks of Nepal. It may give new understanding the subject phenomenon. It can either attenuate or inflate correlations among variables. Furthermore, other moderating variables like MIS, customer loyalty, firm's size, age and structure, manufacturing costs, customer retention, and the success of marketing strategy etc. can also be explore further to understand the relationship between organizational strategy and organizational performance variables. In addition, a step further, Structural Equation Modeling approach of data analysis may be taken into account to moderating or mediating factors. Last but not the least, the next few years are likely to see increased global competitiveness in the Nepalese business environment, and the banking sector will also mature in terms of operational years. Therefore, it would be interesting to expand the survey to provide longitudinal survey of strategy and significant influence of the performance of the banks.

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Received: July 2021	Received in revised form: September 2021	Accepted: November 2021
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Effect of Liquidity on Financial Performance of Nepalese Commercial Banks

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Abstracts

The main aim of this research is to explore the effect of liquidity on financial performance of commercial banks in Nepal. The study used correlation and regression analysis to analyze and interpret the result. This research used secondary data from 2015/016 to 2019/020. In this research dependent variables' ROA and ROE are used and independent variables; CAR, CRR, LDR and LR. The result shows that there is a positive and significant effect of CRR on both ROA and ROE. The variable CAR has positive and significant effect on ROA but negative and significant effect on ROE. Moreover, variables LDR has negative and significant effect on both ROA and ROE. In addition, variable LR has positive and significant effect on ROA and negative and significant effect on ROE. The finding shows that the CAR has highly significant and negative effect on ROE, it means that in Nepalese financial market equity are less profitable. Furthermore, variable CRR has positive and significant effect on both ROA and ROE, it indicates that the strength of cash deposit to central bank play vital role to stabilize the financial performance of commercial banks in Nepal.

Key Words: Capital Adequacy Ratio, Cash Reserve Ratio, Liquidity Ratio, Loan to Deposit Ratio, Return on Assets, Return on Equity

Introduction

Bank plays an important role to provide facilities by their financial activities and generate profit. The banking in all around the world contributing each country economic development as financial services provider. Geographically Nepal is land lock country though economic growth is growing so far smoothly. Banking in Nepal economy plays vital role to national economic development. Most of youths goes Gulf countries and other countries where they can

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get job and generate money and they transfer money in Nepal to their respected family as remittance become one of major source of income for financial sector in Nepal (Budhathoki et al. 2020). Sound financial health for banking is one of the indicators that generating profit. Moreover, banks financial performance matters for every bank especially commercial banks. The liquidity position of banks became a major challenge in worldwide and it has serious effect so far bankrupt. Liquidity is one of the factor that trigger to profit decrease and increase of banks. Hertina et. al. (2021) found that the liquidity ratio is used to measure a company's ability to meet short-term obligations. In banking, Liquidity concern is a level of strength of financial institutions, especially in the banking industry (Assfaw, 2019).

In Nepalese banking sector Liquidity is quite volatile over the period. Current condition of liquidity of Nepalese banking need to reduce through reliable financial market policy. Moreover, the liquidity and bank profitability shows strong effect in financial performance Nepalese commercial banks (Jha, 2012). For stable banking sector need stable economy of the country (Baral, 2007). Furthermore, it indicate that liquidity is one of factor that have impact in Nepalese commercial banks. This research tries to explore regarding liquidity effect on financial performance of Nepalese commercial banks. This research used liquidity variables Capital Adequacy Ratio, Cash Reserve Ratio, Liquidity Ratio, Loan to Deposit Ratio and as dependent variable financial performance Return on Assets (ROA) and Return on Equity (ROE).

Past literature shows that banking profitability in each country or cross-country widely used return on assets (ROA) and return on equity (ROE) as indicators as dependent variable to measured profitability. Bourke (1989) studied on profitability of banking ROA and ROE as performance measures. Zeitun (2012) studied the profitability of commercial banks on Gulf Cooperation Council (GCC) countries used ROA and ROE as performance measures as well. Most of the past studies used ROA and ROE as dependent variable to measure bank profitability. This research attempt to explore the banks financial performance as ROA and ROE are dependent variables. This study explores the factors of liquidity variables affect to the performance of the Nepalese commercial banks.

To examine the effect of liquidity on financial performance of commercial banks in Nepal, the research has been divided into seven section as introduction, literature review, operational definition of variables, methodology, result and discussion, conclusion and references.

Literature Review

Liquidity and Bank Profitability

Liquidity is often considered one of the important determinants of the bank's profitability. One of major objective of commercial bank is to maximize the wealth of shareholders. One of the curial points is to maintain optimal level of liquidity. In regard profitability of firm liquidity play vital role to fulfill the short-term obligation. Therefore, the liquidity have an important role to both shareholders and investors in terms of taking decision (Demirgünes, 2016). To achieve the financial goal, the firm need to be reduce the risk of short term obligation. Abbas et. al., (2019) explored the bank liquidity on the profitability of commercial banks in the post-crisis period between 2011 and 2017 in the Asian developed economies in the comparison with the USA banking industry. The study shows that the liquidity has strong influence on profitability as compared to other variables. In this research, liquidity ratio is considered as one of independent variable to determine the financial performance of the commercial banks in Nepal.

Capital Adequacy Ratio and Bank Profitability

Financial strength of the bank can be measured by the availability of capital in it. Banks can manage unforeseen losses, if they have adequate capital available with them. Adequacy of capital determines the financial soundness of the bank and less chances of failure of the bank. Capital adequacy ratio in their study showed the positive relationship on profitability (Suganya and Kengatharan, 2018). Ahmad and Ariff (2008) explored that the more capital implies a bigger cushion to avoid failure resulting from high risk. Athanasoglou et al. (2008) found that the capital and profitability are directly related. Srairi (2009) found GCC countries Capital and profitability has positive relation. However, well-capitalized banks are considered safer since they take less risk, and so, according to financial theory, pay lower returns, a negative relationship between profitability and the high capital ratio might be expected. Saona (2016) found that profitability and capital adequacy are inversely related.

Cash Reserve Ratio and Bank Profitability

To operate commercial banks smoothly need reserve required by law to hold a certain percentage of their deposits (Oganda et. at., 2018). Brahmaiah and Ranajee (2018) found that Indian central banks reforms regarding cash reserve ratio for private commercial banks and liberalization for foreign players. Oganda et al., (2018) studied cash reserve ratio on

performance of commercial banks in Kenya. Cash reserve showed a strong negative relationship with return on equity, indicating a significant negative relationship with Equity Bank's performance. As per the research, banks should minimize their cash reserves. Moreover, investment in productive investments, diversify their funding sources, and diversify their investments of these funds. In this research, cash reserve ratio expected to have both negative and positive effect on financial performance.

Loan to Deposit Ratio and Bank Profitability

Liquidity of respected banks or firms consider to be ability to meet all its obligations. The banks need to repay its depositors and full fill the all of transaction without delay. In banking sector, liquidity issues consider to be important because its smoothness build public trust (Anggari & Dana, 2020). Rosyid and Irawan Noor (2018) stated that the Loan to Deposit Ratio is how far the bank's ability to repay the withdrawal of funds. Loan to deposit ratio is one of important ratio that measure the liquidity condition of banks. Kusumastuti and Alam (2019) found that LDR has negative effect and has no significant effect on profitability. Rosyid and Irawan Noor (2018) also found that LDR has significant effect on profitability of commercial banks. This research expected LDR have both negative and positive affect on profitability of commercial banks.

Operational Definition of Variables

Variable	Definition	Formula
ROA	Net profit generation by banks or company through using respected banks assets.	$ROA = \frac{\text{Net Profit after tax}}{\text{Total Assets}}$
ROE	Net profit generation by banks or company through using respected banks equity.	$ROE = \frac{\text{Net Profit after tax}}{\text{Total Equity}}$
Liquidit y Ratio	The company ability to meet its short-term debt	$CR = \frac{\text{Current Assets}}{\text{Current Liabilities}}$
CAR	Capital adequacy ratio is calculated by dividing a bank's capital by its risk-weighted assets. The capital used to calculate the capital adequacy ratio is divided into two tiers.	$CAR = \frac{\text{Total capital}}{\text{Risk weighted assets}}$
LDR	The bank ability to replay depositors repay.	$LDR = \frac{\text{Total Loan}}{\text{Total Deposit}}$

CRR The amount reserve in banks according to central authority.
 CRR = Deposit X Reserve Ratio

Measurement of Variables

Variables	Measurement Definition	Acronym	Expected Sign
Return on Assets	Net profit to total assets	ROA	
Return on Equity	Net profit to shareholders equity	ROE	
Cash Reserve Ratio			-
Capital Adequacy Ratio	Shareholders fund to total risk weighted assets	CAR	+
Loan to Deposit Ratio	Total Credit to Deposits		-
Liquidity Ratio			-

Methodology

This research used secondary data over the period 2015/2016- 2019/2020. The data for this research has been collected from annual report of commercial banks of Nepal. Total 20 commercial banks have taken for this study as a sample. The data used in this research is balance panel data. The random sampling techniques has been applied to select the sample. To explore the relationship of liquidity on financial performance this research applied statistical tools, correlation and regression analysis. To show the effect of liquidity on financial performance, this research used CAR, LDR, CRR and LR independent variables. ROA and ROE research as outcome variables. To analyze the data statistical software SPSS version – 23 has been used.

The proposed econometric model for this study is expressed as:

$$y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 \dots \dots \dots + \varepsilon \dots \dots \dots (1)$$

Where,

Y = dependent variable

α = constant

β = coefficient of explanatory variables

X = vector of explanatory variable

e = error term.

The study uses the following econometric model.

$$ROA = \beta_0 + \beta_1 CRR + \beta_2 CAR + \beta_3 LDR + \beta_4 LR + e^t \dots\dots\dots I$$

$$ROE = \beta_0 + \beta_1 CRR + \beta_2 CAR + \beta_3 LDR + \beta_4 LR + e^t \dots\dots\dots II$$

Where, ROA = Return on Assets

CRR = Cash Reserve Ratios

ROE = Return on Equity

CAR = Capital Adequacy Ratio

e^t = Error terms

LR = Liquidity Ratio

$\beta_0, \beta_1, \beta_2, \beta_3$ and β_4 = Slope of the coefficient.

Results and Discussion

In this section of the research is to determine the empirical testing through correlation and regression analysis.

Table 1. *Correlation Metrix of Liquidity and Financial Performance*

	ROA	ROE	CRR	CAR	LDR	LR
ROA	1					
ROE	0.46	1				
CRR	0.32	0.29	1			
CAR	0.04	-0.21	0.13	1		
LDR	-0.24	-0.25	-0.04	-0.07	1	
LR	0.05	-0.14	-0.01	-0.16	0.04	1

Note: Annual report.

Table 1 presents the correlation between liquidity and financial performance. The value of ROA and CRR is 0.32 which have positive relationship. In regard ROA and CAR has positive relation and the value is 0.04. In other words, the ROA and LDR has negative relationship and

the value is -0.04. In addition, ROA and LR has positive relation relationship with value 0.05. Furthermore, ROE and CRR has positive relationship with value 0.29 but ROE and CAR, LDR and LR have negative relationship with value -0.21, -0.25 and -0.14 respectively.

Table 2 *Regression Coefficient of ROA and Liquidity Indicators.*

	Unstandardized				Collinearity Statistics	
	B	Std. Error	T	Sig.	Tolerance	VIF
(Constant)	2.172	.879	2.470	.015		
CRR	.020	.006	3.125	.002	.980	1.020
CAR	.001	.019	.039	.009	.950	1.052
LDR	-.015	.006	-2.295	.024	.994	1.006
LR	.004	.005	.773	.001	.972	1.029
Adj. R² = 0.385		F. Stat. = 4.094		F. Sig. = 0.004		D.W. = 1.037

Dependent variable: ROA

Table 2 shows the regression coefficient of liquidity indicators and ROA. Variance inflation factors of all dependent and independent variables are less than 5, it indicates that there is no multicollinearity between the independent variable. In a regression model, this means that one independent variable may be predicted from another independent variable. D.W. values of the variables are 1.037 which explains that there is a positive autocorrelation. (Durbin, J., & Watson, G. S. 1951). Adjusted R² is 0.385 which means that the selected independent variables explain 38.5% for dependent variables ROA and ROE. The regression model is fit because F. sig. value is 0.004 which is less than 0.05.

All independent variables have significant effect on financial performance of commercial banks in Nepal at 95% confidence interval because p – value of all independent variables have less than 0.05. there is a statistically positive and significant effect of cash reserve ratio (CRR), capital adequacy ratio (CAR) and liquidity ratio (LR) on return on assets (ROA). This result is consistent to the result of (Akhter, 2018) and contradict with the (Bordeleau, É., & Graham, C. 2010). The result also shows that there is a significant negative effect of loan to deposit ratio (LDR) on the ROA. This result is consistent with (Madushanka & Jathurika, 2018) and (Ozili, 2017).

The ROA model can be expressed as:

$$ROA = 2.172 + 0.02 CRR + 0.001 CAR - 0.015 LDR + 0.004 LR + e^t$$

Table 3. Regression Analysis of ROE and Liquidity.

	Unstandardized		T	Sig.	Collinearity Statistics	
	B	Std. Error			Tolerance	VIF
(Constant)	45.065	8.301	5.429	.000		
CRR	.215	.061	3.525	.001	.980	1.020
CAR	-.588	.180	-3.262	.002	.950	1.052
LDR	-.165	.061	-2.725	.008	.994	1.006
LR	-.091	.047	-1.926	.051	.972	1.029
Adj. R² = 0.638		F. Stat. = 7.344		F. Sig. = 0.000		D.W. = 1.528

Dependent variable: ROE

Regression coefficient of liquidity variables and ROE is presented in Table 3. The table shows CAR, LDR and LR have significant and negative effect on ROE at 5% level of significance, which describes that when CAR, LDR and LR of commercial banks in Nepal increases return on equity decreases. This result is consistent with the result of (Reschiwati et al., 2020) and opposite with the result of (Prasad & Prasad, 2019). There is a statistically positive and significant effect of CRR on ROE.

The F. Sig. value is 0.000, which means the ROE model of regression is fit at 5% level of significance. Adjusted R² value is 0.638, it indicates that 63.8% variance in the dependent variable ROE is explained by the liquidity variables. Durbin-Watson of the study is 1.528, which is less than 2 and inside the normal range. It explains, there is no autocorrelation between the independent variables. Now regression model can be expressed as:

$$ROE = 45.065 + 0.215 CRR - 0.588 CAR - 0.165 LDR - 0.091 LR + e^t$$

Conclusion

This research uses panel data to examine the effect of liquidity on the financial performance of commercial banks in Nepal. Cash reserve ratio of Nepalese commercial banks shows significant positive effect on ROA and ROE. It clarifies that CRR of commercial bank is good enough. Capital adequacy ratio result in ROA is positive and in ROE it shows statistically negative effect. It reveals that investment in Nepalese banks assets is better than equity. In

regard loan to deposit ratio in both model ROA and ROE has significant and negative effect. It specifies that the collected deposit of the commercial banks is not properly used to generate profit. In addition, variable liquidity ratio has positive and significant effect on ROA but negative significant on ROE. It indicates that the use of short-term securities trigger to profit but use of equity inverse effect. The findings of this study are considerable evidence for researcher and policy maker of financial institution. It could be argued that maintaining liquidity can increase the financial performance of commercial banks.

This study studied the liquidity effect on financial performance of commercial banks in Nepal only but the future researchers can apply the same model by using distinct liquidity related other variables in Development banks, Insurance companies, manufacturing companies and other financial institutions. Moreover, financial performance variable NIM and EPS can be used as outcomes variables in future research.

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Received: July 2021 Received in revised form: September 2021 Accepted: November 2021

Performance Analysis of Block Chaining Message Authentication Code (CBC MAC) and its Variants

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Abstract

The cryptographic algorithms employed in internet security must be able to handle packets which may vary in size over a large range. The majority of cryptography algorithms divide messages into large blocks to process them. due to this fact the messages must be prepared by padding the desired amount of zero bits to induce an integer number of blocks. This process contributes a considerable overhead when the short messages are more dominant within the message stream. In this paper, analyze is targeted on the performance of varied message authentication code generator algorithm supported cipher block. These all variants of cipherbased must share symmetric key before creating message authentication code. All variants of CBC MAC are implemented in JAVA. The results of empirical performance shows that two variants namely TMAC perform better for AES Encryption algorithm in larger size otherwise EMAC show the higher result with the Triple DES symmetric algorithm. The result shows that, when consider only on the performance aspect. Cycle/byte is calculated for comparing different variants of CBC MAC. Cycle/byte is decreased when input size of message is increased. Advanced Encryption Standard (AES) algorithm shows good performance than TDES and its better safety features than DES. CBC-MAC is maybe visiting be standardized as an AES mode of operation.

Keywords: CBC-MAC, EMAC, TMAC, Triple DES, Advanced Encryption Standard, Cycle/byte

1. Introduction

Message authentication has two parts: source authentication, which checks the source's identity and prevents messages from being accepted from a malicious source, and data integrity, which prevents the data from being changed with. One way of achieving authenticity as well as integrity is creation of message authentication code abbreviation as MAC or cryptographic checksum. MAC

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is a small fixed-size block of data which is computed by using a secret key that share between communicating parties. The Cipher Block Chaining Message Authentication Code (CBC MAC) is a well-known block cipher-based means of generating a message authentication code (MAC). The CBC MAC, on either hand, is well known for being insecure unless the message length is fixed. As a result, several CBC MAC versions for variable length messages have been proposed. The Encrypted MAC (EMAC) was the first to be proposed. It is obtained by encrypting the CBC MAC value with a new key K_2 that use the encryption function. That is:

$$\text{EMAC}_{k_1, k_2}(M) = E_{k_2}(\text{CBC}_{k_1}(M))$$

Where M is a message, K_1 is the key of the CBC MAC and $\text{CBC}_{k_1}(M)$ is the CBC MAC value of (Petrank & Rackoff, 2000) then proved that EMAC is secure if the message length is a positive multiple of n . EMAC requires two key scheduling of the underlying block cipher E . where E represents encryption function. XCBC takes three keys: one block cipher key K_1 , and two n -bit keys K_2 and K_3 . TMAC is formed from XCBC by changing (K_2, K_3) with $(K_2.u, K_2)$, where u is a non-zero constant and $."$ in $\text{GF}(2^n)$ represents multiplication. Whereas, in $\text{GF}(2^n)$, OMAC is produced by substituting (K_2, K_3) with $(L.u, L.u^2)$ for some non-zero constant u , where L is supplied by $E_k(0^n)$ (John & Phillip, 2000).

2. Research Methodology

Various sample messages for different size are fed to the different variant of CBC MAC and the enciphered/deciphered messages calculated along with the key required in order to compare the performance of candidate algorithms used within CBC MAC. The algorithms used for various flavors of CBC MAC are implemented in JAVA. The candidates algorithms allowed to run on J2SETM (Java™ Platform, Standard Edition 7 Development Kit) environment with Windows7, 64 bits machine having 4GB RAM, with Intel CORE™ i5 processor and analyze the performance of CBC MAC and its Variants using different Symmetric Cryptographic algorithm like Triple DES and AES in order to gain the efficiency over existing method like “Encrypted MAC (EMAC), XCBC MAC, Two-Key CBC MAC (TMAC) and One-Key CBC MAC (OMAC1). In this paper Cycle/Byte calculation is performed.

3. Literature review

In the current scenario, most of the researchers have proposed different message authentication code algorithms to make more secure and fast. Some of them are parallelizable some are using secure hash function like SHA- 1, SHA -2. Several research works to prove the security bounds for each variant of CBC MAC. Some of those literatures have analyzed MAC as pseudorandom function (PRF) similarly Pseudo-Random Functions and Parallelizable Modes of Operations of a Block Cipher have been proposed (Sarkar, 2009). Most of researchers have proposed improved security bounds in parallelizable environment as PMAC and non-parallelizable cipher block based TMAC and XCBC (Rogaway, 2000)

Many studies have been done on MAC built using block cipher including CBC MAC and its variants. They have been studied the security bounds for each variant of CBC. Performance analysis is done by comparing their key size and number of encryption invocation needed for creating MAC. Number of keys scheduled for each algorithm is compared with their security proposed.

3.1 Message Authentication Code (MAC)

Commonly, Message authentication code (MAC), also referred to as a keyed hash function is used to achieve message authentication. Generally, MACs are used between those two parties who share a secret key to authenticate information exchanged between them. A MAC function uses a secret key and a data block as input which produces a hash value, known as the MAC. This can then be either transmitted with the protected message or stored with it. If the message's integrity needs to be verified, the MAC function can be applied to it and the result compared to a previously saved MAC value. Without knowing the secret key, an attacker who modifies the message will be unable to change the MAC value. Because no one else has access to the secret key, the verifying party knows who the sending party is as well. In practice, MAC algorithms are meant to be more efficient than encryption techniques. A secret key is used to construct a short fixed-size block of data known as a cryptographic checksum or MAC, which is attached to the message as an alternative authentication approach. This method presupposes that two communication parties, say A and B, have a shared secret key. When A needs to transmit a message to B, it works out the MAC as a function of the message and the key: (Stallings, 2010) $MAC = MAC(K, M)$ Where $M =$ input message $C = MAC$ function $K =$ shared secret key MAC

= message authentication code

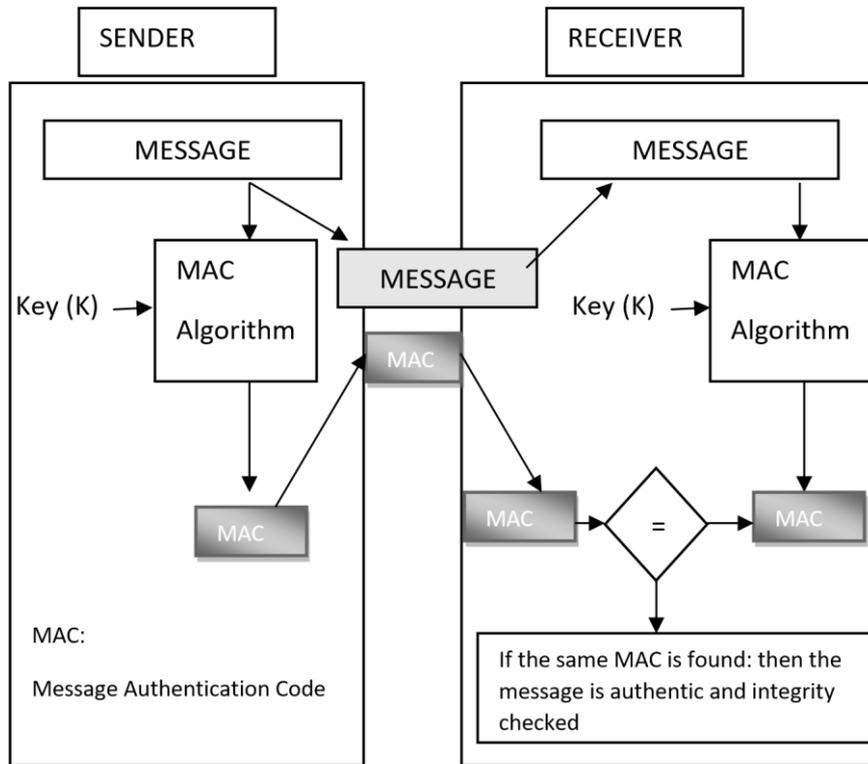


Figure 1: Message Authentication Code

3.2 Key Generation

The key length of CBC MAC is k bit only where k is the bit length of secret key share by sender and receiver but key length for other variants is vary than k bit. Where EMAC required $2k$ bit obtained from two secret key. XCBC required three key one k bit and other two key have $2n$ bits, here n is the length of block size of message. Suggested by (Kurosawa & Iwata, 2003/082) it is reduced as following:

$$K1 = \text{the first } k \text{ bits of } E_k(C_{1a}) \parallel E_k(C_{1b}),$$

$$K2 = E(C_2),$$

$$K3 = E(C_3). \text{ Where } C_{1a}, C_{1b}, C_2, C_3 \text{ are distinct constants.}$$

Next two variants TMAC and OMAC are the refinement of XCBC. Key for TMAC is obtained by replacing $K_{2,u}$ and keys are generated in OMAC by replacing K_2 as $L.u$ and K_3 by $L.u^2$. Where u be the some positive constant and “.” is a multiplication in $GF(2^n)$ and L is obtained as follows:

$$L = E_k(0^n) \text{ (Stallings, 2010).}$$

3.3 Cipher Block Chaining (CBC)

CBC is a technique that produces multiple ciphertext blocks when the same plaintext block is repeated. The XOR of the current plaintext block and the preceding ciphertext block is used as the input to the encryption algorithm in this method; the same symmetric key is utilized for each block. In effect, the processing of the plaintext blocks has been linked together. Each plaintext block's input to the encryption process has no defined link to the plaintext block. As a result, repetitive patterns of bits are hidden. If the last block is a partial block, the CBC mode, like the ECB mode, requires that it be padded to full bits. Each cipher block is put through the decryption algorithm for decryption. Each cipher block is put through the decryption algorithm for decryption. The plaintext block is created by XORing the result with the previous ciphertext block. (John & Phillip, 2000) It can be viewed as

$$C_j = E(K, [C_{j-1} \oplus P_j])$$

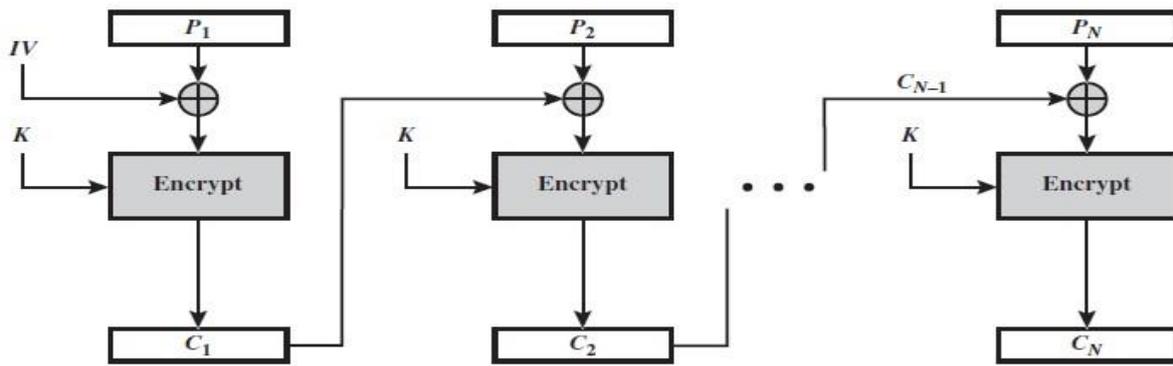


Figure 2 : Encryption of CBC Mode

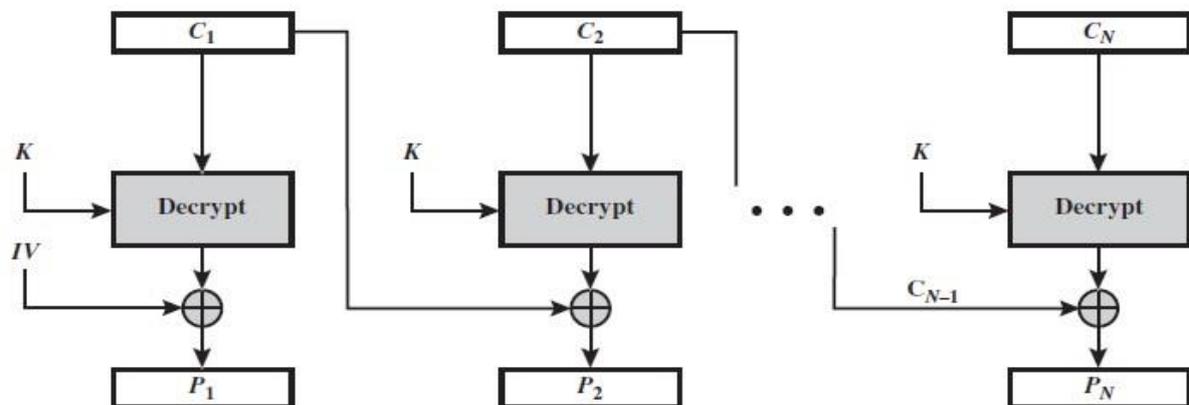


Figure 3 : Decryption of CBC mode

3.3.1 Cipher Block Chaining Message Authentication Code (CBC -MAC)

CBC-MAC is a block cipher-based approach for generating a message authentication code. To form a chain of blocks, the message is divided into an equal number of blocks and encrypted with a block cipher algorithm in CBC mode, with each block depending on the proper encryption of the preceding block. For this interdependence, every change to the plaintext bits causes the final encrypted block to change in unexpected ways that can't be predicted without knowing the block cipher's secret key. M can be decomposed into blocks as $M = M_1, M_2 \dots M_m$, where M_i denotes a message block. The result is XORed with the following block after passing each block through the encryption E with key K . If E_k denotes encryption with a secret key K , then the cipher block chaining technique is as follows: (John & Phillip, 2000)

Algorithm

INPUT: block of message (M)

OUTPUT: MAC (Tag)

Algorithm $CBC-MAC_K(M)$

Partition M into $M[1] \dots M[m]$

$C[0] = 0^n$ for $i =$

1 to m do

$C[i] = E_K(C[i-1] \oplus M[i])$

Tag = $C[m]$ return Tag

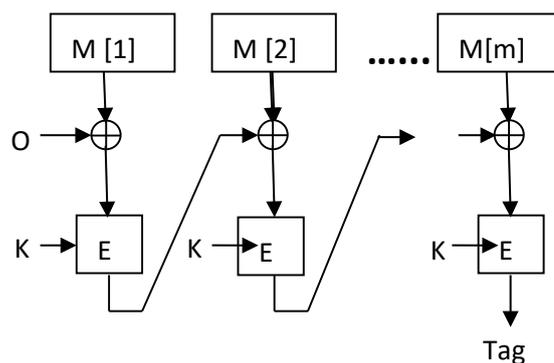


Figure 4 : CBC -MAC

The CBC-MAC is available in several versions, each with its own set of features such as padding and length variable. The most common method of padding for CBC-MAC is to treat the final input block as a partial block of data that is left justified and has zeroes appended to make a full block.

3.3.2 Encrypted –MAC (EMAC)

Encrypted MAC (EMAC) was created to deal with changeable message length in blocks m . $CBC_{EK_1}(M)$ is encrypted by MAC using a new block cipher key K_2 . That is:

$$EMAC_{EK_1, EK_2}(M) = E_{K_2}(CBC_{EK_1}(M)).$$

The RACE project generated the EMAC, a popular variation of the CBC-MAC. One issue is that the message length must be a positive multiple of n , hence the domain must be $((0, 1)^n)^+$. To deal with messages whose lengths are not multiples of n , append the minimum 10^i to M as padding. Even if the message's size is already a multiple of n , the padding is added.

The domain of EMAC is $0,1^*$, which means it can handle entirely changeable message lengths.

Algorithm

INPUT: block of message (M)

OUTPUT: MAC (Tag)

Algorithm $EMAC_{K_1, K_2}(M)$

Partition M into $M[1], \dots, M[m]$

$C[0] = 0^n$ for $i =$

1 to m do

$C[i] = E_{K_1}(C[i-1] \oplus M[i])$

Tag = $E_{K_2}(E_{K_1}(C[m-1] \oplus M[m]))$ return

Tag

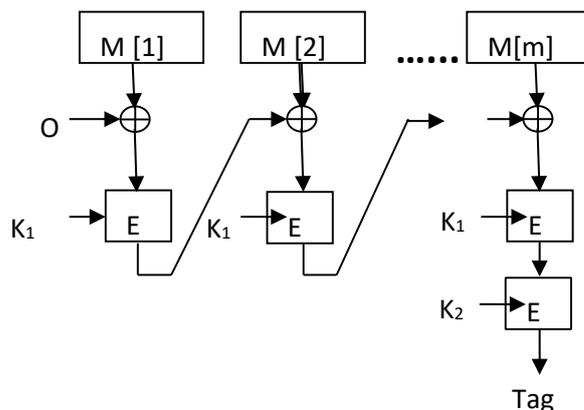


Figure 5: EMAC

3.3.3 XCBC MAC

XCBC takes three keys: one block cipher key K_1 , and two n -bit keys K_2 and K_3 . XCBC makes two cases to deal with arbitrary length messages: $M \in (\{0, 1\})^+$ and $M \notin (\{0, 1\})^+$. If $M \in (\{0, 1\})^+$ then XCBC computes exactly the same as CBC MAC, except XORing an n -bit key K_2 before encrypting the last block. If $M \notin (\{0, 1\})^+$ then minimal 10^i padding ($i \geq 0$) is appended to M so that the length is a multiple of n , and XCBC computes exactly the same as the CBC MAC, except XORing another n -bit key K_3 before encrypting the last block.

Algorithm

INPUT: block of message (M)

OUTPUT: MAC (Tag)

Algorithm $XCBCMAC_{K_1, K_2, K_3}(M)$

Partition M into $M[1], \dots, M[m]$

$C[0] = 0^n$ for $i = 0$

to $m-1$ do

$C[i] = E_{K_1}(C[i-1] \oplus M[i])$ if $|M[m]| = n$ then Tag = $E_{K_1}(C[m-1] \oplus M[m] \oplus K_2)$

else Tag = $E_{K_1}(C[m-1] \oplus M[m] 10\dots 0 \oplus K_3)$ return Tag

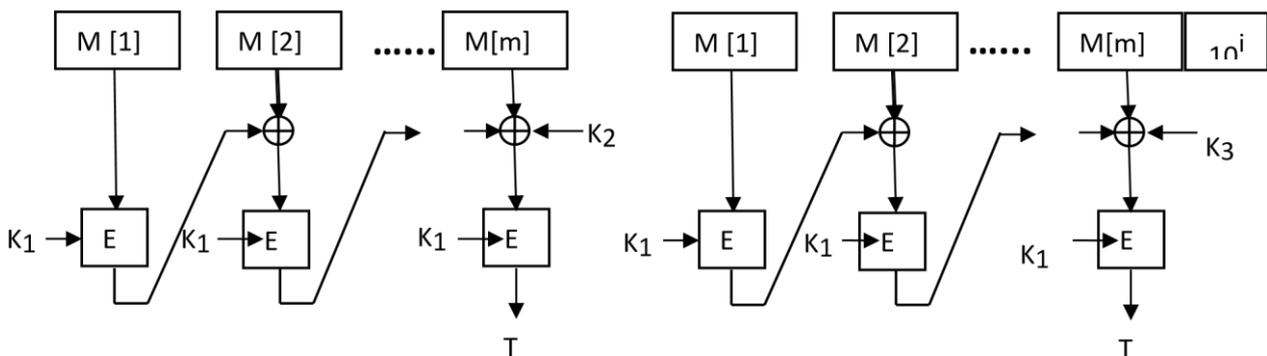


Figure 6: XCBC

3.3.4 TMAC

A refinement of XCBC is the two-key CBC Message authentication code. TMAC requires only a $(k+n)$ bit key, whereas XCBC needs a $(k+2n)$ bit key, where k is the underlying block cipher's key

length and n is the block length. TMAC is obtained by substituting (K_2, K_3) with $(K_2.u, K_2)$ in XCBC, where u is a non-zero constant and $"."$ denotes multiplication in $GF(2^n)$ (Iwata & Kurosawa, 2003)

Algorithm

INPUT: block of message (M)

OUTPUT: MAC (Tag)

Algorithm $TMACK_{1, K_2}(M)$

Partition M into $M[1] \dots M[m]$

$C[0] = 0^n$

for $i = 0$ to $m-1$ do

$C[i] = E_{K_1}(C[i-1] \oplus M[i])$ if $|M[m]| = n$ then $Tag = E_{K_1}(C[m-1]$

$\oplus M[m] \oplus K_2.u$ else $Tag = E_{K_1}(C$

$[m-1] \oplus M[m] 10\dots0 \oplus K_2)$ return Tag

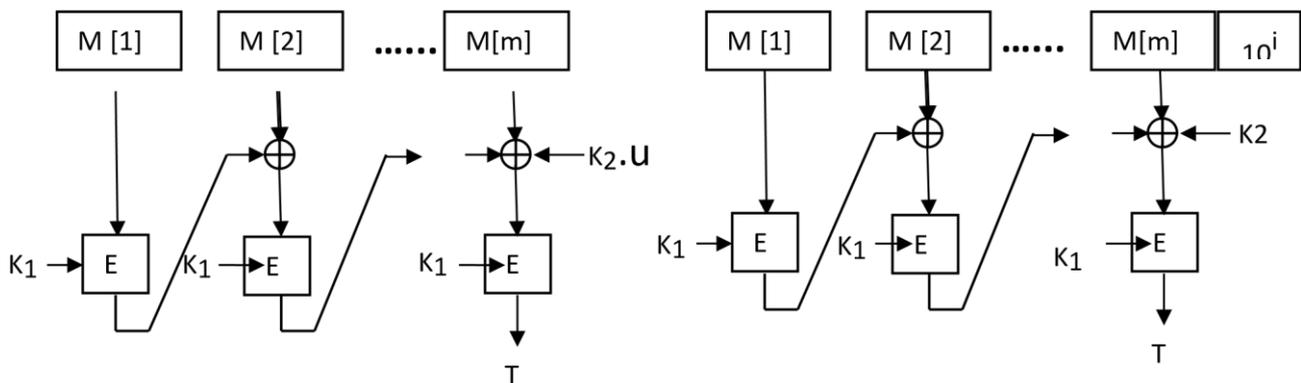


Figure 7 :TMAC

3.3.5 OMAC 1

Only one key, K (k bits) of a block cipher E , is used in one-key CBC MAC. Previously, XCBC required three keys, totaling $(k+2n)$ bits, while TMAC required two keys, totaling $(k+n)$ bits, where n denotes E 's block length. OMAC1 and OMAC2 are known by the generic term OMAC. OMAC1 is created by substituting (K_2, K_3) in $GF(2^n)$ with $(L.u, L.u^2)$ for some non-zero constant u , where L is defined by

$$L = E_K(0^n).$$

OMAC2 is similarly obtained by using $(L.u, L.u^{-1})$.

Algorithm

INPUT: block of message (M) *OUTPUT:*

MAC (Tag)

Algorithm OMAC-family_k(M)

$$L = E_K(Cst)$$

$$Y [0] = 0^n$$

Partition M into M [1]M[m]

for i = 0 to m-1 do

$$Y[i] = E_{K1}(Y [i-1] \oplus M[i])$$

$$X[m] = \text{pad}_n(M[m] \oplus Y [m-1]) \text{ if } |M[m]$$

$$| = n \text{ then } X[m] = X[m] \oplus L.u$$

$$\text{else } X[m] = X[m] \oplus L.u^2$$

T = E_K(X[m]) return

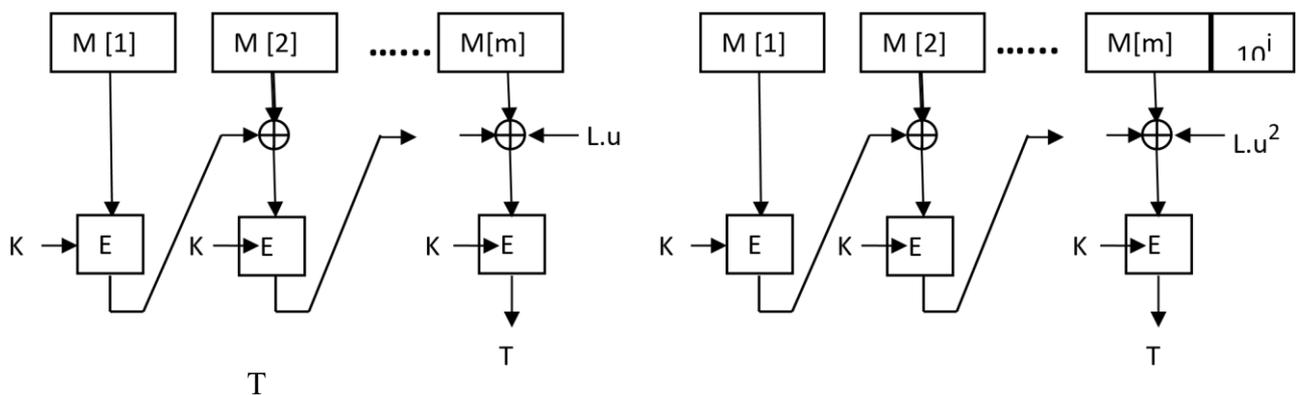


Figure 8: OMAC1

4. Experimental Setup

The experiments have been conducted on a laptop with an Intel Core i5 -2450M Processor 2.50GHz having 4 GB RAM. The operating system is Windows 7 Ultimate running in 64-bit mode. The system is running the java VM 22.0 -b10, Java HotSpot (TM) 64-Bit Server 1.7.0_02 with NetBeans IDE 7.0.1.

4.1 Measuring Cost

There is some extra cost which may be added to the absolute cost for creating message authentication code using different CBC MAC algorithm and its all variants but this is equally affected to all candidate's algorithm on the execution. The system time in nanosecond is taken just before the execution of code segment for generating message authentication code (MAC) or tag along with key generation time in each algorithm and the completion of the execution. The time spending for creating MAC is calculated by subtracting start time taken before execution from completion time taken after completing execution of specific code segment which is used to produce MAC. The time required for each algorithm is calculated as follows:

```
long startTime = System.nanoTime();
// CreateMAC function call long timeRequired =
System.nanoTime() - startTime; Various processes may
be run in background of system so absolute measurement
may not be measure due to this reason, time needed for
creating MAC in all algorithm may not be observe same
in every run of program. Therefore at least 5 times, the
program implemented in java is run in architecture
describe as above section and finally average required
time observed in every run is calculated as:
```

Average required Time = $\frac{1}{5} \sum_{i=1}^5 T_i$ where T_i represent time obtained in i^{th} run of execution.

This average calculated time is used to calculate cycle per byte.

4.2 Measuring Performance

Timing cryptographic primitive is useful when analyzing the performance of multiple algorithms on a single machine but it may vary on other machine therefore, cryptographer prefer to measure how many cycles it takes to process each byte. Different cycle/byte is calculated in the same box also because of background other process. So, to optimize such extra cost, average is taken running multiple times in same machine for each candidate algorithms.

In this paper Cycle/byte calculation with the following parameters: time in second spent creating MAC(T_s), frequency of the CPU in Hz(F) and message input in bytes(L). the formula for creating cycle/byte suggested by (Stallings, 2010) is:
$$\text{Cycle/byte} = \frac{T_s \times F}{L}$$

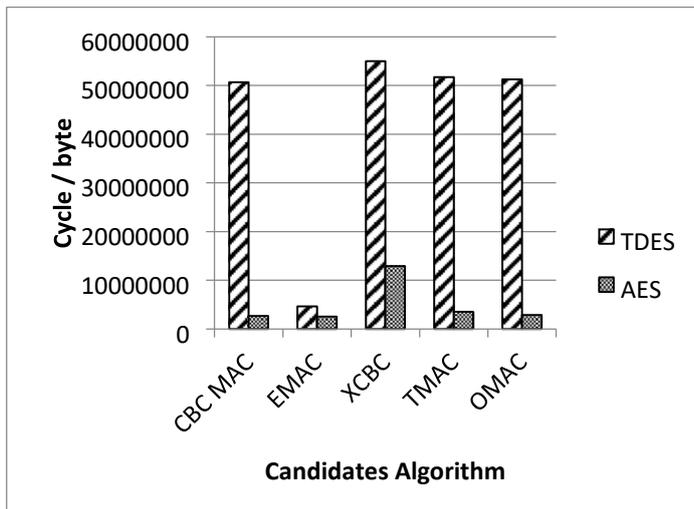


Figure 9: Performance of CBC MAC with its variants for small message size (29 byte) with encryption algorithm AES and TDES.

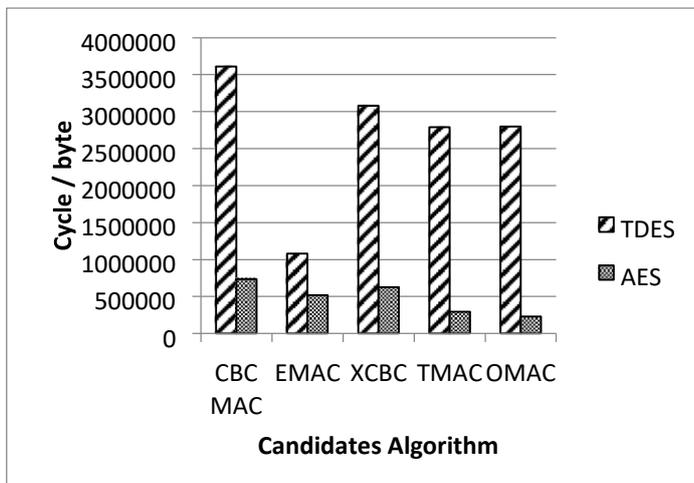


Figure 10: Performance of CBC MAC with its variants for small message size (595 byte) with encryption algorithm AES and TDES.

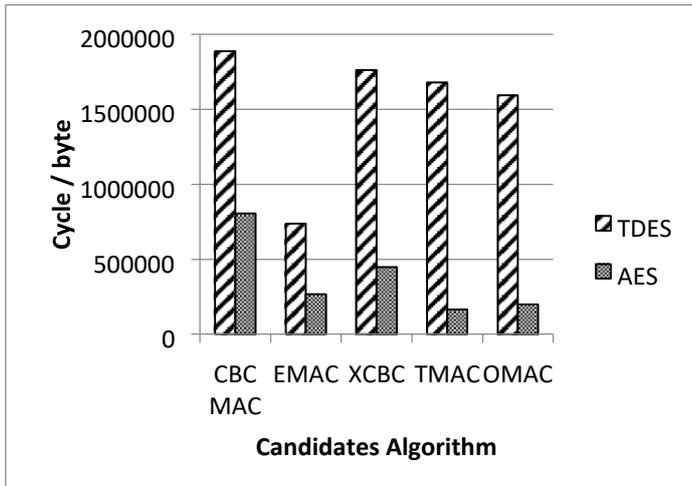


Figure 11: Performance of CBC MAC with its variants for message size (1KB) with encryption algorithm AES and TDES.

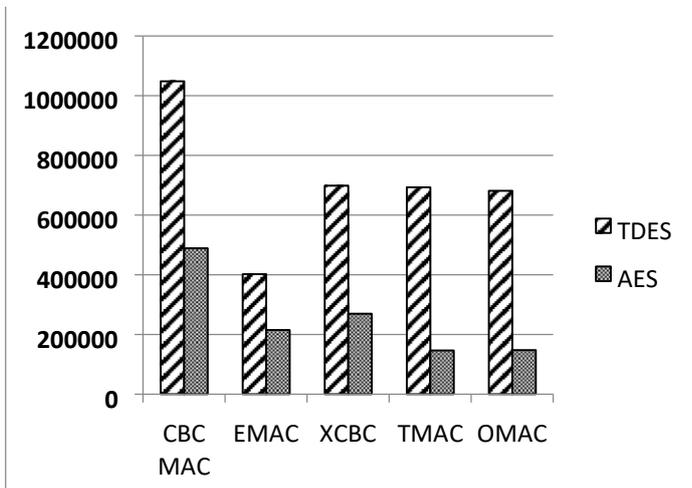


Figure 12: Performance of CBC MAC with its variants for message size (2KB) with encryption algorithm AES and TDES.

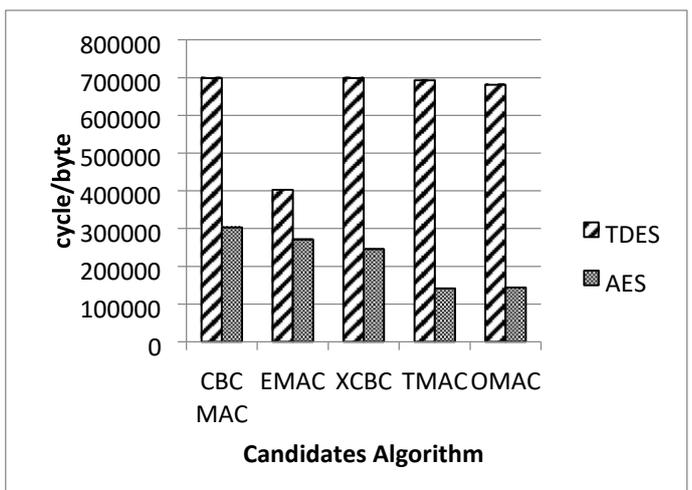


Figure 13: Performance of CBC MAC with its variants for small message size (5KB) with encryption algorithm AES and TDES

5. Results

If the encryption algorithm is TDES, Encrypted MAC (EMAC) seems to be the better cryptographic variants of CBC MAC whatever the size of message is taken to generate message authentication code (MAC). But, the nature of time required to create MAC changed according to input size of message in the case of AES. For small size of message, EMAC seems to be best model in AES algorithm also but it does not remain same when input size increased. By this way, Two-key MAC (TMAC) seems to the best cryptographic message authentication code algorithm based on cipher blocking chaining (CBC) mode. It is observed that TMAC yields 3%-80% better performance (cycle/byte) than other variants when encryption algorithm is AES for small size message when size is increased it yields to 2%-53%. EMAC yields 90%-91% better performance than other variants when encryption algorithm is TDES for small size message when size is increased it yields to 40%-42%. For comparing two symmetric encryption algorithms, TDES and AES, it seems AES algorithm is best to use for every variant of CBC MAC. TDES has 5-11 times higher cycle/byte than AES.

6. Conclusion

The variants of cipher block chaining-based message authentication code algorithm are discussed along by using their java implementation. The result of empirical performance comparison shows that two variants of CBC MAC perform better depending on the message size and symmetric encryption algorithm. First EMAC or Encrypted MAC needs fewer cycles for processor to process byte when symmetric encryption algorithm is triple DES. In this encryption algorithm EMAC remains same performance by comparing with other variants but in case of AES result is not same for all size of message. For smaller size EMAC shows better performance than other when size of message is increased, TMAC shows the better performance. Comparatively OMAC is also shows better performance when large size of message is used to create MAC than other variants like CBC MAC, XCBC, and EMAC if the encryption algorithm is AES. For TDES for every size of input to the algorithm, EMAC shows better performance.

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Received: July 2021 Received in revised form: September 2021 Accepted: November 2021

Sector Wise Absorptive Capacity of Government Budget of Nepal

-Dipendra Bikram Sinjapati¹

Abstract

This article based on the sector wise absorptive capacity of government budget of Nepal. The main objective are to find out the pattern and implication of off-budget items in government budget. This article has been done using both quantitative and qualitative method. The research is quantitative research based upon macro data from Fiscal Year 2011/12 to 2015/16 government budget absorption capacity and 2011/12 to 2016/17. The basic objective of this article is to find out sector wise absorptive capacity of the government budget and to find out the size of off budget through off treasury but not being limited to it. For this purpose both descriptive as well as analytical and empirical research design is follow. The recent trends have been quite different. Off- budget items are mounting. The loan part of foreign assistance has been incorporated in budget whereas grant assistance is increasingly being routed through off-budget. This is concerned with the government finance, budgeting and Sector wise Absorptive Capacity of Government Budget of Nepal and modes of payment of Official Development Assistance (ODA) provided by Development partners in Nepal. In current scenario of government of Nepal almost 20% of national budget depends on the ODA. Government budget are not fully absorb, almost 85% budget are consumed. Public general service and economic affairs sector has high range of absorptive capacity. During the entire fiscal year budget expenditure could not expedite, government institution consumed less than 50% of total budget but at the end of the fiscal year more than 85% budget are spent to avoid budget freeze. ODA should be focus on the sartorial balance to ensure the equal development of nation.

Key Words: Absorptive Capacity, Development, Budget, National plan and Programme

Introduction

National budget is the prime concern of public finance in every nation's economy. Every government declares its national budget for conducting their plans and action through the line

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ministry. In the national budget every plans program or project gets planned and budget disburse through the government treasury by line ministry. Even though some programs and plans are conducted without being channelized thorough the national plan, budget and the national treasury such kind of plans and program or project are conducted by the development partners directly (Economic survey, 2015/16). When the plans and programs or projects are addressed on national planning and budget allocation are made in the national budget and then to conduct such plans and program or project budget are disburse through the government treasury then it's called On budget On treasury projects. When the projects are not address by the national planning and budget are not allocated for such project even though the project are conducted and funded from the direct payment or direct assistance without engaging the national treasury through the developing partners such kinds of project are called off budget off treasury. In some case project are addressed on national plan and the budget are allocated but lack of national budget projects are directly conducted and funded by the development partners such kind of project is called on budget off treasury projects (Development Cooperation Report, 2015/16).

Government income (government's revenue and grants) had increased by 17.98 percent to Rs.531.41 billion In FY 2015/16 compared to FY 2014/15. Of the real expenditure of Rs.601.01 billion in FY 2015/16, recurrent expenditure shared 61.8 percent, capital expenditure 20.5 percent while financing shared 17.7 percent. Such expenditures were 63.9 percent, 16.7 percent and 19.4 percent respectively in the previous fiscal year 2014/15. The level of deficit, however, has varied from year to year. The budget that remained in deficit by Rs.81.14 billion in FY 2014/15 decreased by 14.2 percent in FY 2015/16 and stood in deficit by 69.61 billion (Economic survey, 2015/16).

Donors are of different interests (World Bank 2076). Some are interested in infrastructure, others in cross cutting issues such as human rights, gender, regional balance, peace and security, law and justice. Some donors have their own country strategy papers. Some follow the IMF pattern, United Nation Development Programme model or their survey findings. Similarly, donors have particular procurement guidelines which differs donors to donors. For instance, two stage bidding process is applicable for one donor and another prohibits it. Nepal's procurement law clearly indicates that the particular donor's procurement guideline is fully applicable for their funding as well as project implementation. Currently there are around 35 donors who are on-budget (MOF 2077). Nepal's

project implementation as well as reporting system is immature and do not suffice the requirement of donors. Lack of professional accountants is always a problem in Nepal.

The main objective of the study is to find out the pattern and implication of off-budget items in government budget. The recent trends have been quite different. Off- budget items are mounting. The loan part of foreign assistance has been incorporated in budget whereas grant assistance is increasingly being routed through off-budget. The foreign assistance policy of Nepal remains clear that “as and when grant is available, loan assistance will be deferred.” For the last 10 years the grant assistance part is increasing. Hence, off-budget items are also increasing (Allen, 2007).

This study helps to find out the pattern of Off-budget items of foreign aid along with the percentage of off-budget items in terms of quantity. It also helps to suggest appropriate institutional arrangements, organizational and operational modalities and legal framework to reduce off-budget items of public finance.

Review of Literature

Khadka (1996) examined the relationships between aid and some key macroeconomic variables, such as savings, investment and economic growth in Nepal, for the period 1960-90. He found a positive correlation between Gross Domestic Product and per capita aid, which he believed counter-intuitive given the current state of the economy. Thus, Khadka, based on his descriptive analysis, concluded that foreign aid failed to improve levels of income, savings and investment. However, in another study, using a simple regression analysis for the period 1960-90, (Khadka ,1997) found that aid had a positive impact on the growth of GDP. In this study, he used only bilateral disbursements for aid data and excluded multilateral disbursements. Furthermore, he did not include any policy variables in the model except exports and imports.

Addison, and McGillivray (2005) examine trends in official aid to Africa over the period 1960 to 2002. The authors largely emphasize the tremendous decrease in aid over the last decade which will have an impact on Africans living in poverty and the African economy as a whole. As a result of the shortfall in aid, the MDGs will be much harder if not impossible to be achieved. This paper concludes that aid in fact does promote growth and reduces poverty. Furthermore, it also positively impacts public sector aggregates, contributing to higher public spending and to lower domestic borrowing. Nevertheless, it is apparent that the MGDs cannot be achieved with development aid alone, but other innovative sources of development finance need to be explored well.

(Karras, 2006) investigates the correlation between foreign aid and growth in per capita GDP using annual data from the 1960 to 1997 for a sample of 71 aid-receiving developing countries. This paper concludes that the effect of foreign aid on economic growth is positive, permanent, and statistically significant. More specifically, a permanent increase in foreign aid by \$20 per person results in a permanent increase in the growth rate of real GDP per capita by 0.16 percent. These results are obtained without considering the effects of policies.

An Economic and political Framework, This paper address about the how off budget expenditure weaken the government financial control. This paper focus on the many aspect of the budgeting, transformation of public sector, interface with the private sector, scope and size of the government, role and regulation of government, emergence of new form of organization and use of performance and long term planning. In this study empirical analysis are not made it is based on the descriptive methodology personal views are presented (Allen,2007).

Nemanja (2015) has examined the Government expenditure and government revenue – The Causality on the example of the Republic of Serbia. The main objective of this study is to investigate the links between government revenue and government expenditure in the Republic of Serbia, i.e. to indicate the measures that are necessary to reduce the budget deficit in Serbian economy. In the analysis, the monthly data from M1 2003 to M11 2014 are used. As an appropriate method for testing causality, He has used autoregressive distributed lag (ARDL), while the Granger causality has been tested within the vector error correction model (VECM). The empirical results obtained in this work can be represented as follows. Testing the stationary through the ADF and KPSS tests, it has been found that the government revenues and the government expenditure are not stationary after the second difference. Namely, they are not in the line with the integration I (2). The further analysis has revealed that there is co integration between the variables. Also, the analysis has shown that, in the long run, there is a unidirectional causality moving from government expenditure towards government revenues. This result is in accordance with spending revenue hypothesis. Based on the obtained empirical results, the political implications are that the government expenditures should be reduced in the long run. Specifically, in the case of an increase in government expenditure, government revenues should be also increased which implies an increase in tax rates. Such a situation would cause a further deterioration of the macroeconomic environment, bearing in mind all the difficulties of collecting tax revenues in Serbia.

Nepal Development Assistance Policy (2014) It contains provisions relating to lower limit of funding that can be accepted, registration of NGOs and INGOs with SWC. If the provisions of Development Assistance Policy are implemented in its spirit, off-budget can be managed (lower to its minimum).

The further depth of data's, analysis of Development cooperation report 2015/16 and preceding 5 years which contains key analytical information related to development cooperation has been conducted. It provides an overall scenario of aid mobilization in the country channeled through the Government's national budget along with off-budget mechanism by development partners including INGOs (Development Cooperation Report, 2015/16).

Methodology

Research has been done using both quantitative and qualitative method. The research is quantitative research based upon macro data from Fiscal Year 2011/12 to 2015/16 for study government budget absorption capacity and 2011/12 to 2016/17. The basic objective of the study is to find out sector wise absorptive capacity of the government budget and to find out the size of off budget through off treasury but not being limited to it. For this purpose both descriptive as well as analytical and empirical research design is follow. This study describes situation and events occurring at present by accumulating the past information and facts.

Data Collection

The article based upon secondary quantitative data. Economic survey, red book (line item as well as donor code "anudanshanket" wise for expenditure), blue book 1 (Annex Part of Budget Deliberation), blue book 2 (statement of foreign assistance), white book (source book) of Ministry of Finance, Central Accounts and Expenditure Reports of the Financial Comptroller General (FCGO) covering a period from Fiscal Year to 2016/17 and annual report of the office of Auditor General (OAG). Besides, internets, newspapers, magazines will be other sources of information. The primary data opinion of financial experts, ministries and department administrator, Development Partners and other related person are obtain through the questionnaire method.

Results and Discussion

Presentation and analysis of data is very important stage of research study. Its main purpose is to change the unprocessed data into understandable form. It is the process of organizing the data by

tabulating and then placing that data in presentable form by using various tables, figures and source. This study has focused on empirical study as well as secondary data regarding share of the on budget on treasury, on budget off treasury and off treasury off budget, sector wise absorptive capacity of grants along with the size of off budget through off treasury of Nepal are analyzed. Data and information were collected from different sources. Data relating to budget and grants are presented in this chapter to make research findings more meaningful. In this chapter, data gathered from different sources are presented, analyzed, compared and verified with the use of various financial and statistical tools. In fact, this chapter determines findings of the research and helps to fulfill research objectives.

Absorption Capacity of Government Budget

In this portion about the government consumption capacity as whole from the allocate budget. The data from the FY 2012/11 to 2015/16

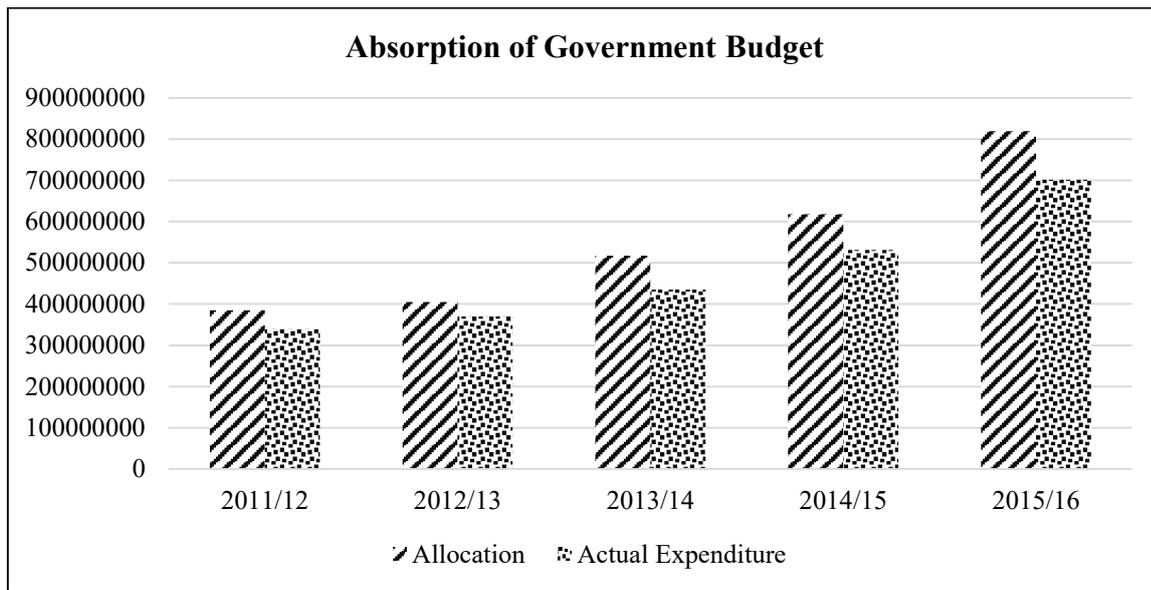
Table 1: Absorption of Government Budget (2011-2016) (Figures in NRs ('000'))

Fiscal year	Allocation	Actual Expenditure	Absorption Capacity
2011/12	384900000	339167485	88.11
2012/13	404824700	370126328	91.42
2013/14	517240000	435088643	84.11
2014/15	618100000	531339983	85.96
2015/16	819468884	701171698	85.56

Source: Red book of MOF

For the year 2015/16 expenditure data is used form revised budget.

Figure 1: Absorption of Government Budget (2011-2016)



In the above table and figure presents the overall consumption/expenditure on the capital expenditure and recurrent expenditure of the government budget. In the fiscal year 2011/12 government allocate Rs.384,900,000 hundred where expenditure were made Rs.339,167,485 hundred, absorption capacity for FY 2011/12 is 88.11% , 88.11% of allocated budget are utilized by the government entity. In the FY2012/13 government allocate Rs.404, 824,700 hundred where expenditure were made Rs.370, 126,328 hundred. Absorption capacity for the year 2012/13 is 91.42% which is 3.315% increase than previous year. In FY 2013/14 government allocated budget is Rs.517, 240,000 hundred where expenditure were made Rs.435, 088,643hundred, the absorption capacity for the year2013/14 is 84.11%. Absorption capacity is decrease for the year 2013/14 by 7.31% comparing to the FY 2012/13. In FY 2014/15 allocate budget is Rs.618, 100,000 hundred where expenditure were made Rs.531, 339,983 hundred only 85.96% budget were absorb. In FY 2014/15 absorption capacity is increased by 1.84% comparing the FY 2013/14.In FY 2015/16 allocated budget is Rs.819, 468,884hundred where expenses made Rs.701171698 hundred, absorption capacity is 85.56%. It seems that the consumption capacity of the government budget is below than 90%.

Sector Wise Absorptive Capacity of the Government Budget

Government of Nepal has been allocate and spend budget ten different sector with priority after implementation of Government finance statistics (FY 2067/68).Government of Nepal spend its

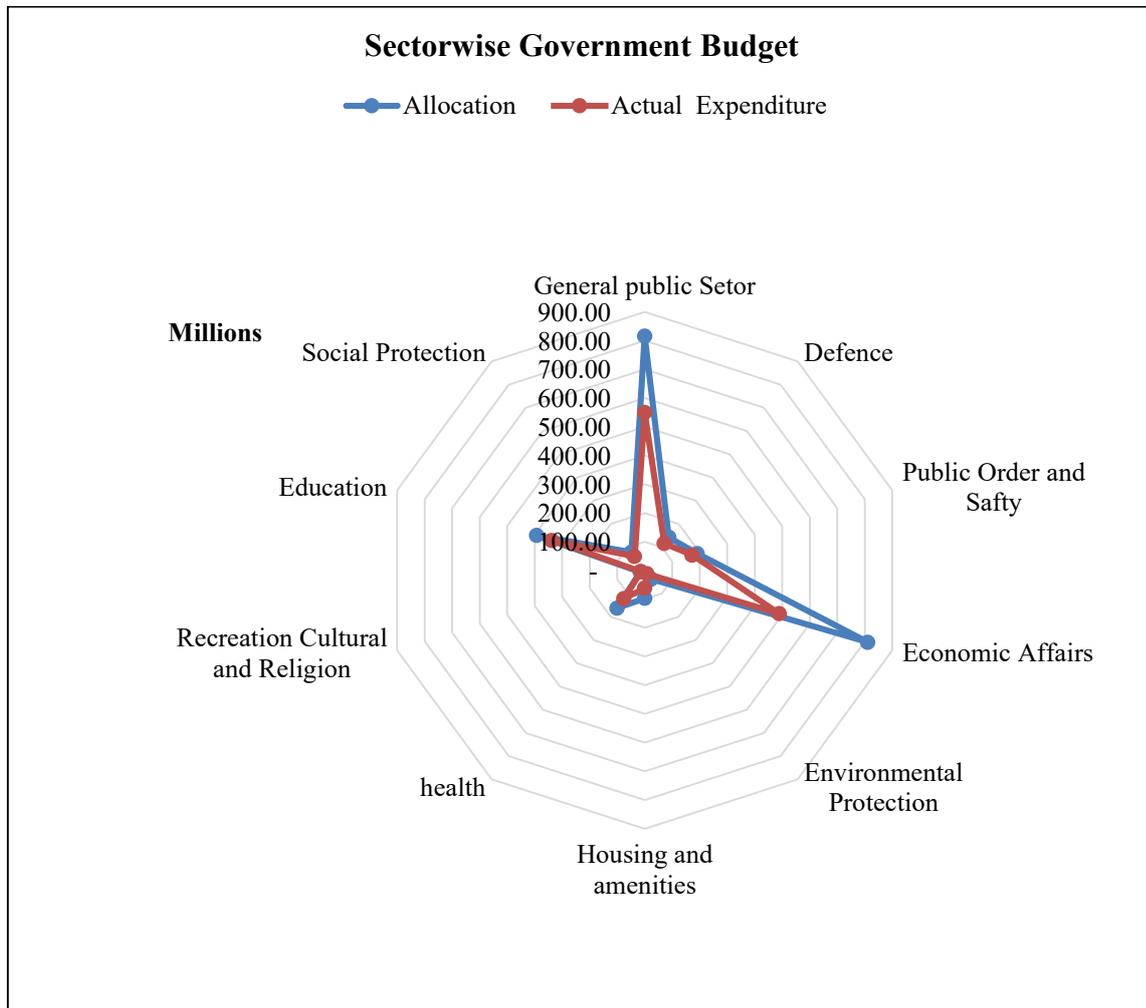
budget as per the service and functional sector. The following table shows the total allocation of budget and expenditure on these areas from the year 2011/12 to 2016/17.

Table 2: Sector wise absorptive capacity of government budget for last five years (2011-2016) (Figures in NRs (000))

S.N	Sectors	Allocation	Actual Expenditure	Absorption capacity (%)
1	General public Sector	816,250,419.00	550,395,660.00	67.43
2	Defense	141,787,005.00	115,909,967.00	81.75
3	Public Order and Safety	190,543,560.00	172,745,073.00	90.66
4	Economic Affairs	810894290	489369209	60.35
5	Environmental Protection	37,660,760.00	14,441,455.00	38.35
6	Housing and amenities	97523295	62223907	63.80
7	Health	162,400,670.00	121,604,029.00	74.88
8	Recreation Cultural and Religion	16,264,373.00	13,163,441.00	80.93
9	Education	392,985,197.00	337,172,575.00	85.80
10	Social Protection	78,218,711.00	59,873,512.00	76.55

Source: Red book of MOF

Figure 2: Sector wise absorptive capacity of government budget



From the above table and figure shows that the government investment is focus on the General public sector and the economic affairs. Nepal government mostly prefers to invest on the in these two sector but the budget consumption is comparatively low than the budget allocation only 60% and 67% budget are spend. In public order and safety, education, defence, recreation culture and religion has high absorption capacity they have 90.66%, 85%, 81.75and 80.93% respectively. In the environmental protection sector has very low absorptive capacity it has only 38.35% absorptive capacity.

Conclusion

There are numerous budgetary frameworks such as, Zero based budget, Performance based budget, Program budget. Planning-programming- budget system, Medium term expenditure framework

etc. Government of Nepal follows the medium term expenditure framework to furnish its every year budget. Government of Nepal's major source of financing is government revenue (Tax and non-tax Revenue), Foreign Grants assistance, Foreign loan. Internal source of government income cover the recurrent expenditure for the capital expenditure it is insufficient to cover the demands of expenditure so government takes foreign loan and grants for deficit financing. Government of Nepal presents its budget in every fiscal year Jestha 15. For the fulfillment of the Deficit budget government of Nepal has entered into agreement from Foreign Grants or Foreign loan with the development Partners (DPs).

DPs make commitment of Loan or grants as per the MOU agreement with the government of Nepal. DPs provide loan or grants in terms of Cash, Reimbursable, Direct payment and Commodity. While providing the Grants assistance DPs may not use the national system/ channel/ procedures. The use of national procedures means that the banking, authorization, procurement, accounting, audit, disbursement and reporting arrangement for donor fund are the same as those used for the Government fund. All direct and un-earmarked budget support (general or sector based) by definition use national procedures in all respects. Other types of donor funding such as basket fund/ pool fund and discrete project funding may use some or no elements of national procedures. Donors providing Aid out of the budget did not use national procedures. Even within the category of on budget aid some donor used direct payment, only partially using national procedures. This shows preference of DP's for providing assistance to Nepal is through informal channel via off budget off treasury mode.

The development corporation policy 2014 outlines Official Direct Assistance (ODA) modalities, these modalities are Humanitarian assistance, Program Support, Budget Support, Sector wide Approach SWAP and others.

Government budget absorption capacity is not found to be 100%. Major chunk of the allocated budget is not spent by the government agencies. More than 50% of the allocated budget is freeze due to low spending capacity. If we observe the spending pattern, almost 90% budget is spending by the government entity on last month of the fiscal year.

For service and function wise budget allocation in the government more investment made in the economic affairs, it seems that government is on right track towards attaining the Millennium

development Goal by (MDG) 2022 and becoming middle income country as well as attaining the Sustainable development Goal (SDG) 2030.

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<i>Received: July 2021</i>	<i>Received in revised form: September 2021</i>	<i>Accepted: November 2021</i>
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The Newars of the Hills : Remigration and Integration in the Kathmandu Valley

- Dr. Khadga Narayan Shrestha¹

Abstract

This paper describes the Newar's outmigration from Kathmandu valley to the eastern hills of Nepal and their remigration in the Kathmandu valley. It explores various causes of outmigration such as migration for trade, employment, kin based migration, forced migration and so on. However, the causes of remigration to their ancestral land is not because of their loyalty and being highly patriot to the ancestral land but because of searching various opportunities in the Valley. Based on both primary and secondary data the paper analyzes the ways of their social and cultural integration through different *guthi* and *samaj*. The re-migrated Newars are socially, culturally and economically interdependent and unified each other on the basis of their territory and their origin in the hills. Their integration in the valley is based on the social, cultural and economic needs. The inter-caste and interethnic integration in the valley represents both territorial and social structural based identity of the hills. However, the paper concludes that the inter-caste and interethnic based integration may be fragmented due to the economic prosperity of household members and increased number of households of their own caste and ethnic groups.

Key Words: Newar, Integration, *Guthi-Samaj*, Outmigration-remigration, Identity

Background

The Newars are indigenous people of the Kathmandu Valley. Their population is 5.4 percent (Central Bureau of Statistics-CBS, 2012). But, today they live in almost all districts of Nepal. The Newars have also migrated to many countries in the world. They are culturally rich. The feast, festivals, *Jatra*, *Parva*, custom, and tradition are not only unique but also a major part of the Newars' identity. Such an identity distinguishes the Newars from other castes and ethnicities in Nepal.

Scholars who studied the Newars unanimously claim that they were intermixed of multiple castes and ethnic groups of Nepal (Nepali, 1965; Bista, 1967; Sharma, 2039 B.S.). It took

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a long time to intermix. It is obvious that the process of fusion began from the Gopal dynasty and continued up to the Malla dynasty in Kathmandu Valley.

When people talk about the Newars of Nepal they make an image of Kathmandu Valley; art and architecture, *Jatra* and *Parva* relating to the Newars residing in the Valley. But, people either know very little about the Newars residing in the different settlement areas of Mountain, Hills and Terai region of Nepal or they simply ignore them. It is a matter of surprise for many people if some Newar says that they are from other districts like Solukhumbu or Khotang because Solukhumbu is synonymous to Sherpa and Khotang is to Rai community. Indeed, the population of Newar is very less in the respective districts. They are in minority and always struggling to maintain their identity in the hills. The loss of mother tongue, acculturation, and sometimes different physical appearances than the Newars of the Kathmandu Valley give space to raise questions on their identity in the hills and in the Kathmandu Valley. That's why the Newars who are settled outside of the Valley are shadowed in the academic sectors per se.

This paper attempts to examine the remigration and reintegration process of the re-migrated Newars from Solukhumbu and Khotang districts (the hills) to the Kathmandu Valley. More specifically, it tries to analyze how the re-migrated Newars unite with each other to maintain their socio-cultural integration and identity. It also highlights on inter-cultural and inter-regional integration of the migrants' Newars with the people of different caste and ethnicity residing in their locality in the Kathmandu Valley. However, I have described the outmigration of the Newars from the Kathmandu valley to contextualize the paper.

Methods and materials

This study is based on the re-migrated Newars from Solukhumbu and Khotang districts (hills) and settled in different parts of Kathmandu Valley being a member of different *guthi* or *samaj* they established.

This paper is qualitative in nature. I applied unstructured interviews with the re-migrated Newars currently residing in the Kathmandu Valley. In addition, I participated in many social, cultural, religious, and economic activities of the re-migrated Newars. Observation supported me to examine and analyze the level and ways of social and cultural integration. I carried some information through key informants' interviews and kuragraphy. The secondary sources were also used when necessary.

Outmigration

Migration is a movement of people from one place to another for various reasons such as being a refugee or victims of natural disasters; for better opportunities and easy livelihood. Migration may be voluntary or forced. Migration by their own will in search of easy livelihood, better education, or better jobs can be categorized as voluntary migration.

Whereas migration due to natural calamities or political disturbances such as refugees is forced migration.

Migration is a major cause of socio-cultural and economic change of the migrants. Migration not only affects social integration, disintegration, acculturation, and assimilation processes (Heide, 2001) but also raises the question of identity and change (Fuerer-Haimendorf, 1964; Lewis, 1989, 1993; Gellner, 2012). According to Schneller (2001) influx of international in-migrants creates serious problems on integration. Hence, migration is not only understood simply as the mobility of people but also the subject to change in the migrants' identity. Hoffmann (2001) argues that mobility and changes are to be analyzed through regional, national and international political and economic influences.

The studies on the Newars show that they were indigenous people of the Kathmandu Valley (Hamilton, 1819; Wright, 1877; Nepali, 1965; Bista, 1967) and out-migrated to different parts of Nepal, Tibet, Darjeeling, and Sikkim (Lewis & Shakya, 1988; Bista, 1967; Shrestha, 2006, 2015; Rajbhandari, 2013; Robertson, 2020) for various purposes. But, a commonly agreed argument on the Newars' out-migration is their involvement in trade. This argument is widely accepted because of their involvement in the various kinds of trades inside and outside the country. However, it is an injustice to keep different things in a single basket. So, we had better see some other reasons for the Newars' out-migration.

There are several reasons for the Newars' out-migration. The first is the migration for trade which is widely acceptable (Bista, 2030 B.S, 1980; Shrestha, 2006, 2015; Rajbhandari, 2013). The story of Tibet trade and the Newars in Tibet by Bista (1980), the trade of *gundruk* by Laxmidas Pradhan in Darjeeling (Shrestha, 2015) support this argument.

But, the second argument is quite different and supports the forced migration of the Newars. It is said that some Newars were forced to leave the Kathmandu Valley when King Prithivi Narayan Shah conquered the Valley and this was continued thereafter. Shrestha (2015) writes "the migration of the Newars from Nepal to the Himalayan Kingdom of Sikkim began in the middle of the 19th century (p. 1) Many Newars went exile in order to escape the torture and save their lives" (p. 4). Similarly, Pradhan (2018) states Gorkha conquest in Nepal Valley in 1769 A. D. was the cause of the Newars' out-migration. However, the ill behavior of the Gorkhali rulers on the Newars compelled them to leave the Kathmandu Valley (Shrestha, 2010; Tuladhar, et al., 2011; Sakasita, 2020). The forced migration was due to social, cultural, and political conflicts between the Newars and Gorkhali rulers.

Interestingly, the cause of forced migration is not similar. Robertson (2020) writes the ways King Rana Bahadur Shah exiled the Newar families and the hardest days they spent on the way to Tama Koshi due to the threat of smallpox in the Kathmandu Valley.

In 1799 Rana Bahadur, distraught and furious, desecrates and destroys the

temple of Hariti ma (known to Hindus as Sitala) at Swayambhu. Rana bahadur also orders children with the disease removed outside the Valley, all the way across the Tama Kosi in the East or the Marsyandi in the West. ...parents faced heartbreaking difficulties. They led them away, carrying one child on the back, one child under the arm and dragging along a third child. After a week, the families reach the Tama Kosi. There, a child dies. Unable to say goodbye the proper way, the devastated parents throw the body into the river (Robertson, 2020).

These stories support the second argument i.e., forced migration, on the Newars' out-migration.

Out-migration as artisans and government employees is the third reason. Although the Newars prefer trade, their "society was known for literate elite, successful businessmen, talented artists and skilled agriculturalist" (Lewis & Shakya, 1988, p. 29). Bista (2030 B.S.) states that the Newars' out-migration was for trade and not for holding land and farming. As good artists, some Newars migrated to different parts of Nepal and Tibet. Some Newars migrated as state employees to supervise the government on mining, minting, weaving, and other types of production (Lewis & Shakya, 1988).

Finally, Kinship is a major cause of their out-migration. Second and third-generation Newars were pulled by their kin connections. In addition to these, local disputes among the Newars and economic obligations forced them to leave their homeland and look for alternatives.

The outmigration of the Newars from the Valley is the major cause of change in their identity. The Newars who permanently settled in Khumbu became Newar Sherpa (Fuerer-Haimendorf, 1964) but who traded with Tibet followed Tibetan Buddhists in Tibet and Hindu Buddhists in Nepal because of getting married in both Tibet and Nepal (Gellner, 2012).

Now, the Newars from the hills and terai are in the process of remigration inside the Valley. However, the reasons for their re-migration are not similar to the Newars' out-migration. The present migration is mostly labor migration from the rural to the urban and from the hills to the Valley and the terai. The following section of this paper highlights on the causes of remigration inside the Valley and their integration process through social and cultural institutions such a *guthi* or *samaj*.

Remigration

This section of the paper deals with the representative causes of the Newars' remigration and the social, cultural, and economic crisis they faced in the Valley. I argue that such a crisis compelled them to reunite and reintegrate in the Valley. As a result, they established social, cultural, and economic institutions. These institutions have played a vital role in their integration and maintaining their identity.

The cause of migration in Nepal is almost common for all caste and ethnic groups. Limited opportunities such as lack of good education, health services, and employment opportunities, and so on are common push factors of migration in Nepal. Similarly, Kathmandu Valley not only applies political power but also access to the economy, education, health, social security, and development infrastructure. These aspects work as a pull factor for the people who in-migrate to the Valley. The re-migrated Newars also experience similar causes of migration. Generally, trade, education, kin connection, and employment opportunities are the factors to promote the Newars to re-migrate to their ancestral land. While asking for causes of the re-migration, a 40-year male replies:

I am from Solukhumbu district. I arrived in Kathmandu 25 years ago to read in grade 11. I completed my Master's Degree. I worked at a private school long time as a teacher. Later, I established my own private school 13 years ago. I had no idea of living in the Kathmandu Valley permanently but due to the lack of opportunities at my village (Solukhumbu) I had no more options. So, I settled here permanently. Now, I built a house in Gokarneswor -8, Kathmandu (Mr. Shrestha, personal communication, August 15, 2020).

The case illustrates the re-migration of the Newars for education. Some of the other re-migrated Newars also have the same story. They did not re-migrate at the Kathmandu Valley because it is the land of their ancestor but because of the basic survival and for seeking a better education.

Trade is another cause of the Newars' re-migration inside the Valley. Newars and the *byapar* (trade) are almost synonymous. It is very hard to find the *bazaar* without the Newars. The traders who earned much in their village dream to run a big business in the Valley. Some Newars just run small tea shops and other established factories and industries in the Valley. A 61-year male, who runs a factory in Gokarneswor shares his story of remigration inside the Kathmandu Valley. He tells:

Forty years ago, I was a government employee in Salleri –Solukhumbu. I had operated a lodge along with my job. My family members had run that business. We earned some amount of money from that business. So, we planned to move to Kathmandu for conducting other business. We re-migrated inside the Valley 37 years ago. Earlier, I started a small tea shop in Kathmandu and then this factory (Mr. Shrestha, Personal communication, August 25, 2020).

There are few cases of such migration from Khotang district but the number of labor migration is comparatively higher than other forms of migration. The re-migrated Newars work in various sectors of tourism such as trekking, mountaineering, and travel company, and so on. Some of them own trekking and travel company. Some others are school

teachers, engineers, lecturers in university, researchers, and so on. Interestingly, there is few case of daily wage laborers among the re-migrated Newars in the Valley.

Kinship has a prominent role in Nepali society and culture. Many spheres of society such as politics, administration, and economy are heavily influenced by *afno manchhe* (nepotism) and *cakari (chakari)* system in Nepal (Bista, 1991). Our society is different than the Western one because parents depend upon the children in their old age in contrast to enjoying at Old Care Home. We need our kin connection for social and cultural performances. Hence, we are connected through kin-based migration too.

Obviously, some of the Newars re-migrated to follow their children in the Valley. It shows that migration is caused by kin connections too. A migration through kinship relation is stated as 'strong' ties by Mark Granovetter (Childs & Choedup, 2019). The causes of first-generation re-migration inside the Kathmandu Valley may be different than the migrations of onwards generations but a kin connection has played a major role in their re-migration. Mr. Rajbhandari, 70 years old ex-high school teacher, who migrated from Khotang to Gokarneswor tells:

I was a high school teacher. I was in a socially respected position in my village. I moved to Kathmandu after my retirement from the school because my son, daughters, and in-laws are in Gokarneswor. I followed them because we need our children with us in our old age. There was no one to look after me in the village (Mr. Rajbhandari, Personal communication, September 5, 2020).

Kin-based migration is not new in Nepal and not only occurs among the Newars but also prevalent in almost all places in Nepal with people of all caste and ethnicity.

These facts and figures show the main causes of the Newars' re-migration in the Kathmandu Valley. Their re-migration inside the Valley has no connections with their ancestral land and their ancestors. They may be emotionally attached to their ancestral land in the Valley but the current reasons for their migration is not because of their ethnicity but because of pull and push factors that affect the people in general including the Newars.

Remigration and birth of *guthi* or *samaj*

Whatever the reasons for their re-migration, the coming sections of this paper will deal with the consequences of their re-migration and their social and cultural re-integration through different social and cultural organizations.

Guthi has a significant role in Newar society which binds each member together (Nepali, 1965). The hills Newar is not an exception. The *guthi* or *samaj* is prevalent in each Newar and non-Newar communities in Solukhumbu (Shrestha, 2018) that functions to fulfill their socio-cultural and economic needs (Shrestha, 2020). The re-migrated Newars practiced the

guthi or *samaj* system in the hills and the birth of *guthi* or *samaj* is just a continuation of their practices.

With a long breath, Mr. Shrestha tells, “I lost my small son in 2041 B.S. I had hard days because there was nobody to support me for his funeral, no relatives, no *samaj* or *guthi*. I don’t want to remember those days”. (Mr. Shrestha, Personal communication, September 5, 2020). “Fifteen years ago my brother committed suicide in the Valley. We had no *guthi* or *samaj*. I faced multiple problems although my relatives and friends helped us. I got the help because there were many re-migrants’ Newars and Chhetri in the Valley.” (Mr. K. Shrestha, Personal Communication, August 29, 2020).

These are the representative cases of the hard days of re-migrants and the problems they faced in the new destinations. A human being as a social and cultural being requires society and people to share their sorrow and happiness. That’s why the re-migrated Newars established separate *guthi* or *samaj* in the Valley. Now, I move to describe the different *guthi* or *samaj* and how the re-migrated Newars integrate and reintegrate through such institutions.

1. Khotang Jilla Aiselukharka Newar Samaj

Khotang Jilla Aiselukharka Newar *Samaj* was formed to solve the social and cultural issues of the re-migrated Newars from Aiselukharka (a small bazaar on the hills). The Newar *Samaj* consists of 83 households residing in the different places of Kathmandu Valley. The *samaj* works on a need basis for each of the member households to facilitate social and cultural issues. The general assembly elects the executive committee for the fixed tenure. The executive committee is solely responsible for handling the issues, rituals, and funeral procession in consultation with the victim’s family. The *samaj* has written rules and regulations which are to be strictly followed by member households. For example, each member household should attend funeral procession and go to look after the deceased family by turn. The executive committee publishes the written routine to look after the deceased family.

The main objective of the *samaj* is to provide social, cultural, and economic support to the deceased family. Hence, the *samaj* collects Rs. 1000 from each member household and provides to the deceased family. In addition to this, each member household should collect another one thousand rupees annually as a membership renewal charge. This is the gross income of the *samaj*. The executive committee can spend that amount for the betterment of the *samaj* and run it properly.

However, there is no obligation to invite and attend the member households in marriage or other rituals and performances. If invited, the member households may decide about the gift and other supports. The *samaj* has no decisive role as it is in the death rituals.

2. Newar *Samaj Guthi* Solukhumbu

Newar *Samaj guthi* Solukhumbu has 60 households (4 non-Newar households) members residing in different places of the Kathmandu Valley. The structure and function of the *samaj* is almost same as it is in the *samaj* of Khotang. The Newar *samaj* collects Rs. 600 from each member household to assist the death victim's family but they collect Rs. 1200 annually to run the *samaj* effectively.

3. Solu Kathmandu *Milan Samaj*

Solu-Kathmandu *Milan Samaj* is another institution for uniting and solving the socio-cultural, economic problems of the re-migrated Newars and non-Newars from Solukhumbu district. The *Milan Samaj* consists of 48 (11 Newars and other non-Newars) household members. The structure and function of the *Samaj* are comparatively similar to the other two *samaj* discussed earlier. But a difference is in collecting and submitting money to the dead victim's families. Solu-Kathmandu *Milan Samaj* collects Rs. 2000 annually to run the *samaj* and collects Rs. 1000 from each member household for providing to the deceased families when the death occurs. In addition to this, the deceased family gets Rs. 10000 from the *samaj* to conduct the funeral procession.

In addition to these social and cultural institutions, the re-migrated Newars from Khotang and Solukhumbu have established separate cooperatives to deal with financial activities. Hence, the Newars united together socially, culturally, psychologically and economically through such *guthi* or *samaj*.

Discussions

The facts and figures on remigration reveal the factors affecting remigration in the Kathmandu Valley. The causes of remigration vary individually but both pull and push factors of migration are responsible for the Newars remigration in the Valley. Obviously, Kathmandu is their ancestral land. Their ancestors out-migrated from the Valley due to various reasons in different periods of time. The most common reasons were trade, forced migration, and kin connections. But the causes of remigration are also somehow similar to the out-migration of their ancestors, except the forced migration. I argue that the remigration of the Newars is not because of loyalty and respect to their ancestral land but because of searching for better opportunities and easy lifestyles.

Anthropologists/ sociologists argue differently on the nature of social solidarity. Durkheim's (1964, first published in 1893) writing is a classic milestone for social solidarity in the society. Focusing on the 'collective conscience' he used two different terms mechanical and organic solidarity to describe how society people get integrated in primitive and modern societies. Radcliffe Brown (1935) emphasizes on structural

arrangements of individuals in the society based on kinship and Malinowski (1939) focused on the functions of culture as satisfying individuals' bio-psychological needs.

It is a compulsion to establish *guthi* or *samaj* for the re-migrated Newars to conduct rituals and ceremonies. The establishment of *guthi* or *samaj* not only supported to fulfill their immediate socio-cultural and economic needs but also contributed to their solidarity. Social and cultural solidarity make them easy to conduct their rituals, rites, and ceremonies. Such solidarity has psychological effects too. The household members feel secured while interacting with the people to their next door. In some of the cases, the household members take rituals, festivals celebration and other functions as an opportunity to demonstrate how united the re-migrated Newars and non-Newars are. But actually, being a member of such *guthi* or *samaj* is their need for adapting to the newly migrated destinations.

The re-migrated Newars experienced the hardest situation until they were able to establish *guthi* or *samaj*. Hence, *guthi* or *samaj* is a by-product of their low socio-economic status and inability to perform rituals especially death rituals in the Kathmandu Valley. In a sense, *guthi* or *samaj* is mainly established to conduct funeral rites easily and also to perform other rituals associated with death, which is essential and compulsory for each household member.

Guthi or *samaj* are identity bench-marks of the re-migrated Newars. This argument can be proven by the names of their *guthi* or *samaj* they established in the Valley. Each *guthi* or *samaj* either prefix or suffix the names of the land they came from. For example, Khotang Aiselukharka Newar *samaj*, Newar *samaj guthi* Solukhumbu or Solu Kathmandu *milan samaj* have added the names of their places of origin. It means the re-migrated Newars want their separate identity in Kathmandu Valley. They identify themselves by the origin of the hills. This is because the rituals, rites, customs, and traditions of the hills' Newars are different than the Newars of Kathmandu Valley. The hills' Newars are acculturated with Hindu Brahmin and Chhetri. Most of the Newars in the hills lost their mother tongue (Shrestha, 2011). Losing their mother tongue is the most striking act that sometimes humiliates the hills' Newars in front of the Newars in the Valley because some Newars in the Valley laughs or make jokes to the hills' Newar for their inability to speak Nepal *bhasa*. This is the reason that the re-migrated Newars have kept themselves in different baskets without assimilating to the Newars of Kathmandu Valley. And also prefer to manage their affinal kinship with the Newars of the hills rather than the Newars of the Kathmandu Valley.

Surprisingly, two *guthi* or *samaj* named after Solukhumbu has non-Newar members. It is questionable, why didn't they unite in a single *guthi* or *samaj* and instead of integrating with non-Newars? Settlement pattern or caste and ethnic composition of their past land may determine their membership in the *guthi* or *samaj*. For example, the Newars of Newar *samaj* Solukhumbu lived in the district headquarter Salleri of Solukhumbu with a larger

number of the Newar households. As a result, there are only four non-Newar members in their *guthi* whereas Solu-Kathmandu *milan samaj* consists of only twelve Newar households and the rest of the others are non-Newars. These Newars were from a village in Solukhumbu with a majority of Chhetri.

In contrast to *guthi* or *samaj* named after Solukhumbu, Khotang Aiselukharka Newar *samaj* has no non-Newar members. It is because the majority of the Newar population is at their place of origin and in the Valley too.

The settlement pattern, the history, size, and structure of the population along with other factors determine their membership on the *guthi* or *samaj* in the Valley. Hence, identity itself is the reflection of the land, history, and culture in the past.

The *guthi*, *samaj*, and social solidarity in the future

The *guthi* or the *Samaj* is the by-product of re-migrated Newars with their stories of sorrow. They established *guthi* or *samaj* at the time when the re-migrated Newars were economically weak and struggling for adaptation in the Kathmandu Valley. But today, many things have been changing day by day. The household members are economically independent and well-adjusted in their locality. Some household members have been associated with multiple *guthi* or *samaj*. They are the members of inter-caste and inter-regional *guthi* or *samaj* associating with their new locality in Kathmandu. Probably, economic well-being and inter-caste/ inter-regional unity may make the Newars' *guthi* or *samaj* weak.

Identity politics may weaken or supports to divide the *guthi*. For example, some *guthi* were formed with the representation of their hills' land. Such *guthi* or *samaj* has formed by the memberships of different caste and ethnic groups. By the time, when the household population of the same caste and ethnic people gets exceeded, either they may decide to split the *guthi* and form the separate one or create social and cultural conflict. Such a conflict and contradiction leads to the split of *guthi* or *samaj* in the future.

The *guthi* or *samaj* may also be weak or split due to the passive interaction and participation of the new generation in different activities. Hence, it is essential to make their active participation and submit certain roles and responsibilities to the younger generation.

Conclusion

Migration is one of the major factors for bringing multiple problems and issues among the migrants in the new destinations. It is really hard to adjust to the new socio-cultural, economic, and environment. The migrants face psychological issues such as 'insiders' and 'outsiders' (Shrestha, 2018) in the new destinations. The social, cultural, economic crisis gives birth to social and cultural institutions such as *guthi* or *samaj*.

Functionalists believe that each social and cultural institution has certain functions that address and satisfies the needs of the individual in the society (Warms & McGee, 2004). The *guthi* or *samaj* of the re-migrated Newars functions to conduct the rituals and rites, mostly the death rituals. This is a socio-cultural integration but supplementary to economic needs that each household faces during the death rituals.

The presence of multiple *guthi* or *samaj* proves that people solve their crisis and problems through the *samaj* or *guthi* without compromise in their identity. The caste and ethnic-based identity is not the end for the re-migrated Newars as it is in the Newars of Kathmandu Valley. The territory-based identity is supported to include the non-Newar households in the *guthi* or *samaj*. This also distinguishes the hills Newars from the Newars of the Kathmandu Valley. Finally, the economic prosperity of each household member and little interaction with the second generation may minimize the importance of *guthi* or *samaj*. As a result, it may split or remains inactive in the future.

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Received: July 2021 Received in revised form: September 2021 Accepted: November 2021

Economic Status of Women Working in Handicraft Industry

- Mrs. Munu Sharma¹

Abstract

The labors are the backbone of the industry. The study revealed that the majority of the handicraft working women in Patan industrial area, Lalitpur district. The women labors in Handicraft industry, had lack of knowledge, training, education and skill for prestigious job. They are far away from the knowledge of economic rights, human rights (women rights), equal rights and other rights of labors. Some of them were even harassed and abused. Primary as well as secondary data was used in order to explore the status of handicraft working women labors Out of 112 different industries only 8 handicraft industries are selected. Sample size of total 40 women are selected from 8 industries. Therefore total number of sampled workers is 40. There were no special changing rooms or facilities for women workers. Most of the women labors are not satisfied from their jobs and they work for more than 12 hours per day. The workers had no consciousness about labor law but owners had all the ideas to exploit in different aspects. Although there are lots of difficulties for the female workers in patan industrial estate, handicraft working women are still happy and hopeful that their children will go to school and do a better job in future. They spent some hardly saved money for entertainment, buying new clothes and feasting some days. They faced lots of problem in their day to day life for living. They are struggling for uplifting their social and economic status.

Keywords: Socio Economic Status, Handicraft, Labour law, women rights, women empowerment, Literacy.

1. Introduction

In comparison to men, Nepal's population is make up about its half by woman. The economic contribution of woman was substantial, but largely unnoticed because their traditional role was taken for granted. When employed, their wages are very less than paid in comparison to men. In

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most rural areas their employment outside the household generally was limited to planting, weeding and harvesting. In urban areas, they were employed in domestic and traditional jobs, as well as government sector, mostly, mostly in low level position. For this, it is being prioritized on addressing the social economic condition of the women workers.

At the level of the national government there is lack of explicit policy and program formulation and reduce gender disparities; at the community level, social and religious norms and taboos continue to prevail and constrain the activities of women; and at the household level there is often and over discrimination against women. The consequence is the status of women in Nepal continuous to be low. They are disadvantaged in many ways: as poor people they live under the same harsh condition as their male counterparts, as woman they suffer from social, cultural and political bias, and as head of household they have to carry out full traditional roles with the added responsibility of household and production management. In contrast men have benefited from expanded educational and employment opportunities, so that women's relative status has probably been declining (Ghimire, 2010).

Nepal's main economy is overwhelmingly subsistence agriculture and because women predominate in this sector, their total contribution to the household income remains as 50 percent as compare to 44 percent for male and 6 percent for children between the ages of 10 to 4. More and more Nepalese women are entering into the job market today because of their educational qualification, economic necessity to run household and by the policy of government to include women. If one looks into the occupation distribution of families from 2001 to 2011 census, one would find in considerable increase in the proportion of women employed in service, profession and technical and sales service i.e. 10 percent in 2001 and 20 percent in 2011 (CBS, 2012).

Handicraft is the occupation of making by hands usable products graces with visual appeal. Handicraft include such activities as needle work, lace-making, weaving, printed textile decoration, basketry , pottery, ornamental, metal working, jewelry, leather working and wood working and the making of stain glass that requires complex facilities (Maharjan, 2019).

In the world even though women are the major fonder of the society, yet women have not achieved quality with men. Of the world's 1.3 billion poor people, it is estimated that nearly 70 percent are women. Between 75 percent and 80 percent of the world's 27 million refugees are women. There are many countries where women are second class citizens. No matter how talented they are, they

never get a chance to develop. A lot of countries are there where women are treated as subordinate and second class citizen, though the equal rights are preserved in the constitution (UN, 1999).

The political participation of women in the world seems relatively low and it is duly because of the existence of patriarchal mindset even in the political parties in almost all countries in the world no matter how advanced and socially, economically, culturally and politically sound the countries are. The participation of women in parliament in Japan and USA is only 7.1 percent and 17 percent respectively. While in the countries like Rwanda it's 49 percent and in Sweden it's 46 percent. The status of women in developed countries is also lower in all sectors. Leaving some expectation of European, American and Asian countries, women in the world are socially, economically, culturally and politically dominated and they are excluded from the opportunities. Throughout the world, women face violence every day. From the battlefield to the bedroom, women are at risk from violence in all area of life. Violence against women persists because of society canopy. Virtually every culture in the world contains forms of violence against women that are often invisible because they are seen as normal or acceptable. The underlying cause of violence against women lies in gender discrimination- the denial of women's equality with in all areas of life (Acharya, 1994).

Nepal, a Himalayan country situates in South Asia is one of the poor countries in the world. Major reason behind this is the political instability and undemocratic rule for long. Other crucial factors for being the country very poor due to lack of awareness and access to quality education. As a result people have superstitious belief, there is gender discrimination. And political leaders have decreased political vision. The socio-economic status of women is very poor in Nepal. The women are being discriminated in every aspect of society. These and so many other factors have contributed to turn Nepal a lower human development state (Karki, 2010).

The term 'handicraft encompasses a wide range of artifacts. The informal sector, which includes handicraft, has been described by International Labour Organization (ILO, 2016) as a part of economic activity characterized by certain features like reliance on local available resources and skills, family ownership, small scale operation, and labor intensity. Handicraft was first introduced in Nepal with the financial and technical support of UNICEF with the objective to meet marketing requirement of handicraft producers who are mainly women and operating on a very small scale, usually from their home. There are many kinds of handicraft production in Nepal, some of them

are Nepali paper, Rice paper, Bamboo Crafts, Dhaka clothes, Paper envelope, hand bag, moneybag, water bottle cover and many more.

1.1 General Introduction of the Study Area

Patan Industrial Estate was selected for the study because it was established. to promote art, culture, status of artists, small cottage industries (especially handicraft industries). Most of the handicraft industries of Patan are centralized in this area. There are 112 industries altogether and total 1247 workers work in them. 37 of the industries are handicrafts industries (PIEMO, 2066). Women workers from different places are involved in those industries. It exports large amount of handicrafts Product.

2. Objectives

The general objective of this study is to find out the economic condition of the women workers of the handicraft industries and specific objective is to figure out the economic status of women workers and to find out the problem of those in handicraft industries of Patan Industrial Estate.

3. Methodology

This article is prepared by using primary data, interview, field visit, observation and secondary data were taken from previous studies, published books and other related literature.

4. Sampling procedure

The collections of data and information are based on purposive sampling method. According to the latest data of Patan Industrial Estate management office there are 112 industries. Out of 112 different industries only 8 handicraft industries are selected for collecting data because of large number of industries. Also it was impossible to involve all the industries to collect data due to limited time, data and resources. So due to these kind of limitation only sample size of total 40 women 5 from each are selected from 8 industries. Therefore total number of sampled workers are 40.

5. Discussion and Analysis of the study

5.1 Demographic Background of the Respondents

Nepal has been experiencing very rapid demographic changes in the last few decades as a result of transition from a high-mortality, high-fertility society to a low mortality, low-fertility society

within a relatively short span of time. This transition in itself is an extremely positive outcome of the country's development and something to be really celebrated an alternative scenario would have been that of a classical "population explosion," i.e. uncontrolled population growth with a persistently high prevalence of poverty and underdevelopment. At the same time, as in the life of an individual human being, achievements in one stage of a country's development often bring new challenges in the next. Looking at Nepal's development in this perspective, there are two major challenges that the country needs to be quickly prepared for: (1) rapid progress of the "ageing" of the society; (2) the duration of the "demographic window of opportunity" period, which is not particularly long compared with other countries that have more advanced economies. This study provides various analyses of these challenges and examines their implications for the country's macro development policies. At the same time, it does set clear and strong parameters within which countries need to make conscious decisions and take actions in a time-bound manner to make the best of the given situation in one demographic stage and be prepared for opportunities and challenges in the next. Based on the above-mentioned analyses, it is right, justifiable, and necessary to consider the investment in children as an act of "paying forward" to the generations that will support us in our old age and continue to develop our society in the future just as the concept and practice of old-age benefit has been well accepted by now as a legitimate act of "paying afterward" to those people who have worked hard and supported us in our young age. The result of the analyses in this study shows that this perspective is very much required for the macro development discourse in Nepal today.

5.1.1 Age Group of the Respondents

Age is one of the factors, which affects the economic status of women and they have different working capacity as different age group. So respondents were asked about their age during the process of collecting the primary data numbers of women with varying found in the handicraft industries. The following table shows variety of age group of the female workers of handicraft industries.

Table No.1 Distribution of the respondents by age group

Age(in yrs)	Number	Percentage
15-19	2	5.00
20-24	9	22.50
25-29	10	25.0
30-34	2	5.00
35-39	5	12.50
40-44	5	12.50
45-59	4	10.00
Above 60	3	7.50
Total	40	100.00

Source: Field Survey 2020

From the above table, highest percent of interviewed females (25.00 percent belong to the age 25 to 39 years. The second highest percent of interview females belong to the age group 20 to 24 years (22.50 percent). This data shows that the young and productive age group is highly involved in handicraft business. The women workers above sixty age does helper job like sweeping and cleaning job rather than core handicraft jobs.

5.1.2 Caste/Ethnic Group of the Respondents

Nepal is multi-cultural, multiracial country. It is heterogeneous in its ethnic composition. In the order to identify the social status of female workers, castes of respondents were also surveyed. Following table shows the caste distribution of 40 female workers of handicrafts industries.

Table No.2 Distribution of the respondents by Caste

Caste	Number	Percentage
Newar	16	40.00
Tamang	6	15.00
Chettri	5	12.50
Brahmin	4	10.00
Gurung	2	5.00
Tharu	2	5.00
Sherpa	2	5.00
Limbu	2	5.00
Dhimal	1	2.50
Total	40	100.00

Source: Field Survey 2020

The above collected data clearly shows that most of the workers are Newar. Handicraft is the traditional work of the Newar of the Patan city. Therefore comparing to other castes Newar are highly involved in this industry. According to above figure mostly Newar community women are economically upgrading their lifestyle through this handicraft industries. The sample of the study shows that the majority of the female workers were from ethnic group of the Nepalese society. The female of so called high caste society was also involved in handicraft industries. Newars are more involved in handicraft Industries. In addition, it indicates that worker of various castes and ethnic group have been working in the handicraft industrial sector of Nepal. Although it is a caste based society .A unique type of uniformity and harmony was observed among handicraft women population in the field which was remarkable.

5.1.3 Religion

Religion occupies an integral position in Nepalese life and society. Nepali people believe in various religious according to their ethnic group. The four major religion followed by Nepali people are Hindu, Buddhism, Christian and Muslim. The following table shows the religious Status of female workers.

Table No.3 Distribution of the respondents by Religion

Religion	Number	Percentage
Hindu	24	60.00
Christian	8	20.00
Buddhist	7	17.50
Muslim	1	1.25
Total	40	100.00

Source: Field Survey 2020

Most of the female workers were from Newar ethnic group. They are mostly from Hindu community. Hence the number of Hindu is maximum (60 percent) in handicraft business. Among other religion the study found that Christian and Buddhist religion following working women were more satisfied in their job than other religion. In Hindu religion following women workers they were found not very satisfied as well as secure in their job due to various reasons. As Nepal is patriarchal society where the economic role is played by men member, women are not taken as powerful and capable of earning money. Mostly Hindu religion following people were from patriarchal society and their husband don't want them to work outside their house. Their husband wants their wives to work inside their household works only and control and take care of their children.

5.1.4 Marital status

The researcher also surveyed about the marital status of respondents women with various marital status were engaged in handicraft industry. Married, unmarried widow and divorced women were found. The following table shows their marital status.

Table No.4 Distribution of the respondents by Marital Status

Marital Status	Number	Percentage
Married	25	62.50
Unmarried	11	27.50
Widow	3	7.50
Divorced	1	2.50
Total	40	100.00

Source: Field Survey 2020

Out of the total surveyed women, involvement of large number of married women (62.5 percent) were seen which is followed by unmarried women(27.5 percent) most of the married women were in the work to support their family economically. Beside that 7.5 percent widow and 2.5 percent divorced woman was also being employed in those industries. Among widow women it was found that one woman was replaced in her husbands place to upgrade her family after her husband's death. When we asked about the reason behind the divorce with the divorced woman the reason was domestic violence of drunkard husband.

5.1.5 Number of Children

Number of children is one of the factors which affects in women's socio and economic condition. Having large number of children creates the more responsibilities towards them and may disbalance their economic conditions. Our research found that women workers of handicraft industries have number of children as shown in the table below.

Table No.5 Distribution of the respondents by number of children

No. of Child	Number	Percentage
1	4	16.00
2	9	36.00
3	10	40.00
4	2	8.00
Total	25	100.00

Source: Field Survey 2020

Among 25 married Women workers, the highest percent (40 percent) of women have 3 children. Which is followed by 36 percent have 2 children, 16 percent have only 1 child and 8 percent have 4 children. Regarding taking care of children, 8 workers have children who study in school so they remain in school during office time. Rest 17 workers have small children who need care. They keep their small children in child care center during office time. Among 25 women it was found that two women who have four child have more economically weak condition because they were unable to provide basic facilities to their children because of more number of children.

5.1.6 Educational Status

Education is one of the basic activities of people in all human societies. It is a process of socialization. It makes man capable of judging himself, which always prevent him from harming others. It also provides self awareness so that one can judge right & wrong. It is very necessary to have knowledge that the best way to empower. Girls in lower income groups get little opportunity to go to school at all. Those who do go to school can hardly further their education beyond the secondary level. Another compelling factor hindering women's education in general is the fact that girls are transferred to their affiance household after marriage, with the results that parents have no claim on their work or income as adult women. Following table shows the educational status of 40 respondents .

Table No.6 Distribution of the respondents by educational status

Educational status	Number	Percentage
Literate	12	30.00
Illiterate	28	70.00
Total	40	100.00

Source: Field Survey 2020

The survey shows that out of 40 respondents more than half 70 percent are illiterate and only 30percent respondents were literate because they are from unprivileged societies. They were deprived of education due to the various factors since their childhood and also their parents cannot afford to send them to school.

5.1.7 Place of Origin

Female workers were from different parts of the district country. Most of them were from surrounding districts of the Lalitpur district. Some were from the same district (Lalitpur). Following table shows the place of origin of 40 respondents.

Table No.7 Distribution of the respondents by place of origin

Place of origin	Number	Percentage
Lalitpur	9	22.50
Sindhupalchok	5	12.50
Bhaktapur	4	10.00
Sarlahi	4	10.00
Biratnagar	2	5.00
Sunsari	2	5.00

Kavre	3	7.50
Kathmandu	4	10.00
Nuwakot	2	5.00
Sindhuli	1	2.50
Dhadhing	1	2.50
Manang	1	2.50
Total	40	100

Source: Field Survey 2020

Above table shows that women from various parts of Nepal are engaged in handicraft industry. Highest percent of women workers (22.50 percent) had origin of Lalitpur district. Most of the people have origin of Lalitpur district. Most of the people have origin in surrounding district of Lalitpur like Bhaktapur, Kathmandu and Sindhupalchowk.

5.1.8 Migration

Most of the respondents were migrated from the village to city for various reasons. Those respondents, whose place of origin are Lalitpur, Kathmandu & Bhaktapur district were not migrated. Children education, job problem in village, health facility were of seen as some of the common reason for migrating from village to city areas. Political situation also become the major cause of migration. The table given below shows the number of migrated and non migrated respondents.

Table No.8 Distribution of the respondents by migration

Migration	Number	Percentage
Migrated	23	57.50
Non-migrated	17	42.50
Total	40	100.00

Source: Field Survey 2020

The survey shows that out of 40 respondents more than half (57.50 percent) are migrated from other villages or cities and 42.50 percent respondents were not migrated because they are from surrounding place of industrial areas.

5.2 Division of work by sex in family

Though both women and men work to maintain household and communities. Their work tends to be different on nature and value. These differences are a central aspect of gender relation. Society has allocated different roles, responsibilities and activities to women and men according to what is considered to be appropriate. Due to this traditional division, women are compelled to concentrate more on their ascribed reproductive roles and responsibilities. The women who is engaged in income earning roles must have to perform her previous roles too.

In our survey, it is found that the women workers of handicraft industries have to perform the household work together with their handicraft work in the industries. Separating their working hours in the industries, the remaining time of morning and evening, they use for their household works like child care, cooking, cleaning utensils, washing clothes, dressing children, feeding children, daily marketing etc. Male's participation is very less in those activities. It clears that women's work load is much higher than that of men. This increased workload is the main cause of women not being able to engage in other development activities of the society.

5.3 Decision making power of women

In Nepal, as in most parts of, women commonly have less power and autonomy than men in making decisions about their own health care. Moreover, women often have unequal access to food, education, and health care, limited opportunities to earn incomes, restricted access to, and control over, productive resources, and very few effective legal rights.

Women's autonomy in decision making is associated with her ethnicity, deprivation level, urban/rural classification, education, and number of living children. Nepalese women are further disadvantaged by a lack of awareness of opportunities and their legal rights. Their low social status has been identified as a barrier towards national health and population policy progress in Nepal. Gender equity gives women both increased decision-making authority and more modern

reproductive outcomes such as to reduce the desire for more children, increase contraceptive use and lower the level of 'unmet need' for contraception .

For Nepalese women, independent decision-making is highly restricted. Lack of decision making power has deprived women of the basic elements of a decent life such as food and nutrition, education, skill development, health, and family planning. This has ultimately undermined their access to gainful employment opportunities and participation in professional jobs. Our survey reveals that women are seem to be very weak in decision making or it can be said that women have low decision making power. Women are hardly found as final decision maker in many matters.

Table No.9 Distribution of the respondents by decision making power

Decision making power	Number	Percentage
Yes	9	22.50
No	31	77.50
Total	40	100

Source: Field survey, 2020

According to the above table, out of 40 respondents (77.50 percent) of them have no decision making power in their family. Only (22.50 percent) of them have got that power in their family. It is found that the women who have got decision making power is family are very little more educated than other. Therefore education and access to educational oportunityes seems as an important factor influencing women's impact in decion making process.

5.4 Reasons for joining Industries

Our survey shows that because of various reasons the women were compelled to join the handicraft industry. Poverty, to support family, lack of alternatives was major reason of joining the industry.

Table No.10 Distribution of the respondents by reason for joining in industries

Reason	Number	Percentage
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Poverty	5	12.50
To support Family	15	37.50
Family Occupation	3	7.50
Self Standing	6	15.00
Lack of alternatives	11	27.50
Total	40	100.00

Source: Field Survey 2020

The above data of respondents clear that the majority (37.5 %) of population involvement in handcraft industry were for supporting family, followed by lack of alternatives (27.5%). It means that most of the women of these industries belong to poor family. So to support family economically they have no another options beside these industries.

5.5 working hours in a day

Women labors and their work are a central point of the handicraft industry .This study was based on the study of economic status of the women labor in Patan industrial area. The table below represents the duty hour composition of the respondents of the study. Working hour is unequal of many respondents. Infact the respondents worked in flexible time. Most of the women work for 6-8 hours a day. During working hour they take lunch break for half an hour. But some of them work for more than 8 hours. Handicraft women were busy all the time for taking care of their children and kitchen work .They revealed that they hardly get 5-6 hours per day to sleep. None of the workers are engaged in other jobs.

Table No. 11 Distribution of the respondents by working hours in a day

Working hours	Number	Percentage
4 to 6	7	17.50
6 to 8	28	70.00
8 to 10	5	12.50

Total	40	100.00
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Source: Field Survey 2020

The table shows that there is variation in working hours ranged from 4 to 10 hours of work per day. The highest percentage of the workers (70 percent) work for 6 to 8 hours a day, which is followed by 17.50 percent, works for 4 to 6 hours and 12.50 percent for 8 to 10 hours.

5.6 Satisfaction with remuneration

Job satisfaction is a complex concept. Satisfaction is an important factor for good production and improving the economic condition of weavers. Job satisfaction helps workers to create the opportunity. In the Industry some worker are satisfied with their job and income whereas some are unsatisfied. And for some women labor working in industry is not concern for satisfaction or dissatisfaction its their need to work for survival. According to some women labor, except doing the job they don't have any other option Women labor are not satisfied with their job and their earning. But still they are forced to work there for living. As they have no other option. For the women labors who have small baby are facing lots of problem in work. They said that their children are small that they cant leave them at home alone and if they bring their children with them in carpet industry they have to proper room to keep them. As Nepal is patriarchal society where the economic role is played by men member, women are not taken as powerful and capable of earning money. Economic and social issues are closely intertwined one reinforcing the other. The study inquired about the satisfaction level of workers.

Table No. 12 Distribution of the respondents by satisfaction with remuneration

Satisfaction with remuneration	Number	Percentage
Yes	12	30
No	28	70
Total	40	100.00

Source: Field Survey 2020

Out of 40 respondents (30 percent) were satisfied with remuneration provide to them by industry but (70 percent) were not satisfied with the remuneration. It clears that most of them are not satisfied with their remuneration they received as it does not fulfill their basic needs.

5.7 Mode of payment

In most of the sampled industries, method of payment of remuneration was monthly. Their number of working days is counted and according to their daily wage they are provided remuneration monthly. If they need they receive remuneration weekly, half monthly and whenever they need also. Our 40 respondents use different mode of payment which is shown in the table below.

Table No. 13 Distribution of the respondents by mode of payment

Mode of payment	Number	Percentage
Weekly	3	7.50
Half Monthly	4	10.00
Monthly	24	60.00
When needed	9	22.50
Total	40	100.00

Source: Field Survey 2020

Out of 40 respondents 24 respondents receive their remuneration monthly, 9 of them receive when they need, 4 of them received half monthly and 3 of them weekly. It was found that womens who take money when need only were found more economically in weak condition because that payment were not enough for their basic fulfilments.

5.8 Facilities

The basic root of every manufacturing companies is their workers. Maintaining good economical, mental managerial and physical support from the workers enables the management to get the better output from the factory. Workers work in the industry and they are provided remuneration in return. Beside normal essential facilities if the workers get some additional allowance and facilities then it make them more active to perform their job well. Acording to the respondents, they are not

provided above facilities. This study is based only on Patan industrial area especially on handicraft industry and there were two types of problem founded in health sectors. When the workers have health problem the owners economically help them, to solve the problem .But in complex case there are no any help for complex case from industries, administration and owners. There was no any medical facility given to the women labors .As they have to work in dust, wool and it affects in their health directly or indirectly but they have to use their money for treatment, industry don't take responsible of their health.

5.8.1 Childcare Centre

Most of the industrial area, there were no child care centre to care the child of workers in working periods. Their small kids were around there and the environment was not good for them. There were majority of female labor and they had child. The biggest problem of weaving mother was to maintain a balance time for the child and the work. Children were not enjoying their right and mother was deprived from the basic human right. Nepali Society is patriarchal society so male is superior. Male works outside the house but women has to do all the house hold work. If she is engaged in work of outside, then her responsibility becomes double. She has to do household works as well as outside work. There is need to child care facility inside the factory. It is found that the there is a child care centre inside Patan Industrial Estate and it is common for all the workers of all the industries of Patan Industrial Estate. All the industries have provided that facility to their women workers. Lack of care takers and lack of hygienic food are some weakness of that center. Most of the workers were compelled to keep their children in other child care centre which is out of that industrial estate. They have to pay for those themselves.

5.8.2 Shelter

Shelter is one of the basic needs o the human beings. Shelter inside the industrial area is very much essential for those people who were migrated from other villages. Some of the industries have provided shelter to their workers. Industry providing quarters were not in good condition .They was of small size and was dark. There was no proper ventilation system in order to get natural air. From the study area, it is clearly found that the physical condition regarding health of weavers, and their children was found very poor and unsuitable. Though the condition is improving little

from the past but still there are lots of improvement is needed for improvement of physical environment of the industry.

5.8.3 Bonus System and Insurance Policy

Bonus system in industrial sector is an important factor to empower the labor which helps to increase the high level of production and also improve living standard of workers. Bonus system helps them to satisfy the basic needs .from this study observation and survey, no bonus system was found out. The weavers and workers were frustrated by this Women were not given any bonus and insurance in industry. They had no any idea or knowledge about insurance .Women worker in Patan industrial area has very low salary and they are not getting bonus on any festival or occasion .There are no any insurance policy for worker in case of some accident or dead. Bonus system generally encourage people (worker / for doing hard job and for more time. But in this area there is no bonus system available for women .Women usually works for more than 8 hours but they don't get satisfied wage and in big festival like Dashain, they don't get any extra salary as bonus.

6. Conclusion

In Nepal women have just started to work outside. But in handicraft industries, they were involved since many years ago. Women from age 15 to above age 45 are actively participated in the handicraft industries of Patan Industrial Estate. But their economic condition is not very good. Their work load is much higher than that of men after involoving in the industries. They need to perform household works with their offiw works. Their decision maing power in family is low.They can contribute equally to the family only when they are properly educated. Major income source of this women is service. Lack of job and family problem were found as the major reason of migration. Most of the women workers are found to be accompanying their friends and relatives to join handicraft industries of Patan Industrial Estate. Majority of women workers work for 6 to 8 hours in a day. They get nothing for absence day. Most of them earn below five thousand rupees per month. So they were not satisfied with the remuneration. Very necessary facilities area not provided to the women workers by the industries like- drinking water proper toilet, shelter to all the workers in industrial area, medical allowance etc.

From the field survey, it is concluded that the labor forces of industrial sector had come from low economic status so they were poor and most of them were illiterate too, they had no ideas of knowledge about the labor laws and other constitutional system. They were just used for work and owners want to earn much money so they tried to exploit the workers by making them work for long hours by not giving them proper wages, by not giving sufficient money, not in time payment and harassment of women in work is the main cause of women exploitation, several; abuses etc. Involvement of Women workers in Dispute In Patan industrial area, all workers are involved in disputes. Trade union and others organization mobilized the labor including female labor for dispute. Labor was organized and gives the pressures for them to solve problems. As, it is industrial sector, found different types of disputes, strike, lockout. All workers don't agree on the decision and rule of company, so they do strike, dispute and female workers are also equally involved in disputes.

There was conflicting relationship between the owners and handicraft workers. Generally the major cause of conflict was for the system of industrial rules and regulation and the dominating nature of the owners. Female handicraft workers were far from marginalized. Most of the married female workers said that their husbands spend the earning of their on drinking alcohol. These workers were found to be abused in home, working place and in industry too. Female workers faced lots of biasness and stereotyped behaviors. Despite of all these difficulties and problem women weavers were hopeful that their earning makes their life little better. This research shows the dependency relation between owner and women worker. Women are depended on their owner. Owner exploit women labor and earn money and get profit. and collect the capital by exploiting the periphery. Owner are dependent on the labor for becoming successful to earn profit and collect the capital by exploiting the women labor whereas women labor are depended on owner for income and work. There is dependency relation between owner and women labor in Patan Industrial Area. Handicraft workers in Patan industries has become one part of Nepalese working class female community. Though there is difference in the condition of women according to the regions, castes, economic, religion and structure of the community. The women of lower castes have got involvement in industrial estate like handicraft working, as they have got more freedom but less chance of education and employment.

The art of handicraft is an old tradition in the kingdom of Nepal. The respondents were found not satisfied with their remuneration and working hours also. But the owners said they never complained and discussed about their dissatisfaction during the disbursement of their salary. This study has been examined the scope of women's participation in industrial sector equal to men. This study has been examined on how illiteracy and poor economic status of women family forced women to work in industrial estate as in carpet industry, pashmina making, woolen material making by putting their health in danger and by less paid wages. In order to study the women condition and challenges by facing different kind of harassment abuse, violence, women are force to work.

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Received: July 2021 Received in revised form: September 2021 Accepted: November 2021

Access to Education and Dropout among Married Women of Kirtipur Municipality

- Ram Raj Pokharel¹

Abstract

Education is the systematic instruction to gain knowledge. Education is one of the fundamental means for all for alleviating poverty and bringing improvement in the standard of living through different socio economic activities. Literacy enhances access to information that may be necessary to conduct various essential activities to daily life and work. This study aims on investigating the educational status of married women and drop out among the respondents, causes of illiteracy and trends of dropout of respondents in Kirtipur Municipality. The study has used the quantitative research with emphasis on exploratory and descriptive research design following the stratified sampling technique from nine different wards of the municipality. The study concludes that the educational access of married women in the study area is good.

Key words: educational access, dropout, married women, illiteracy and status.

1. Introduction

Education is the systematic instruction to gain knowledge. Education is one of the fundamental means for all for alleviating poverty and bringing improvement in the standard of living through different socio economic activities. Literacy enhances access to information that may be necessary to conduct various essential activities to daily life and work.

Quality education produces knowledgeable or qualified manpower which is the pillar of the nation for development. Without the progress of education it is difficult for the development of the nation.

Education develops the personality and rationality of individuals, qualifies them to fulfill certain economic, political and cultural functions and thereby improves their socio-economic status. It has been recognized as a major instrument which societies can use to direct the process of change and development towards desired goals. Education is the key for development.

The impetus given to education by Late Padma Shamsher J.B. Rana is the initiative of the villagers along the Indian border in establishing their own schools and the general freedom movement combined to provide tremendous force for the rapid expansion of education immediately after 1951. Many schools were opened quickly often without adequate planning, financing or facilities.

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Nearly all of them charged tuition and catered to the more favored socioeconomic classes (K.C, 2001)

To prevent complete chaos and provide some guidance for educational development several organizational steps were taken. These included creation of an educational ministry strengthening the educational directorate and appointment of seven school inspectors. A board of education was appointed and in 1954-55, a National Education Planning Commission mapped out a long range plan for the orderly development of education in Nepal. With the help of American Aid, primary schools were expanded, a teacher training program was established, adult literacy classes were opened and provision was made for the preparation and printing of text books. Colleges were established both in the Kathmandu valley and in the hinterlands. In 1962, a UNESCO team made a comprehensive survey of a decade of educational progress in Nepal and made recommendations for continued development, but with great emphasis on educational planning (K.C, 2001)

The description of education in Nepal today, which follows, includes the details of events after 1951 and thus they are not more fully developed here. At this point it is sufficient to note that 1951 marked the beginning of a new dynamic period in the development of education in Nepal, a period which is still continuing (Hugh, 1965).

Nepal has made significant progress in education at all levels during the past three decades. Currently 3.8 million students are attending primary school and 1.5 million students are attending the secondary schools (lower secondary and secondary together). Universal primary education i.e. enrollment of all 6-10 years old children in primary schools is the long term goal of the government. The education for All- Plan of Action has set the target of attaining universal primary education by 2015 AD (Manandhar & Shrestha, 2003).

Secondary education has also expanded rapidly, as a result of efforts of the government to provide success to secondary education and also due to increased public demand for this level of education. Higher secondary education has emerged as an alternative to Proficiency Certificate Level education provided in the campus of Tribhuvan University. There is now a country wide network of higher secondary schools. All of which are functioning under private management. The Proficiency Certificate Level program is proposed to be phased out with the expansion of the higher secondary schools. Literacy rate has gone up steadily reaching 54.1 percent for population of 6 years and above. Expansion of primary education and execution of various non-formal education programs have contributed towards this increase (Manandhar & Shrestha, 2003)

The Education Regulations 2059 (2002 AD) based on the seventh Amendment of the Education Act, 2028 allows the public schools to charge tuition and other fees on the students. The government is committed to free primary education. The tuition can now be charged in the Public Secondary Schools. Several new features such as Teacher Licensing System, setting up of village Education Committees, formation of school management committees with major representation of parents, have also been included in the revised regulations. Further, the new terminologies have

been used to describe the types of schools. The present government aided schools are called community schools and the private schools are described as institutional schools (Manandhar & Shrestha, 2003).

Women in developing world especially rural women have typically fewer skills to offer in the labor market. Their options for gainful satisfying employment are few; their potential for contributing to the society is limited largely to the domestic sphere. And that contribution is further constrained by ignorance and lack of skills related to health, nutrition and hygiene (Bhatt & Sharma, 1992).

The disproportionate investment in male education is often justified by the differing roles assigned to men and women. Men take responsibility for supporting the family while women contribute domestic labor. The reality however, is that fewer and fewer women in the developing world have the luxury of depending entirely on male support. The data and case studies compiled in the course of this project show very clearly that large numbers of women and not just widows and divorces are actively engaged in the work force not by choice but because they need to work to survive and support their families (King & Bellew, 1993)

Women in Nepal are generally less educated than men with a median of less than one year of schooling compared with 1.4 years among males. This gap in gender has not narrowed in recent years. The net attendance ratio which indicates participation in primary schooling among those age 6-10 years and secondary schooling among those ages 11-15 years shows as 13 percent point difference at primary school level and 8 percent point difference at the secondary level (King & Bellew, 1993)

Men are twice as likely to be literate as women (70% and 35% respectively). As expected, literacy is as much lower among rural women and men as those living in the urban areas. A higher proportion of women 43 percent and men 79 percent living in the hill ecological zone are literate compared with those in the mountain and terai zones. Women living in the western development region and men living in the western and mid-western region are more likely to be literate than those living in the other development regions. The percentage of literate women is highest in the western hill sub region (62%), while literacy is highest among men residing in the mid-western hill sub region (87%) (Manandhar & Shrestha, 2003).

Nepal has an active literacy program consequently the 2001 NDHS added a question to ascertain the proportion of women and men who have attended a literacy program. Women are much more likely to have participated in a literacy program than men, with 19 percent of women and 5 percent of men having done so.

Men are more educated than women. Nearly three in four women and two in five men have never attended school. 15 percent of women and 30 percent of men have some primary education only, while 9 percent of women and 20 percent of men have some secondary education and 4 percent of women and 13 percent of men have completed their school leaving certificate (SLC). Among both

women and men, the percentage with no education is lowest in the hill ecological zone and almost of same in the terai and mountain zones. More than one third of male residing in the central region (36%) reported having no education. Among females the highest percentage reporting no education in the far western region (67%) followed closely by the central region (65%) and the mid- western region (64%) (Manandhar & Shrestha, 2003)

The gender gap in the level of education even among the sub region, although among males, the percentage that have never been to school is less than 45 percent in all sub regions, among females the percentage who have never been to school exceeds 50 percent in most of the sub regions and exceeds 75 percent in two of the thirteen sub regions (western, mountain and central terai region) (NDHS, 2001).

2. Objectives

This paper aims to explore educational access among the married women of Kirtipur. And this study also attempts to find out the causes of illiteracy and trends of dropout among the respondents in the study area.

3. Methodology

Kirtipur Municipality is the study area. The total population is 29360, the numbers of households is 1577 and the total female population of the study area is 15130 and male population is 14230 (Kirtipur, 2015). Multi stage sampling method has been used in the study. For the selection of wards, out of 10 wards only 3, 6 and 9 wards have been selected on the basis of purposive sampling method. And the total population compositions (both male and female) of the selected wards is 29360 and among them 138 married women have been selected as a sample by the purposive sampling method (that may consist of household head or other).

This study is based on descriptive as well as explorative research design. This study is descriptive as it attempts to provide proper knowledge about the socio-economic characteristics in the study area. At the same time this study is explorative as well because it attempts to explore causes of illiteracy and trends of dropout and its causes of respondents of the study area.

4. Discussion and Analysis of the study

4.1. Socio-economic and educational characteristics

4.1.1 Age of the respondents

The age distribution of respondent is classified in 5 years age group. The information has been collected from the married female above the age 20. Out of them different 7 groups are presented here in table 4.1

Table 4.1: Distribution of Respondent by Five Years Age Group

Age Group	Frequency	Percent
20-24	11	8.00
25-29	4	17.50
30-34	31	22.50
35-39	30	21.70
40-44	18	13.00
45-49	6	4.30
50+	18	13.00
Total	138	100

Source: Field Survey, 2021

Table 4.1 shows that all the respondent are above the age 20 and out of them majority of respondent are in age group 30-34. Out of 138 respondents, 22.50 percent age in this age group followed by 21.70 percent in 35-39 and 17.50 percent in 25-29 age groups respectively. In short, we can say majority of respondents are of the age of 25-39.

4.1.2 Respondents by Caste and Ethnicity

In this study different major 5 caste and ethnic groups namely Newar, Brahmin, Chhetri, Thapa-Magar and Sunuwar are recorded separately and others insignificant number of castes and ethnics are comprised under other category. The detail figure of caste/ethnic distribution of respondents is presented in the table 4.2.

Table 4.2: Distribution of Respondents by Caste/Ethnicity

Caste/Ethnicity	Frequency	Percent
Newar	57	41.30
Brahmin	3	2.20
Chhetri	31	22.50
Thapa-Magar	21	15.20
Sunuwar	13	9.40

Others	13	9.40
Total	138	100

Source: Field Survey, 2021

From the table 4.2 it can be seen that majority of respondents are from Newar that holds 41.30 percent followed by Chhetri 22.50 percent, Thapa-Magar/Rana Magar 15.20 percent and 9.20 percent Sunuwar. Similarly insignificant proportion of Brahmin found which holds only 2.20 percent. Finally 9.40 percent holds by other that includes-Tamang, Gurung and Lama. The population of study area has high dense of Newar.

4.1.3 Marital Status of the Respondents

Marriage is a universal demographic component. In this study, respondents' marital status is categorized mainly in two different categories; namely married and widow. The marital status of respondent is presented in table 4.3.

Table 4.3: Distribution of Respondents by Marital Status

Marital Status	Frequency	Percent
Married	134	97.10
Widow	4	2.90
Total	138	100

Source: Field Survey, 2021

Table 4.3 reveals that almost all 97.10 percent respondents are married and 2.90 percent are widowed.

4.1.4 Respondents by Household Facility

Table 4.4: Distribution of Respondents by Available Facilities at Home

Facilities	Yes		No		Total	
	N	Percent	N	Percent	N	Percent
Electricity	132	95.65	6	4.35	138	100
Radio	113	81.88	25	18.12	138	100
Television	119	86.23	19	13.77	138	100

Telephone	33	23.91	105	76.09	138	100
Toilet	101	73.19	37	26.81	138	100
Drinking Water	28	20.29	110	79.71	138	100

Source: Field Survey, 2021

From table 4.4, it is seen that nearly 96 percent of respondents have electricity at their household and more than 80 percent have radio. Similarly, more than 86 percent respondents have television at their home where as only 24 percent have telephone facility. It is miserable to say that even being an area under capital city (Kathmandu District) 4.35 percent respondents have no electricity facility. Similarly another important thing is 76.09 percent respondents have no telephone facility at their home.

4.2 Causes of illiteracy

4.2.1 Literacy Status of Respondents

The main objective of this study is to find out the educational status of female among Kirtipur Municipality, hence primarily to know the educational status. The literacy status of the respondent is collected as literate or illiterate. The literacy status of sampled 138 respondents is presented in table 4.5.

Table 4.5: Distribution of Respondents by Literacy Status

Literacy Status	Frequency	Percent
Literate	83	60.10
Illiterate	55	39.90
Total	138	100

Source: Field Survey, 2021

From table 4.5, it is shown that out of total 138 respondents 60.10 percent are literate and 39.90 percent are illiterate. This 39.90 percent illiteracy rate of female indicates that still the educational status of women is backward. However this is the better percent of literate female comparing to female literacy rate of Nepal, which is around 42 percent.

4.2.2 Causes of Illiteracy

As we know there may be different factors that are leading or hindering women to read and write. Hence 138 respondents were asked about their causes of illiteracy; means why did they not go school and why they could not read and write? Regarding this question different causes or factors

came as hindering factors of their illiteracy. These different factors or causes about why did they become illiterate is presented in table 4.6 in detail.

Table 4.6: Distribution of Respondents by Causes of Illiteracy

Causes of Illiteracy	Frequency	Percent
Lack of Awareness	48	87.27
Economic Problem	6	10.91
Household work	1	1.82
Total	55	100.00

Source: Field Survey, 2021

From this table 4.6 it is found that majority of respondent 87.27% pointed out that the main cause of their illiteracy is lack of awareness. This means they were unknown or they did not know about the need and importance of education and did not take formal classes. Similarly 10.91 percent respondent out of 55 illiterate said that they could not go to school and became illiterate due to economic problem. Insignificant or only one respondent said the household work is her cause of illiteracy. Hence from this table it can be concluding that most of the female in our society are illiterate because they don't know about the needs and importance of education or they are unaware about literacy and its advantages.

4.3 Drop Out Status of the Respondents

One of the objectives of this study is to find out the drop out status of the sampled female and its causes. There may be different causes that may lead drop out and affect female educational level. Hence in this study the 55 sampled female (who are literate and taken formal education) were asked whether they are going to school/campus or not. The drop out status of the respondents is presented in table 4.7.

Table 4.7: Distribution of Respondents by Drop out Status

Drop out	Frequency	Percent
Yes	49	89.09
No	6	10.91
Total*	55	100.00

Source: Field Survey, 2021

* This is the total number of women who got education from formal sources.

The table 4.7 shows that out of 138 respondents 55 have taken formal education and out of them 49 respondent have left school/campus and 6 are continuing till the date of survey. This number 49 out of 55 is very high. It directly affects the educational status of women.

4.3.1 Drop out Status of the Respondents by class

Table 4.8: Distribution of Respondents by Drop-out Class

Drop-out Class	Frequency	Percent*
1	2	4.08
2	4	8.16
3	6	12.24
4	8	16.33
5	13	26.53
6	6	12.24
7	3	6.12
8	3	6.12
9	2	4.08
10	2	4.08
Total	49	100.00

Source: Field Survey, 2021

*This percent is calculated only on the basis of dropped out population

From the table 4.8 it is found that majority of literate respondent (26.53 percent) who dropped out their classes have dropped out in class 5 and followed by in class 4 (16.33 percent) and class 3 (12.24 percent) and class 6 (12.12 percent). From the above able 27 it can be concluded that most of the female had dropped out in primary and lower secondary level.

4.3.2 Causes of Drop Out

Why does an individual leave school or campus? There may be various causes. There is no doubt that without any cause no one leaves their school or college. Here in this study also the sampled

females are asked why they leaved school. Why did they drop out from their academic institutions? The detail causes and figure is presented in table 4.9.

Table 4.9: Distribution of Respondents by Causes of Drop out

Causes of Drop out	Frequency	Percent
Marriage	7	14.29
Failed in Exam	9	18.37
Household work	20	40.82
Lack of awareness	4	8.16
Far School	4	8.16
Economic Causes	3	6.12
Others	2	4.08
Total	49	100.00

Source: Field Survey, 2021

Table 4.9 shows the various causes about why they left their academic institutions. Majority of respondents have drop out their classes due to household work, which covers 40.82 percent followed by 18.37 percent who dropped out because they failed in exam. Similarly, 14.29 percent women have dropped out due to their marital status i.e. when they married; they compelled to leave school/campus. And some women 8.16 percent have dropped out due to lack of knowledge about the importance of education or we can say due to less priority in education and same (8.16 percent) of women have dropped out due to far school means not availability of school in reachable distance. So there are various causes that are leading drop out and hindering female education.

5. Conclusion

This study based on the small scale survey of three wards of Kirtipur Municipality from the 138 selected sample population and their household members, the major findings are mentioned below.

The findings are separately mentioned on household, individual and their subject matter. Here, in this study household characteristic consist the socio-economic as well as demographic characteristics of the respondent's household members. While conducting field operation 138 sampled respondents were asked along with their households members. The total population is 29360, the numbers of households is 1577 and the total female population of the study area is

15130 and male population is 14230. There is no significant difference between male and female in number.

All 138 sample households have their own land. Likewise in most of houses some facilities like electricity (95.65 percent), radios (81.88 percent), television (86.23 percent) and toilet (73.19 percent) etc. are available but only few households having telephone (23.91 percent) and drinking water (20.29 percent) facilities. It is found that 60.10 percent people are literate where as 39.90 percent are illiterate.

Majority of respondents (87.27%) pointed out that, the main cause of their illiteracy (or why they could not read and write is lack of awareness. And (10.91%) illiterate said that they could not go to school due to economic problem. So the main cause of lower female literacy is due to lack of knowledge or ignorance regarding the importance of women education.

Out of dropped out majority of respondents (26.53%) have dropped out in class 5 followed by (16.33%) in class 4 and 12.24 percent from class 3 and 7 respectively. In case of causes of drop out most of (40.82%) have dropped out their classes due to household work, (18.37%) due to failed in exam, (14.29%) due to marriage and due to distant school and lack of knowledge about the importance of education (8.16%). Finally 6.12 percent respondents have dropped out due to economic problems.

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Received: July 2021 Received in revised form: September 2021 Accepted: November 2021

An Impact of Foreign Direct Investment on Real Gross Domestic Product

- Santa Prasad Bhusal¹

Abstract

The objective of this article is to measure the impact of Foreign Direct Investment (RFDI) on Real Gross Domestic Product (RGDP) covering the sample period 1988- 2019 employing time-series data. Late 1980s has been the significant policy change in overall Nepalese economy. In this respect, first co-integration analysis was introduced to capture long-run relationships among variables. Second, to capture short-run relationship among variables Pairwise Engel Granger test, and Error Correction Mechanism (ECM) developed. On the paper RFDI contributes to RGDP, the coefficient is positive as well as significant at 5 percent level in the short run only. In the long run RFDI is not significant for the Nepalese RGDP growth. The research finds remittance, domestic capital and export are important tools for RGDP growth, and these variables are positive and significant at 5 percent level. All the stability and diagnostic test of the model has no symbols of misspecification and residuals are normally distributed, homoscedasticity and no serially correlated.

Key words: RGDP; RFDI; OLS; ECM; Co-integration; Pairwise Engel Granger test;

Introduction

Nepal is locked in a double constraint. First, it has low domestic revenue and donor financial support for infrastructure and social service delivery. Second, it has low private-sector capital and investment capacity due to poverty. In this respect, foreign direct investment (FDI) becomes an important source of private finance (UNCTAD, 2019).

To attract FDI, developing countries have established pro-investment policies that help firms to open subsidiaries in all parts of the world with relative ease. In this regard, policy makers in developing countries such as Nepal attract FDI to accelerate economic growth, job creation and

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poverty reduction. This is based on the premise that FDI is a way of obtaining capital and technology that is not available in the host country (Olusanya, 2013).

Efforts to transform Nepal economy, can be formally adopted the policy of liberalization, privatization and globalization after the restoration of multiparty democracy in the early 1990s as the forerunner of globalization in the South Asian region. The accession of Nepal to the WTO in 2004 accelerated the process of globalization. However, in the past two decades or so, Nepal has experienced a few success stories as well as cases of failure and frustrated expectations, which clearly highlight the need to assess the whole process of globalization.

FDI is an important driver of economic growth and prosperity. It helps to create jobs, facilitates technology transfer, and is a major source of capital for developing countries. FDI can lead to transfer technology and know-how, improve the access to international markets and spur competition. However FDI inflows cannot be taken as grant, as countries continue to liberalize, transnational corporations (TNCs) are attracted to locate that offer the most appropriate conditions. The increased importance of FDI for economic development has coupled with greater competition between locations has made investment promotion is a growing activity of a government; not only in developed countries, but also in developing countries for their economic in transition.

Literature Review

There have been many empirical studies examining the effect of FDI on economic growth of developing countries. Literature shows that such an effect of FDI inflows on economic growth differs depending on the countries examined. FDI can contribute to growth through several channels. It can directly affect growth through capital formation. As a part of private investment, an increase in FDI will, by itself, contribute to an increase in total investment.

Ronald (2017) empirically explain the impact of FDI on Uganda's economic growth, employment and poverty reduction. To achieve this end, the study brought together the dependent variables as well as FDI and other explanatory variables as a pioneer in economic analysis. He show 100 percent increase in FDI leads 2 percent increase in growth, 10 percent increase in employment and 5 percent decrease in poverty.

UNCTAD (2019) described FDI can play a key role in the economic growth and development process. FDI is considered to be an instrument through which economies are being integrated at the level of production into the world of globalization by bringing a package of assets, including, capital, technology, managerial capacities and skills, and access to foreign markets.

Bhusal (2021) empirical finding indicate that the RFDI contributes to economic growth the coefficient is positive as well as significant at 5 percent level in the short run only. In the long run FDI is not significant for the Nepalese economic growth. The study finds remittance, domestic capital and export are important tools for GDP growth, and these variables are positive and significant at 5 percent level

Objective of the Study

The general objective of the study is to identify the relationship between FDI and economic growth in Nepal. The specific objective is to examine the contribution of RFDI on RGDP in Nepal.

Hypothesis of the Study

Null Hypothesis (Ho): RFDI has no significant contribution to RGDP growth of Nepalese economy (RGDP).

Alternative Hypothesis (H1): RFDI has significant contribution to RGDP growth of Nepal.

Methodology

This entire research design followed the quantitative data. This study employs annual time series data covering of 32 years the period from 1989 to 2019. Late 1980s has been the significant policy change in overall Nepalese economy and latest updated data are available up to 2019AD. The model is developed based on the variable selected as RGDP, RFDI, Remittance, Export, Import, Domestic Capital of Nepal guided by the functional relation between growth and FDI received. All the data are based on secondary sources published by national and international agencies. Different econometrics and statistical tools and models have been used to analyze the data with the help of Excel, E-views-10 and Microfit software package.

Measures of FDI Impact on RGDP (Model -1)

$RGDP = f(RFDI).....(1)$

From the above functional relationship following stochastic model will specified.

$$RGDP = \beta_0 + \beta_1(RFDI) \dots \dots \dots (2)$$

Generally workings of model retested in its natural logarithm form as

$$\ln RGDP = \beta_0 + \beta_1 \ln(RFDI) + \mu \dots \dots \dots (3)$$

Where,

RGDP= Real Gross Domestic Product,

RFDI = Real Foreign Direct Investment,

B₀, β₁...are model parameters μ is the stochastic error term.

Measure of FDI on others Variables Impact on RGDP (Model 2)

$$GDP = f(RFDI, RREM, RDK, REXP, RIMP) \dots \dots \dots (1)$$

From the above functional relationships, the following stochastic model is specified below:

$$RGDP = \beta_0 + \beta_1(RFDI) + \beta_2 (RREM) + \beta_3(RDK) + \beta_4(REXP) + \beta_5(RIMP) + \mu \dots \dots (2)$$

Generally working model can be restated in its natural logarithm form as follows:

$$\ln RGDP = \beta_0 + \beta_1 \ln (RFDI) + \beta_2 \ln (RREM) + \beta_3 \ln (RDK) + \beta_4 \ln (REXP) + \beta_5 \ln (RIMP) + \mu \dots \dots (3)$$

Where,

RREM = Adjusted Remittance,

RDK = Real Domestic Capital,

REXP = Adjusted Export Value,

RIMP = Adjusted Import Value.

Unit Root Test

When we apply standard estimations and test procedures in the dynamic time series model, as the first step, its necessary to examine the stationary property of a series (Gujarati, etal. 2012). Accordingly, Augmented Dickey-Fuller test as suggested Dickey and Fuller (1979) has been applied to test the presence of a unit root in a time series data. There are three versions of ADF test.

$$\Delta Y_t = \beta_1 + ZY_{t-1} + \alpha_i + e_t \dots \dots \dots 1 \text{ (Intercept only)}$$

$$\Delta Y_t = \beta_1 + \beta_2 t + ZY_{t-1} + \alpha_i + e_t \dots \dots \dots 2 \text{ (Trend and intercept only)}$$

$$\Delta Y_t = ZY_{t-1} + \alpha_i + e_t \dots \dots \dots 3 \text{ (no trend, no intercept)}$$

The basic objective of this test is to examine null hypothesis and alternative hypothesis.

Null hypothesis (H₀): Variables are not stationary or got unit root,

Alternative hypothesis (H1): Variables are stationary.

Engle-Granger Co-integration Test

Engle-Granger (1969) calculated critical values that are appropriate to estimate error terms. This approach checks for the mixed effect by checking the stationary of the error terms. If the error terms found to be stationary (I0) at their levels using the Engle and Granger critical values then the regression of the equation will not be spurious.

If the regression model with non-stationary variables is run the regression model may be spurious or nonsense like model 1.1

$$\text{LnRGDP} = \beta_0 + \beta_1 \text{Ln(RFDI)} + \beta_2 \text{Ln(RREM)} + \beta_3 \text{Ln(RDK)} + \beta_4 \text{Ln(REXP)} + \beta_5 \text{Ln(RIMP)} + \mu \dots \text{(Model 1.1)}$$

The symptom of a spurious regression of R-squared value would be greater than Durbin Watson Statistics. After the test of ADF test at level series model variables got unit root or non-stationary. So from the Johansen Co- integration Test and some variables are co-integrating and they have long run relationship. So Engle-Granger Model (ECM) is to be used as given below.

$$D(\text{LnRGDP}) = \beta_0 + \beta_1 D(\text{LnRFDI}_{t-1}) + \beta_2 D(\text{LnRREM}) + \beta_3 D(\text{LnRDK}) + \beta_4 D(\text{LnREXP}) + \beta_5 D(\text{LnRIMP}) + \beta_6 * \text{ECM}_{t-1} + V \dots \text{(Model 1.2)}$$

V is white noise error terms is one period lag residual of model 1.1. ECM_{t-1} is an error correction term that guides the variables of the system to restore back to equilibrium. In other words, it corrects the disequilibrium.

Granger Causality Test

The standard Granger Causality Test seeks to determine whether past value of variable help to predict change in another variable. The definition states that in the conditional distribution, lag value of Y_t add no information to explanation of movement of X_t beyond the provided by lag value of itself.

Empirical Analysis

To examine the impact of RFDI, RGDP is assumed as a function of RFDI. The regression model has been employed to examine the impact of the variables. It was hypothesized that all the independent variables in the model have significant positive impact on Nepalese economy which is a proxy by RGDP and actually following results are obtained.

Following the ADF test, all series are non-stationary at level but stationary at first difference. However, ADF tests are often affected by the choice of the lag length (p) and lose power while estimating a large sample.

Log Level and Frist Difference

Variables	Log Level		First Difference	
	t-statistics	p-value	t-statistics	p-value
LnRGDP	-0.4791	0.8830	-6.7248	0.0000
LnRFDI	-2.0375	0.2701	-8.1474	0.0000
LnRREM	-0.9376	0.7624	-7.9007	0.0000
LnRDK	-0.0795	0.9427	-6.7774	0.0000
LnREXP	-2.3016	0.1778	-7.7146	0.0000
LnRIMP	-0.6758	0.8376	-6.6161	0.0000

Source: Author's estimation results using Eviews-10, 2021

Since all the variables are stationary at first difference we should use the OLS technique.

The results show that RFDI is significant at 5 percent meaning positive impact of RFDI meaning 100 percent increase in RFDI leads to about 62 percent change in RGDP. If we drop others all the variables there is positive relation between RGDP and RFDI.

$$\text{LNRGDP} = 8.13 + 0.62\text{LNRFDI}$$

$$\text{P-value} = 0.0000$$

$$\text{t-value} = (23.4489) (9.9922)$$

$$R^2 = 0.7689, F\text{-test } 99.84, \text{SD} = 1.3050, \text{DW} = 1.90 \text{ (see Appendix)}$$

In the second model the coefficient of LNRDK LNRREM, and LNREXP are positive as well as significant at 5% level but LNRFDI and LNRIMP are not significant at 5 percent. It may be due to larger portion of spending driven out towards consumption of foreign produce goods from import. It seems that very limited amount of FDI is being invested in productive sectors.

$$\text{LNRGDP} = 2.6436 - 0.0012*\text{LNRFDI} + 0.0654*\text{LNRREM} + 0.9012*\text{LNRDK} + 0.3067*\text{LNREXP} - 0.3262*\text{LNRIMP}$$

P- value = 0.0000, 0.9357, 0.0003, 0.0000,0.0000, 0.0622
 t-value = (12.6162) (-0.0815) (4.2174), (6.4499) (7.8044) (-1.9489)
 $R^2 = 0.9989$, F – test 2056.84, SD = 1.3050, DW = 1.36 (see Appendix)

So to see the long run relation between the variable we approach Engle Granger that shows the residual term for stationary. P-value is less than 1% and t-statistics grater then Critical value. We reject null hypothesis and accept alternative hypothesis. So there is co-integration in order zero I(0). Thus residual term being stationary at level we can say there is existence of co-integration. Therefore we converted to the first difference for error correction.

Null Hypothesis: ECM has a unit root
 Exogenous: Constant
 Lag Length: 0 (Automatic - based on SIC, maxlag=2)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-4.180942	0.0027
Test critical values:		
1% level	-3.661661	
5% level	-2.960411	
10% level	-2.619160	

Note: An asterisk *indicates MacKinnon (1996).

In the third model we see the ECMt-1 is known equilibrium error its coefficient tells us what the rate that correct disequilibrium of previous period. The ECM coefficient must be negative for convergent equilibrium which is fulfilled in the model. Others coefficients of LNRDK LNRREM, and LNREXP are positive as well as significant at 5 percent level but LNRFDI(-1) is positive but insignificant at given level. LNRIMP is negative and not significant at 5 percent. It may be negative due to large amount of trade deficit with skyrocketed growth of import by spending foreign currency which shows by following table .

Dependent Variable: DLNRGDP
 Method: Least Squares
 Date: 08/14/21 Time: 09:29
 Sample (adjusted): 1990 2019
 Included observations: 30 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.010750	0.010209	-1.053028	0.3033
DLNRFDI(-1)	0.009550	0.007562	1.262831	0.0563
DLNRDK	0.655178	0.108620	6.031814	0.0000

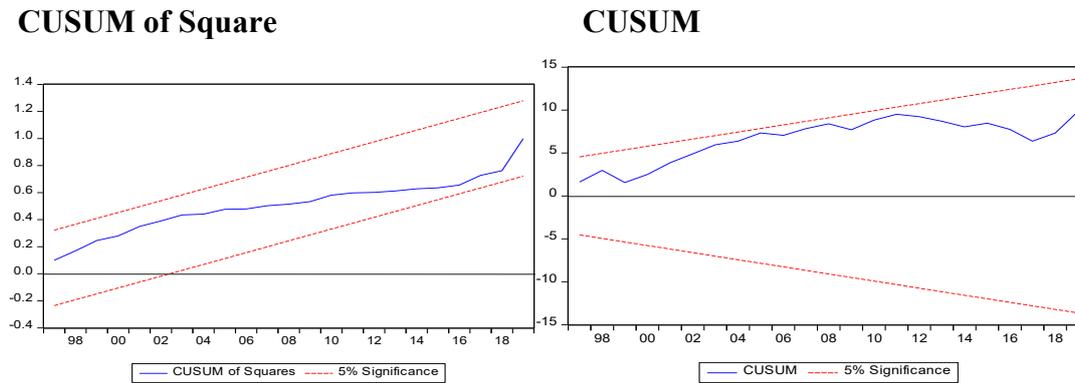
DLNRREM	0.045734	0.018996	2.407568	0.0245
DLNREXP	0.335697	0.058657	5.723060	0.0000
DLNRIMP	-0.055564	0.130791	-0.424828	0.6749
ECM(-1)	-0.571510	0.190023	-3.007588	0.0063
<hr/>				
R-squared	0.994041	Mean dependent var	0.136161	
Adjusted R-squared	0.992486	S.D. dependent var	0.589868	
S.E. of regression	0.051130	Akaike info criterion	-2.907910	
Sum squared resid	0.060129	Schwarz criterion	-2.580964	
Log likelihood	50.61864	Hannan-Quinn criter.	-2.803317	
F-statistic	639.4426	Durbin-Watson stat	1.222534	
Prob(F-statistic)	0.000000			

Source: Author's estimation results using Eviews-10, 2021

All the variables included in the model shows the existence of regression. The R^2 of the model estimation is obtained at 0.99 which indicates that 99 percent of the variation in RGDP can be explained by the variation of independent variables used in the model. The computed F test is 639.05 is higher than the table value. The model is best fit. It confirms the presence of relationship between RGDP and others variables.

Value of D-W is grater then R^2 indicating model is free from the auto-correlation; Augmented Dickey Fuller test has reviled non stationary at the level and stationary when the variables are converted into first difference. Similarly the Angle Granger approach shows the long run relation, the residual term is stationary at the level and p-value is less than 5 percent similarly Error Correction Term (ECM) has negative sign after estimation and significant at 5 percent level . The P-value is less than 5 percent it correct the error at the speed of 57 percent annually. Model stability is checked by normal distribution, by observing R^2 and corresponding and corresponding P-value which are all greater than 5 percent . CUSUM of square and CUSUM test has no structural break limiting within 5 percent boundary shown on the following figures.

Figure Residual Stability Test



Conclusion

The findings of the paper show that there is a positive but not significant relationship between foreign direct investment and economic growth in the long run, since FDI directed toward capital transfer, and service duplication. FDI priorities has shifted from production to non- production. However, the study shows that import has although not significant as well as negative relationship with RGDP. This may be due to use of consumption from national sources. It may be the case of production from imported raw materials. Meanwhile, export, remittance and domestic capital shows significant positive relationship with RGDP which implies that increasing export, remittance and domestic capital has led to increase in RGDP and RGDP from previous year is being used as capital in the current year.

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APPENDIX I

List of RGDP, RFDI, RREM RDK, REXP RIMP (Rs. Million)

Years	RGDP	RFDI	RREM	RDK	REXP	RIMP
1988	9918.8	11.0	50.2	1821.3	466.1	1806.9
1989	11524.4	5.5	60.2	1932.0	585.9	2082.3
1990	14679.3	35.5	67.0	2778.0	899.8	2832.4
1991	9582.5	16.4	27.2	1748.5	878.6	2047.4
1992	10028.8	11.3	32.1	2180.0	1009.7	2292.7
1993	26569.6	26.0	29.7	5604.3	2568.8	6876.0
1994	26406.6	41.0	350.2	5827.7	2125.2	7672.2
1995	32751.7	51.1	350.0	7379.5	2617.0	9796.6
1996	30490.5	176.2	319.3	6390.7	2460.4	10157.9
1997	75211.3	171.3	1021.1	15183.5	6878.3	22250.5
1998	30538.9	51.6	582.2	5837.1	3185.4	7814.7
1999	50598.4	31.1	804.2	8702.5	6642.9	14467.3
2000	176607.6	1355.6	3919.0	30529.6	22261.6	46274.8
2001	170164.1	1255.2	5503.6	28900.4	17386.7	39773.7
2002	164077.0	320.3	13876.7	27204.3	16643.3	41450.7
2003	94166.5	594.6	9935.1	16196.5	9457.9	23908.2
2004	210504.3	48.6	22066.0	35078.6	20966.1	53383.2
2005	96188.8	498.4	13639.5	16911.8	8857.9	25555.9
2006	105482.2	52.5	15567.7	18956.5	8606.2	28216.5
2007	354633.9	127.8	60531.1	66087	25767.8	96494.3
2008	99825.5	184.7	19617.7	18686.9	6838.1	28732.2
2009	108434	259.3	19454.4	24080.9	5529.5	34032.0
2010	146984.3	692.2	27520.8	31476.3	6918.1	42599.6
2011	164230.5	987.6	35845.9	33526.9	7985.1	49641.7
2012	178488.7	956.0	41510.4	40312.6	8096.5	58604.2
2013	215735.2	355.0	54478.1	51334.4	10221.2	79374.0
2014	253589.3	521.5	73491.7	70931.0	10157	92224.3
2015	285210.5	749.5	84192.4	81935.4	8875.6	97923.9
2016	303919.7	1534.4	79040.9	95533.0	8301.0	112512.5
2017	845813.1	4864.4	209893.3	292205.6	22600	345861.1
2018	864698.3	3267.0	196301.3	291235.0	19777.5	354632.5
2019	684916.9	2838.2	187672.9	187650.9	17765.0	217600.0

Sources: Author's estimation results using Eviews-10, 2021

APPENDIX-II

Pairwise Granger Causality

Pairwise Granger Causality Tests

Date: 08/14/21 Time: 07:38

Sample: 1988 2019

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
LNRFDI does not Granger Cause LNRGDP	30	0.56191	0.5772
LNRGDP does not Granger Cause LNRFDI		4.98321	0.0151
LNRREM does not Granger Cause LNRGDP	30	0.61000	0.5512
LNRGDP does not Granger Cause LNRREM		0.98251	0.3884
LNRDK does not Granger Cause LNRGDP	30	0.92706	0.4089
LNRGDP does not Granger Cause LNRDK		1.07566	0.3563
LNREXP does not Granger Cause LNRGDP	30	0.22664	0.7988
LNRGDP does not Granger Cause LNREXP		0.04028	0.9606
LNRIMP does not Granger Cause LNRGDP	30	2.38977	0.1123
LNRGDP does not Granger Cause LNRIMP		2.54486	0.0986
LNRREM does not Granger Cause LNRFDI	30	2.70823	0.0862
LNRFDI does not Granger Cause LNRREM		0.80000	0.4605
LNRDK does not Granger Cause LNRFDI	30	5.79725	0.0085
LNRFDI does not Granger Cause LNRDK		0.10719	0.8988
LNREXP does not Granger Cause LNRFDI	30	2.42166	0.1093
LNRFDI does not Granger Cause LNREXP		0.64037	0.5355
LNRIMP does not Granger Cause LNRFDI	30	6.49314	0.0054
LNRFDI does not Granger Cause LNRIMP		0.17516	0.8403
LNRDK does not Granger Cause LNRREM	30	0.72143	0.4959
LNRREM does not Granger Cause LNRDK		0.44782	0.6440
LNREXP does not Granger Cause LNRREM	30	1.20182	0.3174
LNRREM does not Granger Cause LNREXP		0.23555	0.7919
LNRIMP does not Granger Cause LNRREM	30	1.66712	0.2091
LNRREM does not Granger Cause LNRIMP		0.53514	0.5921
LNREXP does not Granger Cause LNRDK	30	0.54964	0.5840
LNRDK does not Granger Cause LNREXP		0.10482	0.9009
LNRIMP does not Granger Cause LNRDK	30	0.25006	0.7807
LNRDK does not Granger Cause LNRIMP		0.24741	0.7827
LNRIMP does not Granger Cause LNREXP	30	0.08159	0.9219
LNREXP does not Granger Cause LNRIMP		1.07603	0.3562

Source: Author's estimation results using Eviews-10, 2021

APPENDIX-II(A)
Lag order selection Criteria

VAR Lag Order Selection Criteria
Endogenous variables: LNRGDP LNRFDI LNRDK LNRREM LNREXP LNRIMP
Exogenous variables: C
Date: 08/14/21 Time: 07:57
Sample: 1988 2019
Included observations: 30

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-66.31645	NA	5.00e-06	4.821097	5.101336	4.910748
1	49.83151	178.0935*	2.52e-08*	-0.522100*	1.439576*	0.105457*
2	81.87648	36.31764	4.49e-08	-0.258432	3.384681	0.907031

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

Source: Author's estimation results using Eviews-10, 2021

APPENDIX-II(B)
Unit Root Error Correction

Null Hypothesis: ECM has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=2)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-4.180942	0.0027
Test critical values:		
1% level	-3.661661	
5% level	-2.960411	
10% level	-2.619160	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(ECM)

Method: Least Squares
 Date: 08/14/21 Time: 08:10
 Sample (adjusted): 1989 2019
 Included observations: 31 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ECM(-1)	-0.732004	0.175081	-4.180942	0.0002
C	-0.002631	0.011240	-0.234097	0.8166
R-squared	0.376079	Mean dependent var		-0.000895
Adjusted R-squared	0.354565	S.D. dependent var		0.077846
S.E. of regression	0.062540	Akaike info criterion		-2.643670
Sum squared resid	0.113427	Schwarz criterion		-2.551154
Log likelihood	42.97688	Hannan-Quinn criter.		-2.613512
F-statistic	17.48028	Durbin-Watson stat		1.994479
Prob(F-statistic)	0.000244			

Source: Author's estimation results using Eviews-10, 2021

APPENDIX-III

Measure of FDI Impact on GDP

Dependent Variable: LNRGDP
 Method: Least Squares
 Date: 08/14/21 Time: 13:23
 Sample: 1988 2019
 Included observations: 32

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.139534	0.347118	23.44893	0.0000
LNRFDI	0.622643	0.062313	9.992249	0.0000
R-squared	0.768955	Mean dependent var		11.42003
Adjusted R-squared	0.761254	S.D. dependent var		1.305067
S.E. of regression	0.637677	Akaike info criterion		1.998493
Sum squared resid	12.19898	Schwarz criterion		2.090102
Log likelihood	-29.97589	Hannan-Quinn criter.		2.028859
F-statistic	99.84504	Durbin-Watson stat		1.900448
Prob(F-statistic)	0.000000			

Source: Author's estimation results using Eviews-10, 2021

Appendix IV
Measure of RFDI and Other Variables

Dependent Variable: LNRGDP
Method: Least Squares
Date: 08/14/21 Time: 10:21
Sample: 1988 2019
Included observations: 32

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.643664	0.209545	12.61622	0.0000
LNRFDI	-0.001220	0.014966	-0.081521	0.9357
LNRRM	0.065469	0.015523	4.217490	0.0003
LNRDK	0.901215	0.139725	6.449915	0.0000
LNREXP	0.306780	0.039309	7.804409	0.0000
LNRIIMP	-0.326278	0.167412	-1.948956	0.0622
R-squared	0.997478	Mean dependent var		11.42003
Adjusted R-squared	0.996993	S.D. dependent var		1.305067
S.E. of regression	0.071570	Akaike info criterion		-2.268912
Sum squared resid	0.133180	Schwarz criterion		-1.994086
Log likelihood	42.30259	Hannan-Quinn criter.		-2.177815
F-statistic	2056.339	Durbin-Watson stat		1.365240
Prob(F-statistic)	0.000000			

Source: Author's estimation results using Eviews-10, 2021

Received: July 2021 Received in revised form: September 2021 Accepted: November 2021

An Outline of FDI Inflows and Nepal's Economic Evolvement

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Abstract

The objective of this research is to examine into and explain the role of foreign direct investment (FDI) on Nepal's economic growth. The major goal of this paper is to describe the post-liberalization FDI trajectory in Nepal from 1990/91 to 2019/20, as well as its influence on economic growth. A basic regression model is also used in the research to look at FDI and timelines, as well as FDI with employment level as a trend. When data was acquired from secondary sources, descriptive and analytical research approach were used to examine the data. According to the findings, FDI-based industries provide a considerable contribution to the national economy in terms of output, productivity, employment, and resource mobilization. The employment rate has progressively grown during the research period. Both regression equations are significant, and the R^2 prediction indicated that FDI and timeframe are approximately 50 percent equivalent. Also, the R^2 prediction between EMP and FDI appears to be 40%. Furthermore, such negative opinions, in light of recent political developments, should lead us to conclude that FDI inflows are not on a potential to compete. We are, nonetheless, hopeful about our ability to attract FDI.

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Keywords: FDI, cost economic growth, employment, trend,

JEL: C20, F43, O47

Introduction

Foreign Direct Investment (FDI) allows economies to form direct, secure, and long-term relationships. FDI, in particular, promotes technology and know-how transfer between economies. It also helps the host economy's goods to be exported on a wider scale in foreign markets. Foreign direct investment is a significant source of resources for both the host and host economies (Acharya & Khatiwada, 2003).

Nepal is a developing country with a wide savings-to-investment gap. Foreign direct investment (FDI) is widely regarded as a crucial source of development funding. Due to a severe lack of funding for infrastructure financing, FDI is generally welcomed in most all sectors (Chitrakar, 1986). FDI is assumed to be components for transferring technology from advanced countries to under-advanced countries. It also helps to broaden the foundation of local expertise and skills. For a country like Nepal, the benefits of foreign investment don't stop there (Adhikari, 2013).

One of the most significant factors in economic growth is foreign direct investment (FDI). In a globalized economy, foreign direct investment (FDI) is a fundamental process of capital flows. Both the host country and international investors benefit greatly from foreign investments (Balsubramanyam, 1966). As remarked by Rijal (2010), FDI is not only a valuable sources of resources but also a beneficial sources for new technology and managerial know how which tends to sources of human growth.

An influx of capital into a business in the form of management skills and financial lending is known as foreign direct investment (Agrawal & Sahoo, 2003). It directly boosts capital creation in the recipient nation. FDI is the product of multinational companies and host countries sharing a common interest. Allowing private-sector businesses to operate in competitive market conditions and FDI creates the best options for faster national economic growth in the developing nations.

External capital is needed for accelerating growth, according to most economists and developing-country practitioners. For the attraction of foreign private and public investment in the nations it needs developing export processing zones (Lama, 2010).

For the past four decades, the world's developing countries have received financial assistance. Domestic savings are poor in most countries, and the financial sector is underdeveloped. The ability to mobilize domestic financial capital for the growth of key economic sectors is limited. Overall, there is a strong correlation between external financial assistance and a country's economic growth (Burnside & Dollar, 2000).

FDI is the net inflow which is derived from the deduction of outflows from total inflows of an investment to gain a long-term management interests. It is also known as foreign direct investment. Foreign capital is a critical component of both developing and developed countries' long-term economic growth. FDI helps a developing country like Nepal grow and expand its manufacturing base, promote industries of national importance, and gain a competitive advantage (Dahal, 2007).

In the South Asian zone, Nepal is one of the countries that receive the least inward FDI. This is due in part to the fact that it is a small, underdeveloped, mountainous, landlocked nation. Nepal offers access to two neighboring economies with large markets that are friendly and rapidly expanding. It has a low-wage, trainable workforce as well as a thriving local entrepreneurial community. However, there are significant shortcomings in the investment process that must be addressed first.

Literature review

Athukorala and Sharma (2006) pointed that FDI oriented most of the firms are based on capital intensive having local firms. Bista (2005) remarked that most of FDI based firms are heavily located in the Kathmandu valley and Terai zone. So, the foreign investor can invest in the urban areas of Nepal. They focused on the positive attraction of FDI based industries in Nepal.

Chenery and Strout (1966) examined the FDI situation in Nepal and found it to be dire. In comparison to South Asia, Nepal appears to attract just a small amount of international capital and firms despite having free market reforms and incentives. According to Dunning (1993), three

conditions are required for enterprises to engage in FDI in another country. The advantages of ownership, location, and internalization are known as the ownership, location, and internalization advantages. Firms must have a product or technology that gives them a competitive advantage in overseas markets. As noted by (UNCTAD, 1999), for the attraction of FDI, infrastructure facilities for getting raw materials out of the host country and to its final destination. The inflows of FDI needs to be through various ways for contributing investment and growth in host countries.

Feldstein is a physicist who (2000) Through these numerous avenues, FDI should contribute to investment and growth in host countries. As a result of this competition, certain OECD member countries' corporation tax collections have dropped dramatically. Despite the multiple facilities and incentives available in Nepal, the flow of foreign investment is modest. Tariff and non-tariff restrictions on market access have been introduced.

Hassan and Kim are a couple (2014) Foreign direct investment (FDI) is an important vehicle for Nepal's economic development. Prior to the 1990s, FDI influx into Nepal was essentially non-existent during the pre-liberalization period. In areas like tourism and hydropower, Nepal has a competitive advantage. To ensure an investor-friendly environment, there must be an overall improvement in the business climate. According to Hinds (2005), macroeconomic stability is still important since relative prices for each investment must stay constant and predictable. Because expatriate managers are costly, the availability of local managerial expertise is critical. According to Hymer (1960), American FDI was concentrated in a few industries and monopolized by a few companies.

The primary difference between portfolio and direct investment, according to Kindleberger (1973), is that direct investment entails control. Control is a legal term based on a foreign corporation's stock being owned by one hundred, ninety-eight, fifty-one, or forty-eight percent of its shareholders. OECD (2002) has come to consider FDI as a source of economic development in developing nations, emerging economies, and countries in transition. To attract investment, countries have liberalized their FDI rules and adopted various initiatives. The second issue is addressed in the research foreign direct investment for economic development.

As per Pant & Sigdel (2004), Nepal is very competitive in attracting FDI. China's political stability is strong and this stable climate is one of the main reasons for investment. Nepal can

benefit from China's expertise in developing sound foreign direct investment policies. According to Sapkota (2002), foreign investment in basic industries in 1974 was allowed to reach 51 to 100 percent. This was due to restrictive regulations and practices that international investors did not find useful. During this time, there was a significant energy shortage to attract FDI.

Stecher (2005) states that FDI will provide the additional capital needed to accelerate productivity growth. Attracting foreign direct investment facilitates the structural changes needed for growth and contributes to the integration of countries into the international value chain. Ireland, Malaysia, Singapore, Thailand, and now, impressively, China has been successful. Timilsina & Mahato (2000), in the view of FDI, considers foreign investment to be important for the industrialization of Nepal. Some basic requirements are capital, proper skills, and qualified personnel. In 1981 Government of Nepal legislated the foreign investment law under the Foreign Investment and Technology Transfer Act During 1981 to 1987 the total number of industries under manufacturing sector in which FDI can play a key role in the economic growth and development process.

The importance of foreign direct investment for development has increased dramatically in recent years. FDI is considered superior to other types of capital inflows for several reasons. Market-seeking investments are attracted by the size of the host company's market, per capita income, and market growth. For companies, new markets provide the opportunity to remain competitive and grow within the industry. According to the World Investment Report (2012), FDI has recently suffered a setback due to the global financial crisis and the subsequent ongoing debt crisis. Nepal has the lowest rank in the region in terms of FDI potential index. H. 175 out of 182 countries around the world.

Research objectives

The main objectives of the paper are to investigate the trend and current status of FDI in Nepal; to analysis of the impact of foreign direct investment on Nepal's postal liberalization.

Research methodology

The present study has conducted by using secondary data over the period of 1990-2019. The descriptive and analytical research design has been applied to analyze the data. The

quantitative information has been gathered from the sources of Ministry of Industry, Nepal Rastra Bank and other national and international sources whereas the literature has been reviewed from national and international research documents. Data has been presented in graph, table and figure. Simple regression model have been used to diagnosis the data.

The simple regression model has been applied in the overall FDI which is:

$$FDIt = \beta_0 + \beta_1 Tt + \varepsilon \dots \dots \dots (i)$$

Where, $FDIt$ = Overall $FDIt$, Tt = Time periods, β_0 and β_1 are the parameters.

$$FDIt = \beta_0 + \beta_1 FDI_{t-1} + \varepsilon \dots \dots \dots (ii)$$

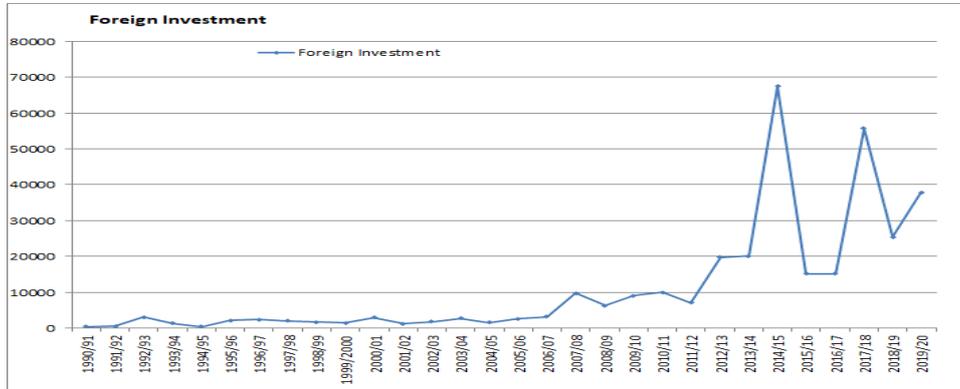
$$EMPt = \beta_0 + \beta_1 FDI_t + \varepsilon \dots \dots \dots (iii)$$

Where, $EMPt$ = Employment, β_0 and β_1 are the parameters.

Growth Trends of FDI in Nepal

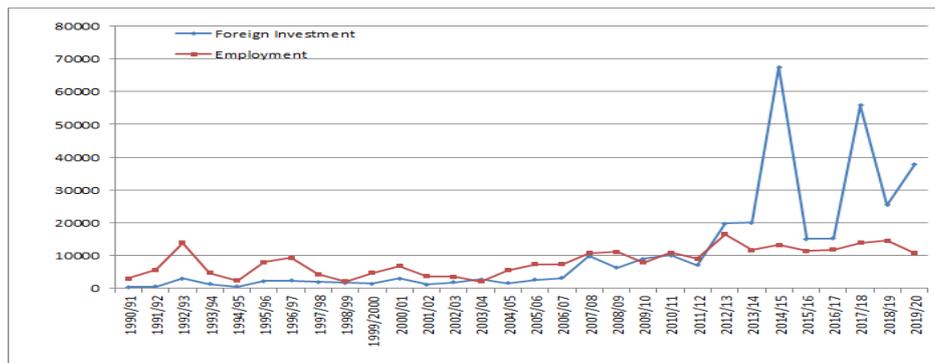
It studies the FDI situation from 1990/91 to 2019/20. Based on this 30-year study period, the total FDI is 331047.37 million. The total FDI of this period is 11,034.91. The total number of industries operating under FDI during this 30 year period is 4952. The total average number of industries operating under FDI during these 30 years is 165.06. The total number of employment is 248362 while the average total employment is 8278. The highest FDI in 2014/15 was 67480.04 million while the lowest was 406.28 million in 1990/91. The highest number of employment is 14544 in 2018/19 and the lowest number is 2154 in 2003/04. Also, the number of industries is highest at 400 in 2016/17 and lowest at 23 in 1990/91.

Figure 1: Trends of FDI with Timeline



Source: Economic Survey and Investment Board Nepal, 2020.

Figure 2: Trends of FDI and Employment



Source: Economic Survey and Investment Board Nepal, 2019/20

Sector-wise FDI Inflow in Nepal

The table depicts that six types of categories in FDI in 2019/20. The highest number of industries is 89 under tourism and the lowest number is 4 under agriculture. Also the highest investment in tourism is 11572.98 million and the lowest investment in agriculture is 447.40 million.

Table 1: Industries approved for foreign investment by category (FY 2019/20) (Rs. in million)

Category	No. of Projects	Total Project Cost*	Total Fixed Cost*	Total Working Capital*	Total Amount of FDI*	Total Employment**

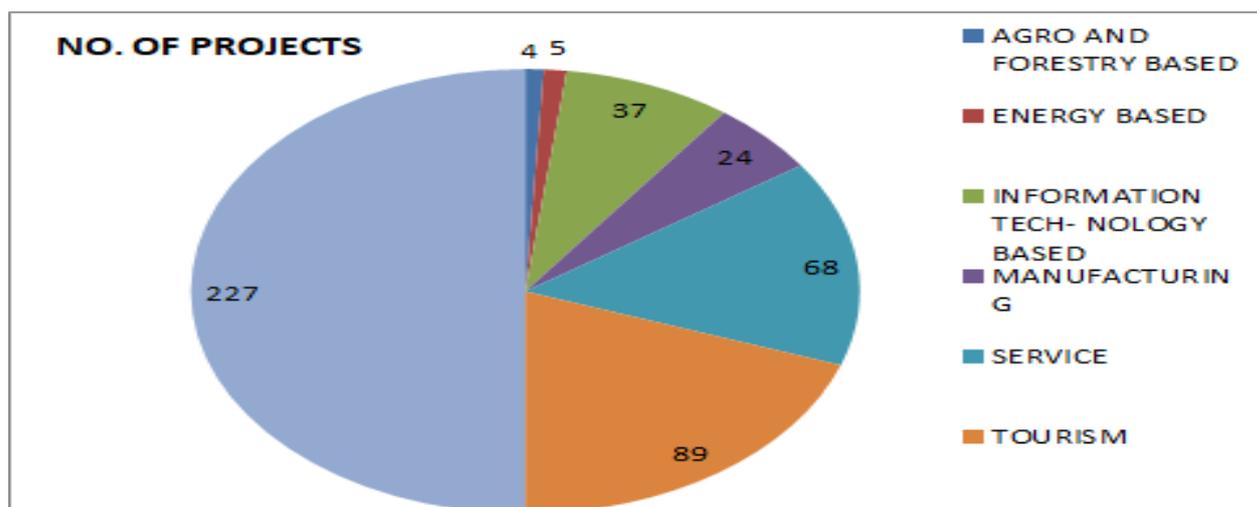
Agro & Forestry Based	4	535.00	332.00	203.00	447.40	180
Energy Based	5	11822.64	11635.53	187.11	4978.78	0
Information Technology Based	37	11654.46	10202.95	1451.51	7081.23	2808
Manufacturing	24	3343.50	2402.50	941.00	2969.87	960
Service	68	11818.00	6308.64	5509.36	10752.00	3796
Tourism	89	11722.24	9370.30	2351.94	11572.98	2966
Total	227	50895.83	40251.91	10643.92	37802.27	10,710

* in million Rupees ** in Number

Source: Department of Industry, 2020

Table 1 depicts the FDI approved industries

Figure 3: Foreign investment by category (FY 2019/20)



Source: Drawing from Table 1

Number of Industries Approved for Foreign Investment by Scale Wise

It divides into three based on the FDI category of industries. The highest number of small and medium scale industry now appears in the table is 154 while the smallest 9 large scale industries have been established. Also, investment is highest in small and medium industries and lowest in large scale industries. Similarly, employment opportunities are also seen in small and medium enterprises while the number of employment in large scale industries is also low.

Table 2: Industries approved for foreign investment by scale (FY 2019/20) (Rs. in million)

Scale	No. of Projects	Total Project Cost*	Total Fixed Cost*	Total Working Capital*	Total Foreign Investment*	Employment*
Large	9	19252.06	18654.49	597.57	7806.23	258
Medium	64	13613.39	12129.37	1484.02	13187.27	3909
Small	154	18081.38	9498.55	8582.83	16859.77	6 543
Total	227	50946.83	40282.41	10,664.42	37853.27	10,710

Source: Department of Industry, 2020

Country-wise Flow of FDI in Nepal

The table does not show this FDI received from all over the country. But only FDI from major countries is shown. Most of the 176 industries are operating under China while only one industry is operating under FDI by four countries. The highest FDI amount is Rs 25,582.65 million from China while the lowest amount is from Hong Kong Rs 50 million. The highest number of employment is seen in FDI from China and the lowest is zero in the United Arab Emirates.

Table 3: Industries approved for foreign investment by country-wise (FY 2019/20)

(Rs. in million)

SN	Country Name	No. of Projects	Total Project Cost	Total Fixed Cost	Total Working Capital	Total Amount of Foreign Investment	No. of Employment
1	Australia	2	100	89	11	100	181
2	Bangladesh	2	200	169	31	200	63
3	Canada	1	500	333.9	166.1	500	70
4	China	176	25900.70	19914.24	5986.46	25582.65	8946
5	Hong Kong	1	50	35	15	50	35
6	France	2	250	237	13	250	72
7	India	19	10867.47	6780.96	4086.51	3897.09	561
8	Japan	3	200	139.5	60.5	151	161
9	Malaysia	2	89	61	28	80.01	56
10	Pakistan	2	100	68	32	100	105
11	Poland	1	150	140	10	150	35
12	Singapore	1	50	30	20	50	25
13	South Korea	3	260	225.4	34.6	250	79
14	Netherlands	2	56.48	26.23	30.26	56.48	35

15	UK	4	6664.32	6468.24	196.08	1926.59	41
16	UAE	2	1124.89	1108.64	16.25	480.5	0
17	USA	4	4583.97	4534.31	49.66	4228.94	268
Total		227	50946.83	40282.41	10664.42	37853.27	10710

Source: Department of Industry, 2020

Trends Line of Overall FDI

In bid to fit the future trend of the overall FDI, the following model has been applied:

$$FDIt = \beta_0 + \beta_1 Tt$$

Where, $FDIt$ = overall FDI in million, Tt = Time period 0, 1, 2, 3....., 29, β_0 and β_1 = parameters.

Table 3: Regression analysis of FDI

Regression Statistics					
Multiple R	R Square		Adjusted R Square	Standard Error	Observations
0.693886498	0.481478473		0.462959847	12012.47839	30
	df	SS	MS	F	Significance F
Regression	1	3751745350	3.75E+09	25.99969	2.11577E-05
Residual	28	4040389841	1.44E+08		
Total	29	7792135191			
	Coefficients	Standard Error	t Stat	P-value	Lower 95%
Intercept	-2580096.818	508170.5354	-5.07723	2.25E-05	-3621036.972
Fiscal Year	1292.01283	253.3860896	5.098989	2.12E-05	772.9749542

With the help of Microsoft Excel, the normal equation is:

$$FDIt = -2500096.81 + 1292.01Tt + \varepsilon$$

This fitted line shows that the overall $FDIt$ has an upward trends and it has annually grown by 1292.01 million rupees during the study period. The regression line predicts that in the F/Y 2021/22 ($Tt = 30$) overall $FDIt$ will be Rs. 29769.09 million. However the parameter of the equation is statistically significant at 5% level of significance. From the regression statistics P value is the 2.11577E-05, this means P value is almost zero which is less than the 0.05, hence, the equation is statistically significant. R^2 and adjusted R^2 are 0.4814 and 0.4629; this prediction has around 50% significance in practical terms. This prediction line is in the figure no 4.

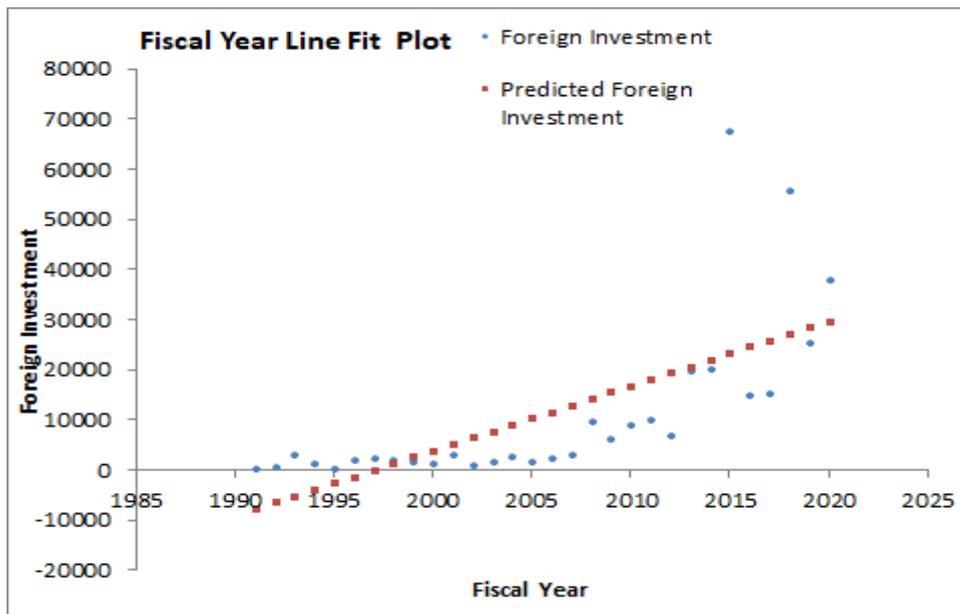


Figure 4: Prediction line of FDI

Trend Line of FDI with lag 1:

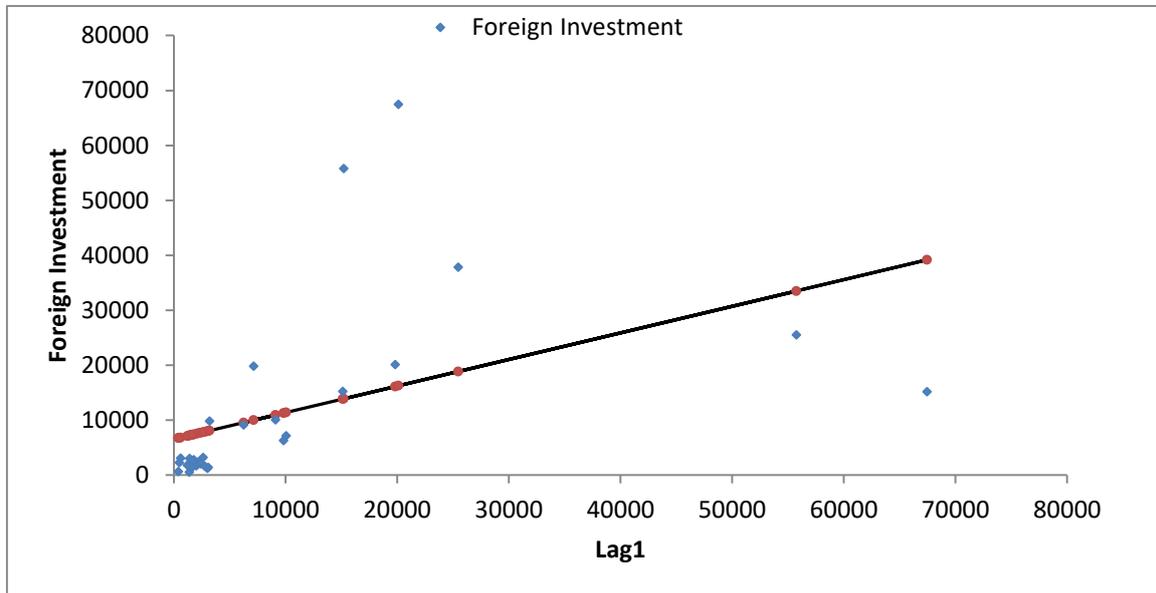
<i>Regression Statistics</i>					
Multiple R		R Square	Adjusted R Square	Standard Error	Observations
0.463325679		0.214670685	0.185584414	14941.38677	29
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	1647655882	1647655882	7.380481525	0.011364892
Residual	27	6027616041	223245038.6		
Total	28	7675271923			
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>
Intercept	6513.158586	3306.918173	1.969555413	0.059228532	-272.0770361
Lag1	0.48350049	0.177973184	2.716704166	0.011364892	0.11832968

With the help of Microsoft Excel, the normal equation is:

$$FDIt = 6513.158 + \beta 10.48350$$

This fitted line shows that the overall FDI_t has an upward trends and it has annually grown by 0.48350 million rupees during the study period. The parameter of the equation is statistically significant at 5% level of significance. From the regression statistics P value is the 0.001, this means P value is less than the 0.05, hence, the equation is statistically significant. R² and adjusted

R² are 0.2146 and 0.1855; this prediction has only 21% significance in practical terms. This prediction line is in the figure 5.



Figure

Trend Line of Employment

In bid to fit the future trend of the employment, the following model has been applied:

$$EMP_t = \beta_0 + \beta_1 FDI_t + \varepsilon$$

Where, EMP_t = employment of certain time period, FDI_t = Foreign Direct Investment of the certain time period 0,1,2,3.....,29, β₀ and β₁= parameters.

Table 3: Regression analysis of employment

Regression Statistics					
Multiple R	R Square	Adjusted R Square	Standard Error		Observations
0.631524226	0.398822848	0.377352236	3271.961913		30
	df	SS	MS	F	Significance F
Regression	1	198862124.6	198862124.6	18.5752897	0.000182144
Residual	28	299760573.2	10705734.76		

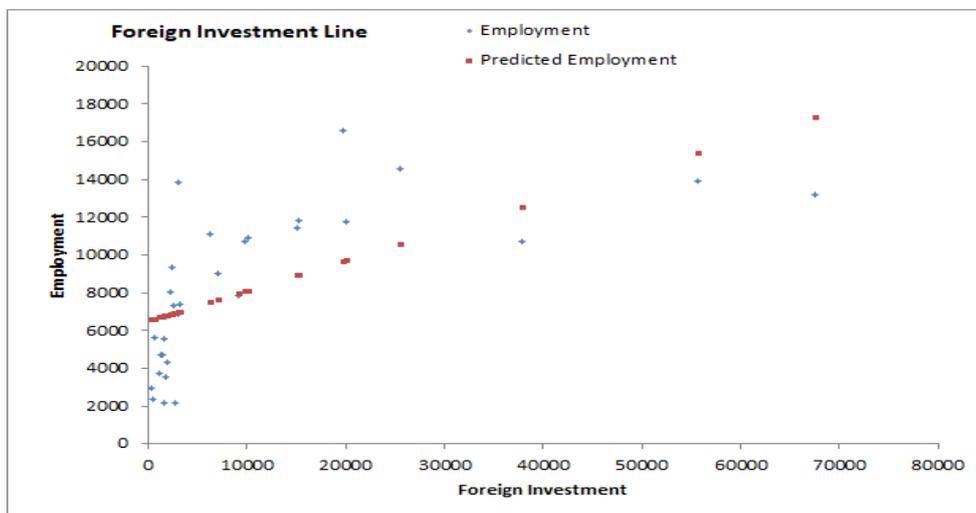
Total	29	498622697.9			
	Coefficients	Standard Error	t Stat	P-value	Lower 95%
Intercept	6515.877953	723.9879362	8.999981391	9.33982E-10	5032.855894
Foreign Investment	0.15975255	0.037066365	4.309905997	0.000182144	0.083825542

With the help of Microsoft Excel, the normal equation is:

$$EMPt = 6515.87 + 0.15975 FDI_t + \varepsilon$$

This fitted line shows that the EMPt has an upward trends and it has annually grown by 0.1597 during the study period. The regression line predicts that in the F/Y 2021/22 (FDIt = 30) EMPt will be 17295 employed. However the parameter of the equation is statistically significant at 5% level of significance. From the regression statistics P value is the 0.000182144, this means P value is almost zero which is less than the 0.05, hence, the equation is statistically significant. R² and adjusted R² are 0.3988 and 0.3773; this prediction has around 40% significance in practical terms. This prediction line is in the figure no 5.

Figure 5: Prediction line of employment



Conclusions

For the 30-year research period, total FDI is 331047.37 million. In 2014/15, the highest amount of foreign direct investment (FDI) was 67480.04 million, while the lowest was 406.28 million in 1990/91. The maximum number of employees employed in 2018/19 was 14544, while

the lowest number in 2003/04 was 2154. Tourism receives the most funding, totaling 11572.98 million, while agriculture receives the least funding, totaling 447.40 million. With Rs 25,582.65 million in FDI, China has the most, while Hong Kong has the least. China's FDI provides the most employment, whereas the United Arab Emirates' FDI creates none. Large-scale enterprises receive the least investment, whereas small and medium-sized businesses receive the most.

China controls the bulk of the 176 industries, with just one industry managed by four nations through FDI. China receives the most FDI, at Rs 25,582.65 million, while Hong Kong receives the least, worth Rs 50 million. China's FDI provides the most employment, whereas the United Arab Emirates' FDI creates none. Over the research period, the overall FDI trend has been favorable, with yearly increase of 1292.01 million rupees. Overall FD in F/Y 2021/22 (Tt = 30) is expected to be Rs. 29769.09 million, up Rs. 1292 million rupees over the previous year, according to the regression line.

Over the last two to three decades, foreign direct investment (FDI) has been more important as a source of capital, technology, skills, and capacity. Economic development is critical for all countries, but it is especially critical for post-conflict countries like Nepal. Development aid alone will not be enough to rebuild a post-conflict economy, but FDI may help revive industry and restore infrastructure. During the present global recession, the country must remain attractive to FDI, particularly for investment that would help it achieve its long-term development goals. Maintaining existing investment is also crucial, especially given the present deteriorating security environment, which may encourage MNCs to shut or shift foreign affiliates to safer locations.

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