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Porag Pachoni

PDUAMT BUSINESS REVIEW

An International Peer-Reviewed Annual Journal of Pandit Deendayal Upadhyaya AdarshaMahavidyalaya, Tulungia, Bongaigaon, Assam, India

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All disputes are subject to Bongaigaon jurisdiction only.

Patron's Message

I am happy to release the fifth issue of PDUAMT Business Review - an International Peer-Reviewed Annual Journal of Pandit Deendayal Upadhyaya Adarsha Mahavidyalaya, Tulungia, Bongaigaon. The journal has been successfully contributing significant numbers of annual research studies in the field of commerce since 2019. The research papers published in the present issue will benefit the academic community. I expect this endeavor will offer a new tagline to the college's academic scenario. Finally, I express my appreciation to all scholars, academicians and well-wishers for their significant contribution to enrich the journal status.

Dr. Pranjal Morang
Patron

Editorial

Dear Readers,

It gives us an immense pleasure to publish the fifth issue of the PDUAMT Business Review. The fifth issue is the upshot of the contribution ended by the academic community across the globe. This issue comprises ten research studies authored by the esteemed authors on the domains of Audit Quality of Government Internal Auditors, Foreign Direct Investment and Indian Economy, Performance of Punjab National Bank Post Mega Merger, Moonlighting, Issues and Challenges for Startups in India, Effects of Urbanization, Foreign Direct Investment, Non-Agricultural Sector, and Coastal Geography on Per Capita Income in Indian States, Management Thoughts in Assamese Proverbs, Sustainable Entrepreneurship Effectiveness of the Public Distribution System and Tribal Women Workforce Participation.

We confidence that the manuscripts published in the present issue will fill up the research gap in the existing literature.

Finally, I am grateful to all the authors for their significant contributions. I am also obliged to authority concerned for this responsibility.

Porag Pachoni
Editor
PDUAMT Business Review

Enhancing Audit Quality of Government Internal Auditors: The Role of Competency as Moderation

Helga Syanetta[1], Rita Anugerah[2], Yesi Mutia Basri[3]

Abstract

Previous studies have highlighted the quality of audits on external auditors of public companies. The audit quality of government internal auditors is also essential. It is due to the many differences in audit results between internal and external auditors. Previous research tested review stages, time pressure, and review budgets on internal auditor audit quality, but the research results still showed different results. This study tries to investigate the effect of auditor competence as a variable that improves audit quality for internal auditors in local governments in Indonesia. This study analyzes the stages of the budget, time pressure, and availability of the budget review of the quality of local government audits. This study also analyzes the competence of auditors in moderation. The data used in this study is primary data in the form of the opinion of the internal auditors as respondents. A total of 181 internal auditors participated in this study. Data collection sending a questionnaire. This study uses statistical tools to analyze research results, namely descriptive statistics and uses a structural equation model with PLS to answer the research hypothesis. This study's findings indicate that the review stages, time pressure and review budget affect audit quality. Auditor competence also plays a moderating role. This research has contributed to the government improving internal auditors' competence through training.

Keywords: *Review Stages, Time Pressure, Review Fund Budget, Competence, audit Quality*

JEL Classification: M41 M42

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Introduction

Government financial reports must be prepared and presented in accordance with one of the qualitative features of financial reports, namely dependability. The presentation of information free of misleading conceptions and material inaccuracies, which portrays every fact honestly and can be confirmed, demonstrates the dependability of financial accounts (Kemenkeu, 2010). The role of internal auditors in examining financial reports is inextricably linked to the presentation of high-quality financial reports. According to Widyarini and Ratnadi (2016), The auditor's ability to find and report abnormalities in the accounting system utilizing their knowledge and skills defines the review's quality. A quality review will improve the quality of the information presented in the financial reports (Roychowdhury, Shroff and Verdi, 2019 ;Vitolla, Raimo and Rubino, 2020). The review's quality reflects the audit quality of the government's internal auditors. The results of audits by qualified internal auditors are indicated by the absence of differences in findings between internal and external auditors (Kaawaase *et al.*, 2021 ; Al-Taee and Flayyih, 2023)

Several cases of audit quality of local government internal auditors in Indonesia show that the quality could be more optimal. For example, the findings of an external auditor's study of the regional administration of Riau Province's financial statements still necessitate the correction of journal entries. In 2019 there were 313 corrections made by external auditors. It shows that the audit quality of the internal auditors in the local

government has yet to be maximized. External auditor findings should be minimized if internal auditors offer advice on financial statement review before being reviewed by external auditors.

Previous research has discussed audit quality related to internal auditors. Many studies examine the role of internal auditors in business firms, for example (Al-taee and Flayyih, 2022 anf Tumwebaze *et al.*, 2022). Government research has found that review procedures determine audit quality (Widyarini and Ratnadi, 2016 ; Bekaiang, Sondakh and Kalalo, 2017). Internal auditors must also apply review procedures to obtain competent and sufficient evidence to detect irregularities in preparing financial statements (Jarah *et al.*, 2022; Almasria, 2022). This finding is supported by Widyarini and Ratnadi (2016), Bekaiang, Sondakh and Kalalo (2017). However, the findings differ Deda, Karamoy and Gamaliel (2017) showed different results; namely, the review procedure did not affect the quality of the review.

Time pressure is one of the causes of an auditor taking action to reduce audit quality (Thompson, 2022 ; Astuty *et al.*, 2022). Time pressure can cause the auditor to ignore some of the audit procedures determined to pursue the audit to be completed on time. Jamarang and Kartini (2022) and Novasari (2023) discovered that time budget pressure reduces audit quality. However, conflicting conclusions were reached by Isnanniasa and Prasetyono (2020) who discovered that time pressure had a favorable influence on review quality and Zam and Rahayu, (2015) who discovered that time pressure has no effect on audit quality. Widyarini and Ratnadi, (2016) dan Broberg *et al.* (2017) found that the availability of sufficient review funding budgets also had an effect on audit quality but was different from the findings conducted by Pikirang, Sabijono and Wokas (2017) and Rahmadini and Fauzihardani (2022) budget review funds do not affect audit quality.

The contradiction of these studies' findings provides an opportunity for the advancement of audit quality research in government internal auditors. This study uses auditor competence as a moderating variable that influences this relationship. According to Attribution theory (Heider, 1958), internal and external factors in individuals can affect the results of their work. One of the internal elements influencing audit quality is auditor competency. Competence is considered capable of strengthening the variable stages of the review, time pressure and review fund budget on the quality of the review. It is the opinion Seliamang and Tapatfeto (2022). In contrast, in carrying out financial statement audits, competent auditors are required who have sufficient expertise and technical training and understand the basic concepts of review and understand, in general, the nature of entity transactions, accounting systems and procedures, forms of accounting records and accounting basis used to present financial statements.

Based on the preceding description, the purpose of this study is to examine the budget phases, time constraints, and budget availability, as well as the audit quality of the local government's internal auditors. This study also analyzes the competence of auditors in moderation.

Review of Literature

The Attribution Theory (Heider, 1958) is used in this study to explain the impact of review phases, review money, time pressure, and auditor competency on the quality of government internal auditor reviews. Attribution theory interprets an event, reason, or cause as a combination of internal and external forces. The same stated Kenyon and Tilton (2012) that attribution theory explains how People are judged differently by humans depending on the meaning assigned to a certain behavior. This theory suggests that if someone observes an individual's behaviour, that person tries to determine whether internal or external factors cause the behaviour.

In audit quality, various internal and external auditor factors can determine the auditor's attitude in his work. Stages of review and availability of funds, and time pressure are external factors that determine auditor behaviour. At the same time, competence is an internal factor that can influence the attitude of an auditor. Therefore, this study suspects a relationship exists between internal and external auditors' factors on the quality of their work.

The Effect of Review Stages on Audit Quality

The process of tracking figures in financial reports, queries, and analytics is known as review (Kenyon and Tilton, 2012 ;Murdifin, 2020). The financial report review's goal is to provide limited assurance that the financial statements were prepared under acceptable internal controls and are presented in accordance with accounting standards (Putri, 2022). The review does not provide an opinion or test the truth of the substance of the source document. The stages of the review carried out by the auditor in full impact the review results. The review results will be more accurate if all stages are carried out. It will also determine the quality of the examination performed by the auditor. Research conducted by Xiao, Geng and Yuan (2020), Widyarini and Ratnadi (2016) and Rose *et al.* (2020) found that the procedure as one of the steps in the implementation stage of the review affects audit quality. From this description, the hypothesis in this study is as follows.
H1: The review stage has a positive effect on audit quality

The Effect of Time Pressure on Audit Quality

Time pressure might occur when the auditor is under pressure from his employer to do his work on time (Tetteh, Agyenim-Boateng and Simpson, 2023). This time pressure aims to reduce the burden of audit fees, with this time pressure forcing the auditor to complete the tasks assigned quickly or according to a predetermined time budget(Harber, Duboisée de Ricquebourg and Maroun, 2022). The audit results obtained when there is a set time pressure will differ from those when there is no set time pressure (Singh *et al.*, 2022). When the auditor wants to comply with the predetermined time budget, it is likely that the auditor will ignore the established audit procedures and will tend to reduce audit quality (Safriliana and Boreel, 2019). Research conducted by Amiruddin (2019), Hayati and Amalia (2021) and Amalia, Sutrisno and Baridwan (2019) discovered that time constraints have a negative impact on audit quality. The following is the hypothesis in this study based on this description:
H2: Time pressure has a negative effect on audit quality.

The Influence of the Review Fund Budget on Audit Quality

According to Mardiasmo (2018), a budget is a description of the expected performance to be attained during a given period stated in financial terms. The budget is significant to support the implementation of activities. The quality of the review depends on whether or not the scope of the financial statement review is broad (Thomas *et al.*, 2019). The scope of the inspection depends on the availability of budgeted funds. If sufficient review funds are available, the auditor can carry out a more in-depth review (Sari, Muhyarsyah and Wahyuni, 2020); however, an auditor cannot carry out a more comprehensive review limited by the availability of funds. According to research Widyarini and Ratnadi (2016) and Broberg et al (2017), the review fund budget influences audit quality. Based on the description above, it is hypothesized:
H3: The review fund budget has a positive effect on audit quality.

Effect of Competency Moderation on the relationship between review stages and audit quality

Based on Attribution Theory (Heider, 1958) explains that internal attributions can influence the auditor's behaviour in the form of competencies that can lead to action. The implementation of the audit is influenced by competent personnel with sufficient

expertise and technical training as auditors (Pinto, Rosidi and Baridwan, 2020). Competent auditors understand the basic concepts and stages of reviewCorrectly carried out review stages by a professional auditor will increase the quality of the review and the audit. Research conducted Widyarini and Ratnadi, (2016) found that the review and competency stages affect the review's quality. From this description, the hypothesis in this study is as follows.

H4: Competence is positively significant moderates the effect of the review stage on audit quality.

The Effect of Competency Moderation on the relationship between time pressure and audit quality

The presence of this time constraint forces internal auditors to finish jobs as quickly as possible/in accordance with a time limit. It can only be done by auditors who have high competence. Auditors with high competence and experience can minimize the effects of audit time pressure (Supriyatin, Iqbal and Indradewa, 2019). By attribution theory, internal attributions such as competence can affect auditor behaviour. Individuals who have high competence can overcome their difficulties (Khasanov, 2022). Thus, competence will reduce pressure and affect the auditor's performance. Bestari and Wahyuni (2023) discovered that time constraints and expertise had an impact on the quality of the review. From this description, the hypothesis in this study is as follows.

H5: Competence is positively significant in moderating the effect of time pressure on audit quality.

The Effect of Competency Moderation on the relationship between budget review and audit quality

The review fund budget has functions, including as a planning tool; the budget functions to plan the resources needed by the organization to achieve the goals that have been set (Anggraini *et al.*, 2023). The audit is carried out by the budget provided. The auditor's ability to understand planning and budgeting determines the stages in implementing the review Sumarta and Karyono (2023). Competent auditors can carry out budget planning and execution according to audit objectives. So, the auditor's competence can strengthen the planning and implementation of the review budget, which will ultimately impact audit quality.

H6: Competence positively significant moderates the effect of the review fund budget on audit quality.

Objectives of the Study

This research aims to
  i. Test and analyze the influence of the review stage on audit quality
  ii. Test and analyze the effect of time pressure on audit quality
  iii. Test and analyze the influence of budget review funds on audit quality
  iv. Test and analyze the moderating effect of competency on the relationship between the review stage and audit quality
  v. Test and analyze the moderating effect of competency on the relationship between time pressure and audit quality
  vi. Test and analyze the moderating effect of competency on the relationship between budget review funds and audit quality

Research Model

The research model is depicted in Figure 1

Independent Variable Moderating Variable Dependent Variable
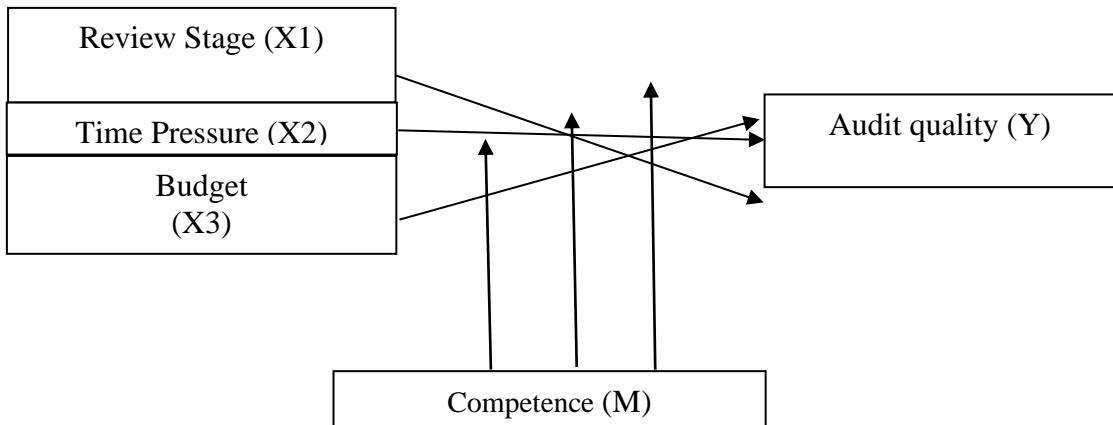
Figure 1: Research Model

Database and Methodology

Population and Sample

This study's population consisted of government internal auditors from all regions of Riau Province. Twelve areas are the object of this study, with a total of 297 internal auditors. Purposive sampling was utilized in this study, a sample taken based on predetermined criteria (Ghozali, 2018). The sample criteria in this study are auditors who have reviewed financial statements. The data collection technique in this study was a questionnaire. Questionnaires will be given to respondents, namely local government internal auditors, through the Google Form.

Operational Definition and Variable Measurement

Table 1: Operational Definitions and Research Variables

Research variable	Indicator	Scale
Review Quality (Y) The probability that the Regency/Municipal Inspectorate as APIP finds and reports and corrects material misstatements contained in the LKPD	1. Timeliness of review implementation 2. The competence of the reviewer 3. Review working paper 4. Review report Source: PMK No8/PMK.09/2015	Ordinal
Stages of Review(X1) A quality review stage if it has been stated fairly if accounting standards have been carried out during the review stages.	1. Preparation 2. Implementation 3. Reporting Source: Regulation of the Minister of Home Affairs of the Republic of Indonesia Number 4 of 2018	Ordinal
Time Pressure()X$_2$ It is a situation in which APIP is under pressure to perform its tasks within a specific time frame.	1. Assignment time limitations 2. Completion of the review within the specified time	Ordinal

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Research variable	Indicator	Scale
	3. Fulfilment of time targets during assignments 4. Focus on review tasks with limited time 5. Communication about time and budget 6. Review process effectiveness 7. Superiors' evaluations of performance Source: Widyarini (2016)	
Budget()X_3 A financial statement expressing the estimated performance to be attained during a given period.	1. Official travel 2. Meetings outside the office 3. Team Honors Source:(Arens, Elder and Beasley, 2012)	Ordinal
Competence()X_4 Some characteristics that underlie a person are related to the effectiveness of individual performance in his work.	1. Mastery of accounting and auditing standards 2. Insights about governance 3. Skills upgrade Source:(Efendy, 2010)	Ordinal

Data Analysis Techniques

To evaluate the association between variables, the data analysis technique employed in this study is SEM (Structural Equation Modeling) or SEM using the PLS (Partial Least Square) program. In this work, researchers performed Structural Equation Modeling (SEM) analysis with the WarpPLS technique. The Warp PLS SEM is used because of this multivariate technique that combines aspects of multiple regression (examining dependency relationships) and factor analysis to estimate a series of interrelated dependency relationships simultaneously (Hair *et al.*, 2014)

Result and Discussion

Descriptive Analysis

This research has distributed 297 questionnaires via Google Forms to government internal auditors in Riau Province, Indonesia. The sample was then drawn using a purposive sampling technique among the first, junior, middle, and primary examiners who had reviewed the financial statements. Of these, 181 (85.18%) collected and processed data. The descriptive analysis is presented in Table 2.

Table 2: Descriptive statistics

	Number of Respondents	Min Value	Maximum Value	Means	Standard Deviation
Audit quality	181	1.00	5.00	3.8586	.76752
Review Stages	181	1.89	5.00	3.7962	.70907
Time Pressure	181	1.29	5.00	2.7820	.82784
Review Fund Budget	181	1.67	4.83	3.3951	.71945
Competence	181	1.00	5.00	3.7467	.73113
Valid N (listwise)	181				

The mean and standard deviation values of all variables indicate a good data distribution

because the average value is greater than the standard deviation value. The next step is testing with SEM PLS.

Evaluation of the Outer Model Measurement Model

Validity testing is the first step in testing the outer model. The validity of an instrument is a measure of how exactly it can create data based on the real size that you wish to measure. The validity test includes both convergent and discriminant validity. The loading factor reveals the reflexive indication convergent validity test. A valid indicator is one with a loading factor value greater than 0.70 (Hair *et al.*, 2010). While the discriminant validity test can be seen by comparing the AVE square root to cross-loading and correlation between latent variables. Table 3 shows convergent validity and cross-loading.

Table 3: Cross Loading Quality Review Construct

Indicator	Audit Quality	Review Stages	Time Pressure	Review Fund Budget	Competence	Cronbach Alpha	Composite Reliability
Y. 1	**0.737**	0.035	0.017	-0.013	0.107	0.952	0.960
Y.2	**0.803**	0.088	-0.068	0.030	-0.157		
Y.3	**0.882**	-0.042	-0.029	-0.008	-0.067		
Y.4	**0.899**	-0.024	0.062	0.041	0.001		
Y.5	**0.918**	-0.078	0.007	-0.013	0.123		
Y.6	**0.927**	-0.121	-0.010	-0.017	0.006		
Y.7	**0913**	0.078	0.013	-0.024	0.008		
Y. 8	**0.835**	0.090	0.004	0.006	-0.023		
X1,1	-0.118	**0.900**	-0.057	0.030	0.040	0.985	0.986
X1,2	0.106	**0898**	0.029	-0.005	-0.045		
X1,3	-0.002	**0898**	-0.049	0.068	-0.077		
X1,4	0.098	**0.918**	0.013	-0.020	-0.155		
X1,5	0.078	**0.880**	-0.030	0.025	-0.200		
X1,6	0.182	**0.904**	0.024	-0.070	-0.154		
X1,7	0.180	**0.856**	0.007	-0.029	-0.234		
X1,8	-0.044	**0.943**	0.046	-0.013	0.127		
X1,9	-0.030	**0.920**	0.012	0.010	0.047		
X1,10	0.012	**0.927**	-0.015	-0.045	0.059		
X1,11	-0.064	**0.920**	-0.037	0.025	0.057		
X1,12	0.019	**0.920**	0.041	-0.035	0.094		
X1,13	-0.022	**0917**	0.014	-0.037	0.057		
X1,14	0.016	**0.886**	-0.013	0.002	0.025		
X1,15	-0.158	**0.903**	-0.056	0.062	0.113		
X1,16	-0.085	**0.915**	-0.045	0.003	0.111		
X1,17	0.020	**0.812**	0.054	-0.016	-0.034		
X1,18	-0.198	**0.782**	0.076	0.053	0.159		

Indicator	Audit Quality	Review Stages	Time Pressure	Review Fund Budget	Competence	Cronbach Alpha	Composite Reliability
X2,1	0.005	-0.075	**0.775**	-0.123	0.082	0.920	0936
X2,2	0.001	0.034	**0.853**	0.056	-0.089		
X2,3	-0.068	0.019	**0837**	0.090	-0.051		
X2,4	0.012	-0.022	**0849**	0.020	0.045		
X2,5	-0.029	-0.006	**0.758**	0.003	0.083		
X2,6	-0.029	0.086	**0879**	-0.068	-0.020		
X2,7	0.112	-0.048	**0.797**	0.014	-0.036		
X3,1	-0.051	-0.023	0.063	**0.857**	0.022	0.924	**0941**
X3,2	0.030	-0.010	0.013	**0.850**	0.161		
X3,3	0.016	-0.029	-0.001	**0.899**	-0.071		
X3,4	0.011	0.033	-0.057	**0.852**	0.052		
X3,5	0.040	0.017	0.066	**0.842**	-0.205		
X3,6	-0.047	0.016	-0.088	**0.806**	0.045		
M,1	-0.140	0.004	0.037	-0.079	**0.827**	**0.958**	**0966**
M,2	-0,000	-0.109	-0.055	0.027	**0.918**		
M,3	0.034	0.014	-0.007	-0.038	**0.930**		
M,4	-0.038	0.022	0.021	0.047	**0.933**		
M,5	0.017	0.023	-0.023	0.061	**0937**		
M,6	0.115	0.046	0.032	-0.028	**0.904**		

Source: Authors Compilation

Table 3 reveals that the loading factor value is greater than 0.7, and the correlation of all constructed variable indicators to the constructed variable is high. This finding explains why all indicators in the competency construct variables meet the convergent and discriminant validity standards (Hair *et al.*, 2010). Discriminant validity can also be seen from the correlation between latent variables, which can be seen in Table 4.

Table 4: AVE Square Root Value

	Audit quality	T. Review	Q. Time	AD. Revi
Audit quality	**(0.866)**	0.595	-0.462	0.534
T. Review	0.595	**(0.895)**	-0.357	0.341
Q. Time	-0.462	-0.357	**(0.822)**	-0.211
AD. Revi	0.534	0.341	-0.211	**(0.852)**

Source: Authors Compilation

Table 4 shows that each construct variable, such as audit quality, review stages, time pressure, and review budget, can explain greater variance in the measurement of the items/indicators itself when divided by other construct variables. This is demonstrated by the square root value of AVE being greater than the correlation between latent construct variables in the model, hence the values indicated above are considered good and match the criterion of discriminant validity (Fornell and Larcker, 1981).

The reliability test is the next outer model test. The dependability of a measurement denotes the stability and consistency of an instrument that measures a notion and is valuable for verifying the measurement's "goodness" (Sekaran and Baugie, 2019). Cronbach alpha and composite reliability are the two standards for measuring or evaluating dependability. Cronbach alpha and composite reliability of latent construct factors such as review quality, review stages, time pressure, review fund budget, and competency are all more than 0.70 in Table 3. This explains why all construct variables meet the criterion for reliability (Hair et al., 2010).

Evaluation of the Inner Model Measurement Model

A structural model (inner model) predicts the causal relationship between latent variables (Ghozali and Latan, 2018). A fit model is required for inner model testing. The model's goodness of fit can be measured by different fit indicators, the results of which are shown in Table 5.

Table 5: Model Fit and Quality Indices

Model fit and quality indices	Criteria	Information
Average path coefficient (APC)=	0.240, P<0.001	Accepted
Average R-squared (ARS)=	0.786, P<0.001	Accepted
Average block VIF (AVIF)=	2.244, acceptable if <= 5, ideally <= 3.3	Accepted
Tenenhaus GoF (GoF)=	0.816, small >= 0.1, medium >= 0.25, large >= 0.36	Accepted
Sympson's paradox ratio (SPR)=	1,000, acceptable if >= 0.7, ideally = 1	Accepted

Source: Authors Compilation

Table 5 shows that all fit model criteria are acceptable. This shows that the model has no problems and further testing can be done.

Hypothesis Testing

The theory will be tested next. To forecast the existence of a causal association in SEM-PLS using WarpPLS 7.0, examine the T-Statistics in the table path coefficient, p-value, and standard errors. And path coefficient effect sizes. The direct effect hypothesis test yielded the following results.

Table 6: Hypothesis Test Results

		P Value	*coefficient*	Information
H1	Stages of Review → Audit quality	<0.001	0.38	Supported
H2	Time pressure → Audit quality	0.005	-0.16	Supported
H3	Review fund budget → Audit quality	<0.001	0.29	Supported
H4	Stages of Review → Competence*stage review → Audit quality	0.035	0.20	Supported
H5	Time pressure → Competence*time pressure → Audit quality	0.046	0.20	Supported
H6	Review fund budget → Competence*budget → Audit quality	0.028	0.22	Supported

Source: Authors Compilation

Based on Table 6, the effect of the review stage on audit quality is significant, with a coefficient value of 0.38 and p-value <0.005, which indicates an influence between the review stage and the audit quality of government internal auditors (H1 is accepted). The influence of time pressure on audit quality is significant, with a coefficient value of -0.16

and p-value of 0.005 <0.05, which indicates that there is an influence between time pressure and audit quality (H2 accepted). The effect of the review fund budget on review quality is significant, with a coefficient value of 0.29 and p-value <0.001, which indicates an influence between the review fund budget and audit quality (H3 accepted). The influence of competency in moderating the review stages on review quality is significant, with a coefficient value of 0.20 and p-value 0. 035, which indicates that there is an effect of competence in moderating the review stage on audit quality (H4 is accepted). The effect of competency in moderating the review fund budget on audit quality is significant, with a coefficient value of 0.22 p-value 0.028 which indicates an influence of competence in moderating the review fund budget on audit quality (H5 accepted). The effect of competence in moderating the review fund budget on audit quality is significant, with a coefficient value of 0.22 and p-value of 0.028, indicating that there is an effect of competency in moderating the review fund budget on audit quality (H6 accepted). 22, p-value 0.028 indicates that competency is affected by moderating the review fund budget on audit quality (H5 accepted). The effect of competence in moderating the review fund budget on audit quality is significant, with a coefficient value of 0.22 p-value 0.028, indicating an effect of competency in moderating the review fund budget on audit quality (H6 accepted). P-value 0.028 indicates an effect of competency in moderating the review fund budget on audit quality (H5 accepted). The effect of competence in moderating the review fund budget on audit quality is significant, with a coefficient value of 0.22 and p-value of 0.028, indicating that there is an effect of competency in moderating the review fund budget on audit quality (H6 accepted).

Discussion

The results of the study show that the review stage affects audit quality. The research aligns with the Attribution Theory that internal factors cause attitudes or behaviour. Stages are external factors that impact the quality of audit work. The ability to carry out all stages of the review impacts the results of the review.

The study results show that the average review stage is not too high, meaning that the review stage still needs to be improved. This also has an impact on audit quality which is also low. In line with Xiao, Geng and Yuan (2020) that audit quality is determined by the process implemented. The complete process will impact the results of the auditor's work. Research conducted by Xiao, Geng and Yuan (2020), Widyarini and Ratnadi (2016) and Rose *et al.*, (2020) found that the procedure as one of the steps in the implementation stage of the review has an effect on audit quality.

The results of the study show that time pressure affects audit quality. Data shows that the time pressure for the internal audit of the Riau provincial government is still low, and audit quality is in the fairly high category. This means that low time pressure can increasingly impact auditor performance. This study supports the Attribution Theory, namely, external factors will influence individual behaviour. Time pressure is an external factor that encourages auditors to complete work on time. The results of the study found that time pressure will reduce audit quality. Work carried out with the given time pressure has an impact on negligence and errors(Amiruddin, 2019). This time pressure aims to reduce the burden of audit fees. This time pressure forces the auditor to complete the tasks assigned quickly or according to a predetermined time budget (Arens, Alvin., , Randal J. Elder, 2012). This research is in line with Amiruddin (2019), Hayati and Amalia (2021) and Amalia, Sutrisno and Baridwan (2019) who found that time pressure affects audit quality

The results of the study show that there is an influence between the review fund budget and audit quality. The data shows that the availability of the review budget is relatively high, so that it has an impact on improving audit quality. This study supports the attribution theory because the availability of the review fund budget is an effort as well

as an essential factor for achieving quality reviews; this can be focused on intrinsic rewards that cannot be changed easily (Meidawati and Assidiqi, 2019).This research is in line with Widyarini and Ratnadi (2016) and Broberg *et al.* (2017), who found that the review fund budget had an effect on audit quality

The results also show that competence moderates the effect of the review stage on audit quality. The data shows that government internal auditors in Riau Province have a fairly high competence. Competence can improve the auditor's ability to understand and carry out all stages of the review. This study supports the theory of attribution that internal attribution is the competence of the auditor to induce action. It also supports(Pinto, Rosidi and Baridwan, 2020)that the implementation of the audit is influenced by competent personnel with adequate expertise and technical training as auditors.

The study also proves that competency also moderates time pressure on audit quality. The time pressure given to the auditor in completing his work reduces audit quality. Support explanation Supriyatin, Iqbal and Indradewa (2019) that auditors with high competence and experience can minimize the effects of audit time pressure. The existence of this time pressure forces internal auditors to complete tasks as soon as possible/according to a predetermined time budget. It can only be done by auditors who have high competence. This research aligns with Bestari and Wahyuni (2023), who found that time pressure and competence affect audit quality.

The study results also prove that competence can moderate the availability of review budgets with audit quality. Anggraini *et al.* (2023) states that the review fund budget has functions, including as a planning tool; the budget functions to plan the resources needed by the organization to achieve the goals that have been set. Auditor competence can increase with the availability of adequate funds. It is a form of self-reward for the auditor in carrying out his work. This study also supports the attribution theory, which states that internal or external attributions can influence individual behaviour. Budget availability is an external attribution that supports the implementation of auditor activities.

Conclusion

From the results of this study, it can be concluded that the stages of the review, time pressure, and review fund budget affect the audit quality of local government internal auditors in Riau Province. Competence can strengthen the effect of review stages, time pressure and review fund budget on audit quality.

The study has several limitations, namely the object of the government's internal auditors in Riau Province only, so this research cannot be generalized to a broader area. As a result, additional research to broaden the subject area is advised. This study also only analyzes three variables influencing audit quality, while many other variables need to be considered in determining audit quality, such as audit committees and audit team characteristics (Al-Taee and Flayyih, 2023)

The study lends empirical evidence to the attribution theory (Heider, 1958), which holds that both internal and external variables can impact individual behavior, which impacts the results of his work. Practically speaking, local governments must pay attention to the availability of adequate review budgets and can conduct training to improve auditor competence to improve the quality of government financial report audits.

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Foreign Direct Investment and Indian Economy: A Time Series Analysis

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Abstract

Many researchers believe that foreign direct investments can be beneficial to the economic development of countries. The relationship between foreign direct investment (FDI) and economic growth is a subject that includes many theoretical and empirical studies in the economic growth literature. But the truth is that it is not easy to draw conclusions. There are many factors that determine the growth and development of foreign direct investments. Therefore, it is important to remain neutral when discussing the role of foreign direct investment in economic growth because there are studies that reveal a positive relationship between foreign direct investment and economic growth. Theoretically, economic growth can lead to foreign direct investment inflows, and foreign direct investments can stimulate economic growth. The flow of foreign direct investment to developing countries raises the question of the relationship between foreign direct investment and development. Although there is significant evidence on the link between foreign direct investment and economic growth, the relationship between them has not been investigated with a systematic approach. This research article contributes to the literature by identifying the existence and nature of these relationships. The purpose of this article is to investigate the relationship between foreign direct investment inflows and economic growth using a time series analysis for the period of data collected from 1990 to 2022. The findings show that there is a positive relationship between foreign direct investment and economic growth in India.
Keyword: FDI, GDP, OLS, INDIA
JEL Classification: F21, E01, C21

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Introduction

FDI stands for Foreign Direct Investment, which refers to the investment made by a company or individual in one country into business interests located in another country. This investment could take the form of establishing new facilities, acquiring a stake in an existing business, or providing capital to help a business expand its operations. FDI is an important driver of economic growth and development in many countries, as it can bring in new technologies, management expertise, and access to global markets. It also creates job opportunities and can lead to the transfer of skills and knowledge. Governments often encourage FDI by offering incentives such as tax breaks, streamlined regulations, and infrastructure support. However, FDI can also be a source of controversy, as it may lead to concerns about loss of domestic control over key industries and resources. Foreign direct investment (FDI) is a crucial component of the global economy, and it involves a long-term relationship between the investor and the foreign country. Here are some key points to understand about FDI:

Types of FDI: FDI can be categorized into two main types - Greenfield investment and Mergers & Acquisitions (M&A). Greenfield investment involves establishing new facilities or expanding existing ones in a foreign country, while M&A involves acquiring or merging with an existing company in a foreign country.

Benefits of FDI: FDI brings various benefits to both the investing company and the host country. For the investing company, it provides access to new markets, resources, and

strategic assets. For the host country, FDI can lead to job creation, technology transfer, infrastructure development, and increased export opportunities.

Factors influencing FDI: Several factors influence the flow of FDI, including market size, labor costs, political stability, infrastructure, regulatory environment, and access to skilled labor. Additionally, economic policies and trade agreements can also impact FDI inflows.

FDI regulations: Many countries have specific regulations and policies governing FDI. These regulations may include restrictions on foreign ownership in certain industries, requirements for local partnerships, and incentives to attract FDI.

FDI and economic development: FDI is often seen as a catalyst for economic development in host countries. It can contribute to the transfer of technology, knowledge, and skills, which can enhance productivity and competitiveness in local industries.

Challenges of FDI: While FDI brings numerous benefits, it can also pose challenges such as potential exploitation of natural resources, loss of domestic control over key industries, and concerns about labor standards and environmental impact. Overall, FDI plays a significant role in the global economy and it is a key driver of international business expansion and economic growth. Inflows and outflow FDI are closely monitored by governments and international organizations.

Foreign Direct Investment in India

India has been a major recipient of foreign direct investment (FDI) in recent years, and the country has implemented several policy reforms to attract more FDI inflows. Here are some key points about FDI inflow in India:

Growth in FDI: India has witnessed a significant increase in FDI inflows over the past few years. The government has been actively promoting India as an attractive destination for foreign investment, leading to a rise in FDI across various sectors.

Sectors attracting FDI: FDI inflows in India have been prominent in sectors such as services, computer software and hardware, telecommunications, trading, construction development, automobile, and pharmaceuticals. Additionally, the government has also encouraged FDI in sectors like defense, insurance, and retail through policy reforms.

Policy reforms: The Indian government has implemented several policy reforms to liberalize and simplify the FDI regime. These reforms include raising FDI caps in various sectors, easing entry and exit norms for foreign investors, and improving the ease of doing business in India.

Bilateral investment treaties: India has signed bilateral investment treaties (BITs) with many countries to provide protection and promote investment flows. However, in recent years, India has been revisiting its BITs and negotiating new agreements to align with its evolving economic and legal framework.

Challenges: Despite the growth in FDI, India still faces challenges such as bureaucratic hurdles, complex regulatory processes, and concerns about legal and policy stability. These challenges can sometimes deter foreign investors from making long-term commitments.

Source countries: Traditionally, Singapore, Mauritius, the Netherlands, the United States, and Japan have been among the top sources of FDI inflows into India. These countries have been significant contributors to FDI due to factors such as favorable tax treaties, ease of doing business, and strong economic ties.

Greenfield vs. M&A: While mergers and acquisitions (M&A) have historically dominated FDI inflows into India, there has been a growing trend of Greenfield investments in recent years. Greenfield investments involve establishing new facilities or expanding existing ones, indicating a long-term commitment by foreign investors.

Impact of COVID-19: The COVID-19 pandemic had a temporary impact on FDI inflows into India, with a slowdown in the first half of 2020. However, as economic activities began to recover, FDI inflows gradually picked up, demonstrating resilience and continued

interest from foreign investors.

Focus on technology and innovation: There has been a noticeable shift in FDI inflows towards technology and innovation-driven sectors such as e-commerce, digital payments, artificial intelligence, and renewable energy. This reflects the increasing emphasis on cutting-edge technologies and sustainable practices.

Regional distribution: While major cities like Mumbai, Delhi, and Bangalore have traditionally attracted substantial FDI inflows, there is a growing trend of investment spreading to other regions of India. States such as Gujarat, Andhra Pradesh, Tamil Nadu, and Maharashtra have also been successful in attracting FDI through proactive policies and infrastructure development.

These trends highlight the evolving nature of FDI inflows in India and the changing preferences of foreign investors as they seek opportunities in various sectors and regions across the country. Overall, India continues to be an attractive destination for FDI, and the government's ongoing efforts to improve the investment climate are expected to further enhance the country's appeal to foreign investors.

Regulatory Framework for FDI in India

The Companies Act, 1956 regulates the registration and operations of domestic and foreign companies. The Indian Companies Act, 1932 and Competition Act, 2002, Foreign Exchange Act, 1999 and various other tax and intellectual property laws and regulations are applicable to any business operating in India. Authorization of the Reserve Bank of India and other foreign direct investment regulations. Under the foreign direct investment policy, businesses that do not allow 100% foreign direct investment can establish a full stock exchange. Foreign direct investment can be freely repatriated. Foreign direct investment is directly regulated by the Department of Investment through the Department of Investment and Promotion (DIPP). SIA) and Foreign Investment Promotion Board (FIPB). Since November 2012, 100% foreign direct investment has been allowed in many retail markets. However, the government has not yet reached an agreement on this issue. Projects that allow 100% FDI are approved under various laws and other conditions, similar to projects where FDI is restricted, before FIB approval is required. India restricts investments by companies or citizens of certain countries. Pakistani citizens or organizations established in Pakistan are not allowed to invest in India. Bangladesh Nationals are registered entities that allow Bangladeshi citizens to invest with government approval. Investment and distribution are permitted to non-residents of India and citizens of Nepal and Bhutan in Nepal and Bhutan if the investment is freely settled in foreign currency from bank accounts. India has signed 60 investment agreements in both defense companies and defense sectors.

Relation between FDI and Economic Growth

The relationship between Foreign Direct Investment (FDI) and economic growth is a topic of significant interest and debate among economists and policymakers. Here are some key aspects of the relationship between FDI and economic growth:

Capital Inflows: FDI involves the transfer of capital from one country to another for the purpose of establishing or acquiring productive assets, such as factories, technology, or infrastructure. When foreign companies invest in a host country, they bring in capital, technology, and managerial expertise, which can contribute to the expansion and modernization of the host country's economy.

Technology Transfer and Knowledge Spillovers: FDI can facilitate the transfer of advanced technologies, management practices, and skills from multinational corporations to domestic firms. This transfer of knowledge can lead to productivity gains, innovation, and the development of new industries within the host country, contributing to long-term economic growth.

Job Creation and Human Capital Development: FDI inflows often lead to the

creation of employment opportunities within the host country. This can help reduce unemployment and underemployment, leading to higher incomes and improved living standards for the local population. Additionally, exposure to international best practices and training provided by foreign companies can contribute to the development of human capital in the host country.

Linkages and Spillover Effects: FDI can stimulate linkages between foreign and domestic firms, suppliers, and service providers, leading to positive spillover effects throughout the local economy. This can result in increased demand for local goods and services, enhanced productivity, and the development of local supply chains, all of which can contribute to economic growth.

Market Access and Export Promotion: FDI can provide access to new markets for domestic firms through partnerships with foreign investors or by integrating into global value chains. This can lead to increased exports, foreign exchange earnings, and improved competitiveness in international markets, thereby contributing to economic growth.

It's important to note that while FDI has the potential to promote economic growth, its impact can be influenced by various factors such as the host country's institutional environment, regulatory framework, infrastructure, human capital, and macroeconomic stability. Additionally, the quality of governance, the absorptive capacity of the economy, and policies related to trade, investment, and technology transfer play crucial roles in determining how FDI contributes to sustained economic growth.

FDI and the growth of economy are interrelated and interdependent. The benefits of FDI are numerous. Most empirical studies distribute that FDI help in the integration in to global economy and help in gaining access to a weather global and better platform in the world economy. FDI can enormously benefit the host country and GD of the country by contribution of economic growth of the country. Overall, FDI can be a catalyst for economic growth by bringing in capital, technology, skills, and market access. However, its potential benefits depend on how effectively a country leverages FDI to enhance its productive capacity and competitiveness

Table 1: Economics Profile of India

Economic indicators	Millions of US$ unless otherwise specified			
	2005	**2010**	**2015**	**2022**
GDP, current	823612	1669620	2146759	3483536
GDP per capita, current US$	71 3	134 6	162 3	245 8
Real GDP growth, y-on-y, %	7.9 2	8.5 0	8.0 0	6.5 6
Current account balance, % of GDP	1.2 5	3.2 7	1.0 5	2.3 1
Exchange rate (/US$)	44.1 00	45.7 26	64.1 52	78.6 04
Financial flows	Millions of US$ unless otherwise specified			
FDI inflows	7 621.77	27 417.08	44 064.10	49 354.61
FDI outflows	2985.49	15 947.43	7 572.42	14 543.10
Personal remittances, % of GDP	2.6 9	3.2 0	3.2 1	NA

Source: UNCTAD Country Report

Figure 1: Trend of FDI Inflows and Remittance received
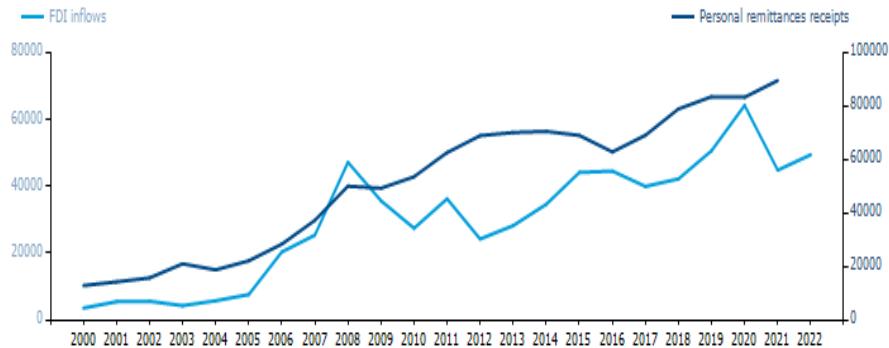
Figure 2: Year Wise Trend of FDI Inflows and Total GDP
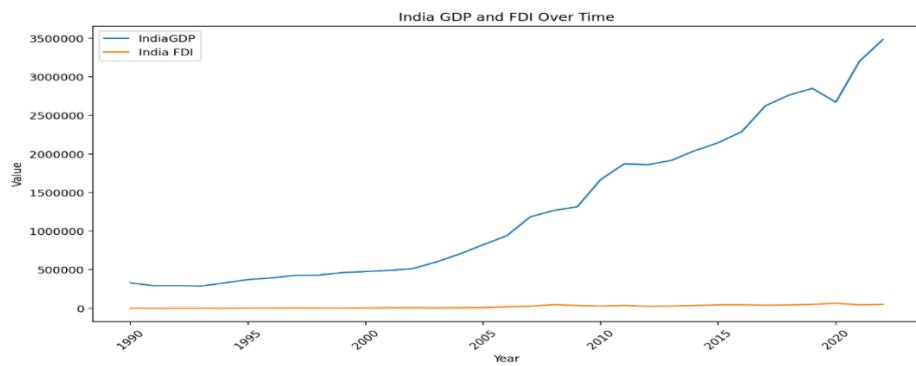
'India GDP' shows a general upward trend over the years, indicating economic growth. 'India FDI' also shows an increasing trend, with some fluctuations, suggesting growing foreign investment interest in India. Both trends are consistent with a developing economy that is attracting foreign investment and experiencing GDP growth. The log transformation of the 'India GDP' and 'India FDI' time series has been plotted. This transformation is often used to stabilize the variance across time in time series data.

Figure 3: Year wise trend of Log Transformed FDI Inflows and GDP

19
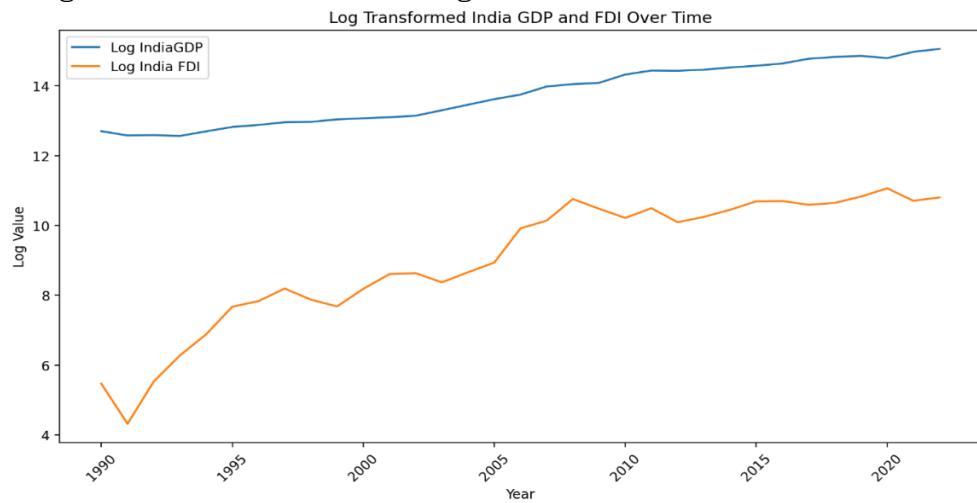
Literature Review

Number of studies have been conducted by various researcher on the issue of Foreign Direct Investment and Economics Growth. Klaus E Meyer and et. al. (2005) in their research work "Foreign direct investment in Emerging market: A comparative study in Egypt, India, South Africa and Vietnam" policy prevailing in the host countries lay an important role in determining the FDI inflows. Iyare Sunday O, BhaumikPradip K, BanikArindam (2004) in their study "Explaining FDI inflow to India, China and Caribbean: An Extended Neighborhood Approach" find the economic indicators like market size, export intensity, institutions etc play an important role in attracting FDI inflows. Anderson P S and et el (2004) in study on Foreign Direct Investment and Employment in Industrial Countries" found that direct relationship between FDI and employment also found that direct relationship between FDI and high labor cost. Ray Surbpriya studied on topic of "Impact of FDI on economic Growth in India: A Co Integration Analysis" concluded that there is unidirectional causality between FDI and Growth in India. Chew Ging Lee (2009) in his study "Foreign Direct Investment, Pollution and Economic Growth" finding of this study are that bidirectional causality exists, between FDI and Growth in Malaysia.

Thus, the study attempts to address the objectives viz. i) To find the causal relationship between FDI and Economic Growth in India; ii) To study the trends in FDI in India.

Database and Methodology

The data are collected on secondary basis for the country India. The annual data on FDI and GDP per capita in US million dollars are collected from UNCTAD database from 1990 to 2022. The first objective is completed in three steps: (1) test for stationary; (2) test for cointegration; and (3) test for direction of causality. We conduct these three tests at the individual. To achieve second objective study used available literatures and based on journals, websites.

Unit Root Test

A unit root test is a statistical method used to determine whether a time series variable is stationary or non-stationary. Initially we have performed Unit Root at levels and then in first difference form. A stationary time series is one whose statistical properties, such as mean and variance, do not change over time. Non-stationary time series, on the other hand, exhibit trends, cycles, or other forms of long-term dependence that make their statistical properties change over time.

The most popular method for Unit Root Test is Augmented Dickey-Fuller (ADF) test The ADF test involves estimating a regression model that includes lagged values of the time series variable and then testing whether the coefficient on the lagged variable is significantly different from zero. If the coefficient is found to be statistically significant, it suggests the presence of a unit root and non-stationarity in the time series.

$Y_t = \rho Y_{t-1} + U_t$

$Y_t - Y_{t-1} = \rho Y_{t-1} - Y_{t-1} + U_t - U_{t-1}$

$\Delta Y_t = (\rho - 1) Y_{t-1} + V_t$

$\Delta Y_t = \delta Y_{t-1} + V_t$

$H_0: \delta = 0 \quad H_a: \delta > 0$

Co-integration

The concept of co-integration was first introduced into the jargon of econometrics by Granger (1980). The Johansen cointegration test is a statistical method used to assess the presence of cointegration among multiple time series variables. Cointegration is a concept in time series analysis that relates to the long-term equilibrium relationship between variables that may individually be non-stationary. In other words, cointegrated variables move together in the long run, despite potentially exhibiting short-term fluctuations. It is an extension of the Engle-Granger two-step cointegration test. It allows

for the analysis of cointegration in systems with more than two variables, making it particularly useful for multivariate time series data.

The test is based on the estimation of vector autoregressive (VAR) models and involves examining the rank of the cointegrating matrix, which represents the number of cointegrating relationships among the variables in the system. The cointegrating matrix captures the linear combination of the variables that are stationary, indicating their long-term equilibrium relationship.

Granger-Causality Test

The Granger causality test is a statistical method used to determine whether one time series variable can be used to predict another. It is named after Clive Granger, a Nobel Prize-winning economist who developed the test. The test is widely used in econometrics and time series analysis to explore causal relationships between variables.

The concept of Granger causality is based on the idea that if one variable, FDI, can be used to predict another variable, GDP, then FDI is said to "Granger-cause" GDP. The test helps to assess whether there is a causal relationship between two variables in the context of time series data.

The test involves estimating two regression models:

$GDP_t = a_1 + \sum \alpha_{1i} FDI_{t-i} + \sum \beta_{2i} GDP_{t-i} + U_{1t}$

$FDI_t = a_2 + \sum \beta_{1i} GDP_{t-i} + \sum \alpha_{2i} FDI_{t-i} + U_{2t}$

$H_0: \alpha_{2i} = \beta_{2i} = 0 \quad H_a: \alpha_{2i} = \beta_{2i} > 0$

Result and Discussion

Country-wise FDI Inflows in India

The country wise FDI inflow in India data shown that Mauritius contributing maximum in overall financial year and after Mauritius the Singapore contributed 11% followed by U.K. with 9%. Japan and USA have contributed 7% and 6% respectively as Foreign Direct Investment in India. It notably that there is only marginal 1% differences between contribution of countries like Japan, USA, Netherland, Cyrus, Germany, France and UAE in India with 7%,6%,5%,4%,3%,2%, and 1% respectively.

Table 2: Country-wise FDI Inflows in India

Rank	Country	% of total FDI inflows
1	Mauritius	38
2	Singapore	11
3	U.K.	9
4	Japan	7
5	U.S.A.	6
6	Netherland	5
7	Cyprus	4
8	Germany	3
9	France	2
10	U.A.E.	1
Total		83

Source: FDI Statistics, Department of industrial policy and promotion, Ministry of Commerce and Industry, Govt of India

Sector-wise FDI inflows in India

The Table 3 revealed that India receive maximum FDI inflows in service Sector which is accounted 21% of total inflows of FDI in India after that computer Hardware and Software, Telecommunication and Housing real Estate contributed 9%, 8%, and 7% respectively which is significant in inflows of FDI in India and Chemical & petroleum receive only about 2% each.

Table 3: Sector-wise FDI Inflows

Sector	% of FDI Inflows
Service Sector	21
Computer Hardware& Software	9
Telecommunication	8
Housing and Real Estate	7
Construction activity	7
Power	4
Automobile Industry	4
Metallurgical industry	3
Petroleum & Natural Gas	2
Chemicals	2

Source: FDI Statistics, Department of industrial policy and promotion, Ministry of Commerce and Industry, Govt of India

To analyzed the study first applied correlation to know the relationship between FDI and GDP for 33 years. The result of correlation shows that FDI is highly positively correlated with GDP in India as economic theory also suggest that FDI is primarily depend upon economic growth on country. The correlation result shown in Table 4.

Table 4: Correlation between FDI and GDP

		FDI	GDP
Karl Pearson Correlation Test	FDI	1	0.92
	GDP	0.92	1
Sig. (1-tail)	FDI		0.0024
	GDP	0.0024	
N	FDI	33	33
	GDP		

Source: Authors Compilation

Secondly, the stationarity test was performed on the log-transformed data to determine if the time series is stationary, which is a common assumption in many time series analysis methods. Proceeded with the Augmented Dickey-Fuller (ADF) test, a widely used statistical test for stationarity.

- For 'Log India GDP':
- ADF test statistic: 0.5383
- p-value: 0.9860
- Critical values: {1%: -3.6535, 5%: -2.9572, 10%: -2.6176}
- For 'Log India FDI':
- ADF test statistic: -1.8084
- p-value: 0.3763
- Critical values: {1%: -3.6535, 5%: -2.9572, 10%: -2.6176}

The p-values for both 'Log India GDP' and 'Log India FDI' are greater than the common significance level of 0.05, which suggests that we cannot reject the null hypothesis of non-stationarity for both series. The test statistics are also higher than the critical values, further supporting the non-stationarity conclusion.

This indicates that the time series may require differencing or other transformations to achieve stationarity, which is often a prerequisite for many time series forecasting methods.

Augmented Dickey-Fuller Test: Differenced Log India GDP
ADF test statistic -5.00233875957974 p-value 0.003 lags used 0.0 observations 31.0
Critical value (1%) -3.661428725118324 critical value (5%) -2.960525341210433 critical value (10%) -2.6193188033298647

Augmented Dickey-Fuller Test: Differenced Log India FDI
ADF test statistic -6.422744402576733 p-value 0.006 lags used 0.0 observations 31.0
Critical value (1%) -3.661428725118324 critical value (5%) -2.960525341210433 critical value (10%) -2.6193188033298647

After differencing, both the 'Differenced Log India GDP' and 'Differenced Log India FDI' series have ADF test statistics that are significantly lower than the critical values, and the p-values are close to zero. This suggests that the differenced series are stationary, and we can reject the null hypothesis of non-stationarity for both series. This is a good indication that the data is now suitable for time series forecasting models that assume stationarity.

Figure 4: First Difference Log Transformed trend of FDI Inflows and GDP
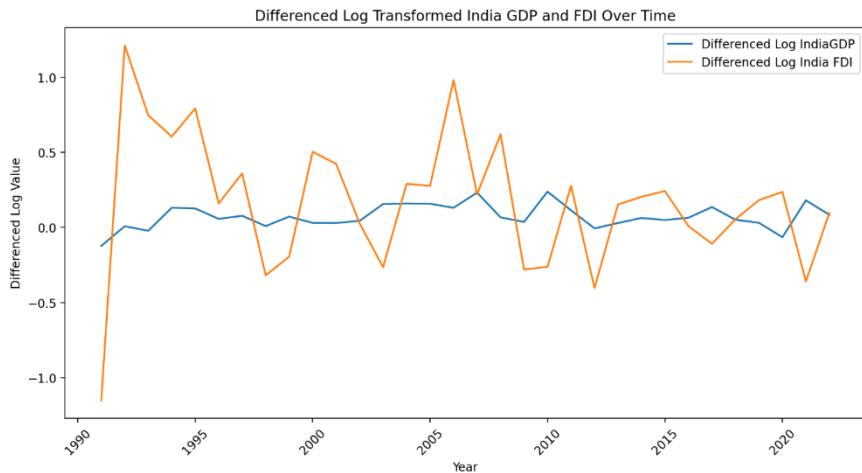
The first-order differencing of the log-transformed 'India GDP' and 'India FDI' time series has been plotted. This is a common method to remove the trend and make a time series stationary.

After conducting stationarity tests on log-transformed 'India GDP' and 'India FDI' time series, we apply granger casualty test to know the any short run relationship between the FDI and GDP and vice versa.

Table 5: Pairwise Granger Causality Tests (Lags 2)

Pairwise Granger Causality Tests
Date: 12/18/23   Time: 12:29
Sample: 1990 2022
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
LINDIAGDP does not Granger Cause LINDIAFDI	31	7.89757	0.0021
LINDIAFDI does not Granger Cause LINDIAGDP		1.72557	0.1978

Source: Authors Compilation

Table 6: Pairwise Granger Causality Tests (Lags 3)

Pairwise Granger Causality Tests
Date: 12/18/23 Time: 12:30
Sample: 1990 2022
Lags: 3

Null Hypothesis:	Obs	F-Statistic	Prob.
LINDIAGDP does not Granger Cause LINDIAFDI	30	5.22471	0.0067
LINDIAFDI does not Granger Cause LINDIAGDP		2.07795	0.1310

Source: Authors Compilation

The Granger causality test results indicate that we fail to reject the null hypothesis at a 5% significance level at lag 2 and lag 3. This means that based on the data and the model fitted, there is not enough evidence to conclude that 'India FDI' Granger-causes 'India GDP'. However, p value shows that there is short run relationship between India GDP and India FDI as we do reject the null hypothesis of therefore, we conclude that 'India GDP' Granger-causes 'India FDI'. It means there are unidirectional relationship between Economic Growth to Foreign Direct Investment.

As the study is not able to establish bi-directional relationship between FDI and GDP for the India in Granger Causality Test we applied, now we will apply The Johansen cointegration test to know any long tern relationship between the two variables.

Table 7: Johansen Cointegration Test

Date: 12/18/23   Time: 12:30
Sample (adjusted): 1992 2022
Included observations: 31 after adjustments
Trend assumption: Linear deterministic trend
Series: LINDIAFDI LINDIAGDP
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.639763	33.54522	15.49471	0.0000
At most 1	0.059281	1.894423	3.841465	0.1687

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.639763	31.65080	14.26460	0.0000
At most 1	0.059281	1.894423	3.841465	0.1687

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I):

LINDIAFDI	LINDIAGDP
-1.404638	2.028563
0.921789	-2.891689

Unrestricted Adjustment Coefficients (alpha):

D(LINDIAFDI)	0.308051	0.017828
D(LINDIAGDP)	-0.017621	0.015838

1 Cointegrating Equation(s):	Log likelihood	40.20642

Normalized cointegrating coefficients (standard error in parentheses)

LINDIAFDI	LINDIAGDP
1.000000	-1.444189
	(0.13413)

Adjustment coefficients (standard error in parentheses)

D(LINDIAFDI)	-0.432701
	(0.06555)
D(LINDIAGDP)	0.024751
	(0.01794)

Source: Authors Compilation

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The Johansen cointegration test results indicate that at lag 1, both the trace statistic and the maximum eigenvalue statistic are greater than the 99% critical value, suggesting that there is cointegration at this lag level. At lag 2, the statistics are also above the 99% critical value, further supporting the presence of cointegration between the series. This implies that there is a long-term equilibrium relationship between the differenced log-transformed GDP and FDI series.

Conclusion

FDI in India is increased dramatically after 2001. Furthermore, the policymaker of most of countries emphasis on attracting FDI nowadays and economic rational also indicate that Foreign Direct Investment is important tool to bring foreign technologies for Economic Growth. Present study explores the empirical relationship between FDI and growth of Indian Economy over the period 1990- 2022 and study reveals that FDI is highly and positively correlated with GDP, the economic theory also indicates that Economic growth is depending upon policies to promote FDI. FDI inflows are an affirmation of the economic policies that policymaker has been implementing to attract global companies to invest in India and it's also a stamp of approval of the future economic health of India. Future research, when more data become available, could examine possible causality effects between FDI and the host country's growth.

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Operational Performance of Punjab National Bank Post Mega Merger 2019: A Descriptive Study

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Abstract

Merger refers to the mechanism of combining two or more corporation to continue future operation as a single entity. Like Merger & Acquisition in other sector, banking sector also has list of mergers that took place in PSBs, Private banks, Foreign banks as well as Regional Rural Banks. Since Independence till date India has listed number of bank mergers which were mostly done to improve operating efficiency, governance, accountability, creating strong & globally competitive banks as well as to check on NPA of banks. On 30th August 2019, present Finance Minister Nirmala Sitharaman announced the mega merger plan of merging 10 PSBs into 4 PSBs with a motive of creating fewer but stronger globally competitive lender to boost economic growth. This paper attempts to study the present status of the merger decision by primarily focusing on operational performance of PNB, one of the anchored banks post merger. The operational performance of PNB has been examined with selective accounting ratios to trace the status of the merger plan. Based on the analysis, this paper concludes that the mergers of banks are successful and beneficial for selected anchored bank and resulted in significant improvement in operational aspect of bank.

Keywords: *Merger and Acquisition, Corporate restructure, PSBs, PNB, Operational Performance*

JEL Classification: G34

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Introduction

The banking sector of a country is considered as an integral part of country's financial system. It is said that a country's economy revolves around its banking system. It is said that stronger the banking system stronger the backbone of the country which leads to economic growth and development at a higher rate. The financial and technological environment of India is too dynamic to understand. With all these challenges Indian banks have proven to be resilient to all local and global economic downturns. As the level of globalization increases, business risk, uncertainty and changes has forced firms to consider the adoption of sustainable development strategies to survive competitively. Merger and Acquisition is regarded as one of such strategies to penetrate new markets and gain the existing customer base of target bank along with greater technological capabilities. Mergers and Acquisitions have become a major way of corporate restructuring throughout the globe. For accelerating the performance of banking industries and reducing the NPA stress, merger of banks has become popular growth strategy.

Though merger and acquisition in Indian Banking system has gained focus in recent years but the first merger in Indian Banking system happened during pre-independence period in the year 1921 when three Presidency banks namely Bank of Bengal, Bank of Bombay and Bank of Madras merged together and formed Imperial Bank of India which is later named as the State Bank of India. Post independence period the banking sector of India witnessed several mergers and acquisitions that took place among Public Sector Banks, Private sector banks, Foreign Banks. Most of those merger and acquisition happened either to consolidate loss making banks with profit making banks or

to gain greater market share in terms of customer base and total business. The act of merger and acquisition in PSBs has constantly reduced in the number of PSBs in operation to improve their operational efficiency. Among the history of merger and acquisition in Indian Banking, the most recent and mega merger was announced on 30th August 2019 by Finance Minister of India Nirmala Sitharaman which resulted in reduction of 10 PSBs into 4 PSBs. Mega Merger plan of 2019 includes Canara Bank, Syndicate Bank, Indian Bank, Allahabad Bank, Punjab National Bank, Oriental Bank of Commerce, United Bank of India, Union Bank of India, Andhra Bank, Corporation Bank with the primary objective of "strong national presence and global reach"-as stated by Finance Minister. These 10 banks were merged into 4 banks with effect from 1st April 2020 as given below:

Table 1: Anchor Banks and Amalgamating Banks

Sl No	Anchor Banks	Amalgamating Banks
1	Canara Bank	Syndicate Bank
2	Indian Bank	Allahabad Bank
3	Punjab National Bank	Oriental Bank of Commerce and United Bank of India
4	Union Bank of India	Andhra Bank and Corporation Bank

Source: Authors Compilation

With this mega merger total numbers of PSBs in India come down from 27 in 2017 to 12 effectives from 1st April 2020. Though at individual level all the amalgamating banks have their own reason behind merger but common objectives as stated by the RBI behind this mega merger is to revamp India's banking system by creating global, robust and well-funded banks. The reasons which have forced the mega merger of banks can be listed as below:

a) Controlling the weight of mounting bad loans over the years as acquisition will merge the assets and liabilities of all the banks in merger which ultimately help to nullify NPA of small PSBs.

b) Boosting the national presence of banks along with global reach and making them globally competitive is another reason behind unveiling the mega merger plan

c) Merger of these PSBs ultimately enhance the capacity of increasing credit and lowering lending cost

d) Mega merger drive is expected in creation of NextGen banks with more technological upgradation and improved ability to raise market resources.

Profile of Punjab National Bank

Punjab National Bank (PNB) is India's first Swadeshi Bank commenced its operations on April 12, 1895 in Lahore. The bank was established by the spirit of nationalism and purely managed by Indians with Indian Capital. The first branch outside Lahore was opened in Rawalpindi in 1900. The period from 1926-36 was turbulent and loss ridden for the entire banking industry across globe due to Great Economic Depression 1929. Years from 1941 to 1946 were ones of unprecedented growth for PNB, from a modest base of 71 the number of branches increased to 278. On 31st March 1947, the bank officials decided to leave Lahore and transfer the registered office of the Bank to Delhi and permission from such transfer was receive from Lahore High Court on June 20,1947.

The bank's Mission is to offer quality financial services by leveraging technology to create value for customers and other stakeholders, opportunities for employees and thus, contributing to the economic growth of nation. The bank Vision to be a globally trusted banking partner through customer centric innovations, empowering employees and enriching lives of all stakeholders.

PNB has established itself firmly as one of the premier banking institutions in the

country with a long tradition of sound and prudent banking. During the long history of the Bank, 9 banks have been merged/amalgamated with PNB. Till the end of September 2023, the bank has total 51,519 delivery channels with a network of 10,092 domestic branches, 2 International branches, 12,645 ATMs & 28,782 business correspondents. During 128+ long journey of the Bank it has acquired Bhagwan Dass Bank Ltd. in 1939, amalgamated Indo-Commercial Bank in 1960 in a rescue, acquired Hindustan Commercial Bank Ltd. in a rescue in 1988 and in 1993 it has acquired New Bank of India which was nationalised in 1980 and took over the oldest private sector bank in Kerela Nedungadi Bank in 2003. With all these it has expanded both nationally and globally the bank's business. After the recent mega merger of Punjab National Bank with Oriental Bank of Commerce and United Bank of India, PNB has become the second largest Public Sector Bank in the country with Global gross business at ₹22,51,631 Crore.

Literature Review

Several academics studies relating to bank mergers attempted to examine mostly two issues: first, the impact of bank mergers on operating performance and efficiency of banks and second, impact of such consolidations on market value of equity. Improvement of operational and distribution efficiency of commercial banks has always been an issue which seeks attention of the regulatory authorities.

Dilshad (2012) in his study examines the efficiency of market with respect to announcements of mergers and acquisitions using an event study methodology. Evidence of excess returns after the merger announcement was also observed along with the leakage of information that resulted in the rise of stock prices few days before the announcement of merger or acquisition. Meena and Kumar (2014) in their research have concluded that overall result of merger led to higher level of cost efficiencies for the merging banks. The forced merger among these banks helps in protecting the interest of depositors of weak banks but didn't yield any gain for stakeholders of the banks. They have suggested government and policymakers to take precautions before considering and promoting merger as a way to reap economies of scale. Sharma and Sidana (2017) in their paper expressed the impact of SBI merger on financial condition of SBI. The SBI will get visibility at global level in the network increase of SBI & it is also able to provide cheaper funds more easily. The gross & net NPA of SBI it will come down after merger with their associate. The efficiency & effectiveness of the business it will increase because of single management. Nanda and Goswami (2020) in their study stated that the track record of merger and acquisition in Indian banking have been fruitful so far for the economy but at individual level it has not been that good. Many have stated various arguments in favors and against the merger drive. Literature so far review conclude such of those arguments which were in favor as (1) Large capital base of merged banks will help in disbursing larger number of loans of higher magnitude; (2) Cost reduction through operational efficiency; (3) Reduction in the need for recapitalization from the Government and (4) More scope for better adoption of Technology. And arguments against bank merger were listed as (1) Difficulties of management of human resources, (2) Few large interlinked banks expose the broader economy to enhanced financial risks and (3) Local identity of small banks will be lost. The evidence of previous bank mergers failings to secure the expected benefits have been cited by critics of the present merger of banks by the Government. Thus, the present study has been conducted with the primary objective of ascertaining operational performance of Punjab National Bank post-merger period of 2020-21 to 2022-23.

Database and Methodology

This is basically a descriptive study constructed by using secondary data such as annual reports of selected anchored bank post-merger, research articles, journals, newspaper article etc. This study basically considered the operational performance of PNB

post-merger.

Operational Performance of Punjab National Bank Post Merger

To determine the operational performance of Punjab National Bank post-merger the annual reports of PNB post merged period have been used to collect the necessary information. Starting from Chairman's message to all other consecutive reports has implied a positive impact of the merger. According to the reports, the mega merger proved to be beneficial for all the stakeholders. With greater customer base and market share, mega merger of Punjab National Bank with Oriental Bank of Commerce and United Bank of India, has made the anchored bank (PNB) the 2nd largest Public Sector Bank in India. The banking industry, as a whole, posted healthy financials during FY 2022-23 that reflect the resilience and depth of the Indian financial system backed by a robust regulatory framework and adoption of prudent best practices. Post merger period till date Total business of the anchored bank has increased along with increased in total deposits and net advances of the bank. Current Account and Saving Account deposits (CASA) have also increased for the last three financial year which also indicate increasing customer base. During FY 2020- 21, CASA Deposits also remained second highest amongst PSBs with 45.5 per cent share in Domestic Deposits. PNB's low-cost franchise remained robust with the Domestic CASA share at 47.43% during FY 2021-22 with an improvement of 195 bps over last year. The global cost of deposit was contained at 3.99% in FY 2021-22. The PNB is undergoing digital transformation like pre-approved Personal Loan, e-One Time Settlement, e-Overdraft against Fixed Deposit, e-Mudra to serve it customer better and more conveniently. During the FY 2022-23, the PNB's Gross Global Business reached ₹21.66 lakh crore. The CASA share stood at 43% of domestic deposits.

Table 2: Operational Performance of the Post-Merger

Punjab National Bank	2020-21 (₹ in crore)	2021-22 (₹ in crore)	2022-23 (₹ in crore)
Total Business	18,45,739	19,31,322	21,65,844
Total Deposits	11,06,332	11,46,219	12,81,163
CASA	4,17,236	5,33,654	5,38,015
Net Advances	6,74,230	7,28,186	8,30,834
Operating Profit	22,159	20,762	22,529
Net Profit	2022	3457	2,507
Net Interest Income	30,477	28,694	34,492
NPA (Net)	38,576	34,909	22,585
Gross NPA (%)	14.12	11.78	8.74
Net NPA (%)	5.73	4.80	2.72
Net Interest Margin (%)	2.88	2.71	3.06
Cost of Deposits (%)	4.44	3.99	4.10
Cost to Income Ratio %)	47.82	49.38	51.69
RoA (%)	0.15	0.26	0.18
RoE (%)	3.88	5.96	3.94

Source: Compiled from Annual Reports of PNB

For the FY 2020-21, Bank's profitability parameters and ratios remained stable. Bank's Operating Profit was at Rs. 22,980 Crore along with a Net Profit of Rs. 2022 Crore. Return on Assets (RoA) and Return on equity (RoE) stood at 0.15 percent and 3.88 percent respectively during FY 2020-21 The key productivity parameter, Business per employee increased to Rs 1885 lakh in March'21. Similarly, as an indication of improved efficiency, domestic and global Net Interest Margin (NIM) improved to 2.99 percent and 2.88 percent respectively in FY 2020-21. For the FY 2021-22, Bank's profitability parameters and ratios remained stable. Net profit grew by 71%. Return on Assets and Return on Equity improved

to 0.26 per cent and 5.96 per cent respectively during FY 2021-22.

The key productivity parameter, Business per employee increased to Rs. 1941 lakh in 31st March, 2022. Net Interest Income that is the difference between interest income and interest expense of bank. The credit cost of the said bank post-merger has also come down sequentially over the quarters. During the FY 2022-23, the bank recorded double digit growth in both deposit at 11.77% and advances at 12.68 per cent. The operating profit for FY 2022-23 improved by 8.5% in FY 2022-23 and Net Profit stood at ₹2,507 crore. The global Net Interest Margin improved to 3.06% in FY 2022-23. Net Interest Income in the FY 2022-23 stood at ₹34,492 crore compared to ₹28,694 crore during 2021-22 with a growth of 20.2% on a Y-o-Y basis. Return on Assets stand on 0.18% and Return on Equity at 3.94%. Compared to FY 2021-22 the bank has registered lower RoA and RoE in the FY 2022-23, but Operating Profit, Net Profit, Net Interest Margin RoA, RoE, Global Net interest Margin registered a steady Q-o-Q growth over five consecutive quarters. Due to the improved performance of the Bank in FY 2022-23, the Board of Directors has recommended a dividend of 0.65 per equity shares.

During the post amalgamation period the asset quality of PNB has exhibited a phenomenal improvement with both Gross NPA and Net NPA ratios on a declining trend since December 2021. Level of NPAs have seen sequential reduction. Compared to Gross NPA 14.12% in FY 2020-21, PNB records lowest Gross NPA 8.74% in FY 2022-23.Net NPA of the bank has also decreased from 5.73% from 2020-21 to 2.72% in 2022-23.Although PNB's asset quality has seen significant improvement, it remains weaker as compared to peer large PSBs and its return metrics remain subpar as compared to peer large PSBs on account of increase in the operating cost as well has higher credit cost incurred by the bank during FY23.The Provision Coverage Ratio has also increased over successive quarters from FY 2021-22 to FY 2022-23.

Conclusion

The Punjab National bank has over 128 years journey and that has been eventful and challenging, but with its strong founding values, it could overcome difficult times and come out unscathed. The bank which started its journey with pure swadeshi capital of ₹20,000, the Bank's business grew to more than ₹21.66 lakh crore till date. In its long history it has been merged or has acquired many banks to rescue those banks. Initially the news of mega merger of the bank with that of Oriental Bank of Commerce and United Bank of India was not considered as a valued decision by the stakeholders of the merging banks. The FY 2020-21 has been challenging across the globe and India was no exception to that. Despite the unprecedented situation the PNB endured on its growth trajectory with a strengthened organization structure & Balance Sheet, sustained profitability and stable capital position. The impact of COVID-19 has triggered a paradigm shift across globe with an increasing role of digitalization in banking business.

As the pandemic forced bank to re-examine their technology strategies and promoting branchless banking, the PNB has played well in promoting e-banking network for the customers of the PNB as well as merged banks. Along with increasing number of customers post-merger the responsibility of the bank has increased tremendously towards the stakeholders. Assets quality of bank has improved as bank focused on sustainable growth by targeting better rated borrowers with low risk profile. The declining trend of NPA so far is a remarkable achievement of the bank post-merger. Only in three completed fiscal year post merger the banks overall performance has shown improvement and as per the reports of the bank, the bank with its greater & stronger human resource coping up with all the necessary requirements of the RBI and Govt. and working exceptionally to enhance global network of the business which is clearly visible in the last three years report of global total business, global deposits and lending. Post merger operational performance of the bank has followed upward trend since its first amalgamated financial year.

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Moonlighting: The Controversy Among Indian Employees

Dr. Jitender Kumar[1], Simran Sikka[2], and Jyoti[3]

Abstract

The study attempts to determine how moonlighting activities affect employees' performance as well as to pinpoint the variables that most strongly influence this behaviour. There was also research done on how to deal with people who moonlight. Both primary and secondary data are used in this descriptive and informal study. One hundred Delhi-NCR-based teachers who provided the data were surveyed. For this investigation, data was gathered from websites and reports that were already in print. Numerous studies from relevant journals and books have also been used. Correlation and multiple regression analysis were used to analyse the data. The study found a statistically significant relationship between employee performance and moonlighting practises. The findings indicated that, in addition to the financial factors that influence someone's decision to moonlight, the participation of moonlighting due to a person's primary job's shorter working hours may be a symptom of overt or temporally associated underemployment. The study came to the conclusion that excessive bureaucracy, inadequate leadership, and unorganised organisational policies may have been caused by the practise of moonlighting in India. The study recommended, among other things, that controls be put in place for employees to decrease the desire to moonlight and increase commitment to their primary jobs. These controls could include clocking in and out, reporting activities, time allotment for assignments, good pay policies, appealing conditions of service, the ability to access loans at low interest rates, affordable housing programmes, effective transportation systems, and good pay policies.
Keywords: *Moonlighting, Job Satisfaction, primary jobs*
JEL Classification: C12, C3, C8, E2

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Introduction

Moonlighting is the practise of employees working for money at businesses other than their current job. The concept is not mentioned in any of the Indian statutes. However, dual employment law is readily available. Moonlight is originated from the phrase "Moonlighter," which describes someone who works by the light of the moon while doing a second job at night. The American English definition of a "moonlighter" is "one who goes serenading during the moonlight nights." Moonlighting in the workplace is a result of employee dissatisfaction with present pay and income systems. Employers are perceived by employees as taking advantage of them and as profiting from their greater salaries. Nearly all facets of HR management are impacted by side jobs of employees. The difficulty for the people manager is that moonlighting typically has a negative effect. The act of doing a second job after regular business hours is known as moonlighting. In addition to a regular 9 to 5 job as their principal source of income, a person may moonlight by working for another company, generally in the evening or at night.

Legality of Moonlighting
Factory Act: According to Section 60 of the Factories Act, no adult worker shall be required or permitted to work in any factory other than the one in which he or she is now employed, under such circumstances as may be prescribed. The only people covered by this Act are factory workers.

The Tamil Nadu Shops & Establishments Act, 1947: These are the state laws that are now in force and deal with hiring individuals to work in establishments like shops, banks, offices, etc. It is known as The Tamil Nadu Shops & Establishments Act, of 1947, in the Indian state of Tamil Nadu. However, there are no laws that specifically regulate dual work.

Glaxo Laboratories (I) Limited vs Labor Court, Meerut, and others According to the SC, the employer in this case "hardly has any extraterritorial authority." In essence, neither the employer nor his employees should look to him as the guru or mentor for guidance in managing their cultural growth. More than merely moonlighting was involved in this particular instance, and the court's conclusions shed light on how comparable circumstances might be handled by the law.

Effects on Companies

Wipro: As the CEO of Wipro highlighted, there is a lot of discussion about people doing second jobs in the IT industry. To put it simply, he bluntly compared it to lying. Wipro let go 300 workers after realising there was a conflict of interest due to their concurrent employment with other businesses.

Infosys: The Tech Giant has informed its staff that moonlighting could result in termination.

Effect of WFH: According to the experience of another software company, DCX Technologies, employers found it difficult to deal with employees who moonlighted but it didn't have an impact on the company's successful WFH (work from-home) policy.

Moonlighting policy: One of the biggest food delivery businesses, Swiggy, recently implemented a policy allowing its employees to work additional jobs on the side in addition to their full-time jobs.

Review of Literature

Jamal looked into moonlighting among blue-collar workers: Personal, Social, and Organizational Consequences in 1986. The results of the study showed that non-moonlighters substantially more committed to their organisations than moonlighters. This shows that people who moonlight are often less committed to their major companies when working on side jobs.

Khatri et al. (2014) found that employees' organisational commitment and loyalty are unquestionably impacted by moonlighting, which is very common in SME. The study looked at organisational commitment and moonlighting practises of small and medium-sized business (SME) employees in the Delhi-NCR region. There were no discernible changes between the judgments of corporate commitment among moonlighting employees based on gender, according to the analysis.

In 2017, Ashwini et al. investigated middle-level employees' plans to moonlight at certain I.T. companies. They investigated a number of factors that led to the workforce moonlighting and came to the conclusion that without proactive retention rewards for the devoted, experienced workers, they lost organisational commitment and took up second employment to fulfil their personal objectives.

According to all the studies on organisational commitment and moonlighting practises that have been reviewed, employees, regardless of their demographic backgrounds, tend to lose organisational commitment and hold secondary or multiple jobs if organisations do not make provisions for appropriate retention and recognition benefits.

The objectives of the Study are i) To ascertain the primary influencing elements of moonlighting.; ii) To ascertain how moonlighting affects an employee's performance; and iii) To make recommendations for how to cope with moonlighting behaviour

Database and Methodology

The primary goal of the study is to ascertain the impact of moonlighting on employee performance at the educational institution, hence the study's design is descriptive and causal in nature. Purposive sampling was utilised to get the data from teachers of schools who reside in Delhi-NCR, with a sample size of 100. Both data sources were used in the study. The respondents from the chosen educational institution were surveyed for the primary data, while secondary data was gathered through reports, articles, websites, etc. The two variables in the current study are employed performance at work, which is a dependent variable, and moonlighting habits, which is an independent variable. Correlation analysis and multiple regression analysis have been used to analyse the data.

Objective 1— To identify the factors that influence moonlighting most.
Plan B: This is typically used as reason for taking up a second job. Some people choose to pursue a second career as a backup if they are uncomfortable in their existing positions.
Multiple sources of income- There is always a need for extra cash, which is perhaps what drives many to moonlight.
Paying off debt- Many people rely on moonlight to pay off debt. Employees may still owe money on loans for a car, laptop, or house from before the outbreak. With a second job, they could pay for it.
Change of career- People moonlight as a side job to get the experience they need to later land lucrative employment in the chosen business if they don't already have a formal grounding in it.
*Creativity-*Many people continue working in unfulfilling jobs only to maintain their financial security. Many people turn to side jobs as a method to keep their thoughts engaged and stay on top of their game when daily living prevents them from using their creativity. Employees who take on a part-time second job occasionally get the push they need to ignite their creative side.
Objective 2 - To find out impact of moonlighting on employee performance

Research Hypothesis

H_0: Employee performance is not statistically significantly impacted by moonlighting practises.
Dependent variable: Moonlighting practices
Independent variable: Employee performance
Model
The regression model used in study is
$Y = \alpha + \beta x + \varepsilon$
where Moonlighting is predictor (x)
employee performance is outcome variable (y)
α *&* β*= coefficient*
ε *= error term*

Results and Discussion

Table 1: Reliability Analysis

Cronbach's Alpha	No. of items
.865	15

Source: Authors' Calculation

Through Cronbach's Alpha, the questionnaire's reliability is evaluated. According to Table 1, the questionnaire is credible because its alpha value is 0.865.

Table 2: Correlation Analysis

	Moonlighting	Employee Performance
Moonlighting correlation coefficient	1	0.529**
Sig value (two-tailed)		.000
N	100	100
Employee Performance correlation coefficient	0.529**	1
Sig value (two-tailed)	.000	
N	100	100

*** Correlation is significant at the 0.01 level (2-tailed)*
Source: Authors' Calculation

Table 2 illustrates the interdependence of the variables. With a significance value of 0.001, the correlation coefficient between moonlighting and employee performance is 52.9 percent, which is noteworthy at 1%. As a result, there is a strong relationship between employee performance and moonlighting.

Table 3: Regression Analysis

Model	Value of R	Value of R square	Value of adjusted R^2	Std. error of the estimate
1	0.441a	0.194	0.186	0.97685

Source: Researchers' Calculation

The values of R and R-square are displayed in Table 3. The R-value, which is 0.441, shows that the link between the independent and dependent variables is moderate. The amount of variance that the model is able to explain is shown by its R2 value. The R2 score, which is 0.194, shows that the predictor on a response variable account for 19.4% of the variation.

Table 4: ANOVA

Model	Sum of Squares	D.f.	Mean Square	F	Sig
1 Regression	11.164	1	12.123	36.986	0.000*
Residual	32.886	98	0.376		
Total	44.05	99			

Source: Authors' Calculation

Table 4 displays the Analysis of Variance used to determine whether or not the model fits the data well. The model fits well and is able to forecast the impact of moonlighting on the dependent variable, employee performance, as shown by the p-value in the above table being less than 0.05 at a 5% level of significance.

Table 5: Model Fitness

Model	B	Standard Error	Beta	Value of t	Sig value
1 (Constant) Moonlighting	.083	.066	.061	1.270	.000
	.404	.067		6.075	.000

Source: Researchers' Calculation

The table shows how moonlighting practises affect worker performance. The likelihood of moonlighting is positively correlated. In this instance, 404 directs a direct correlation between employee performance and moonlighting methods. The t value is 6.075, which indicates that this link is statistically significant.

Objective 3- To find out the ways to tackle moonlighting behaviour.

Moonlighting is a practise that roughly half of the workforce has used at some

point, according to recent study on the topic. This percentage is also increasing as we move toward flexible working hours and circumstances.

Ask an open-ended question.

Moonlighting is quite prevalent, with about 50% of the workforce having done it at some point, according to recent studies. Additionally, this ratio is increasing as we move toward flexible working environments and conditions.

Share the consequences.

When moonlighting is found, HR should also let the workers know the consequences of the practise. If they do not change their working processes, there is a possibility that the workers will feel exhausted. In any case, juggling two jobs is challenging but not impossible. HR needs to provide workers a sense of value in order to motivate them to contribute their time and effort to the company. They must be informed of the company's concerns and justifications through HR. The personnel must be calmly informed of the consequences.

Use non-compete agreements.

Precautions can be taken to avoid moonlighting. Contracts might include non-compete clauses to prohibit employees from taking up side jobs. Non-compete agreements provide protection for trade secrets, intellectual property, and human resources. The contract should explicitly state that the employee is not allowed to work for another business while they are still employed by the first. Additionally, sharing confidential company information should be prohibited.

Use Employee Activity Monitoring Software

A variety of employee activity-tracking programmes can be used to monitor the working hours of your staff. These tools make it simple for managers to keep an eye on the activities of their personnel and determine whether or not they are working for competitors. They include a number of capabilities, such as screenshot capture, activity tracking, productivity monitoring, and much more. With the use of these tools, organisations can identify any signs of side jobs and address them before they become a problem. Employers are always informed, for instance, if someone uses a different work email account or private company data after hours. It makes it simple for firms to prevent issues and maintain output, which helps things run smoothly.

Make Sure All Employees Understand Company Moonlighting Policy

Every employee must be aware of the company's policies. Understanding what is and isn't permitted is necessary for this. In addition, if they have any questions, they can always contact management. It is encouraged that bosses brief new hires on the company's general code of conduct during orientation to ensure that everyone is aware of the moonlighting policy. This briefing should cover a range of policies, such as how companies will handle staff members that moonlight, what steps will be done against them when a moonlighter is breaking the rules, and much more.

Conclusion

If what employees do after work doesn't financially or materially affect the business, employers shouldn't be troubled by it. The Central Government should take the proper legal action to prevent employees from moonlighting while also making an effort to refrain from punishing them unjustly. Businesses find it challenging and delicate to deal with the problem of staff moonlighting. It is much more open to interpretation because there isn't definite legislation in this area. This seems appropriate and just to the general populace, in my opinion. Businesses and organisations, however, are not founded on morally dubious or irrational ideals. It is governed by statutes, regulations, and agreements. This, if lacking, can lead to a chaotic, poorly run environment. This might potentially put the economy in peril. Unless it financially or severely undermines the business' operations, employers shouldn't be concerned about what their employees do

after hours. While aiming to avoid punishing employees arbitrarily, the Central Government should implement the necessary legal measures to control moonlighting. It is delicate and challenging for firms to deal with the issue of staff moonlighting. This area's legislation is unclear, which makes it even more open to interpretation. This seems appropriate and just from the viewpoint of the average populace. However, companies or organisations are not founded on morally dubious or nonsensical ideals. Laws, regulations, and agreements all govern it. This, if lacking, can lead to a disorganised, unmanaged environment. could put the economy in peril.

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Unravelling the Funding Conundrum: Issues and Challenges for Startups in India

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Abstract

Startups play a crucial role in fostering entrepreneurial growth in the country, serving as the foundational building blocks of the business pyramid. However, not all startups reach the level of becoming successful large-scale ventures. A major reason for startup failures is the lack of adequate funding, which is essential for transforming ideas into flourishing businesses. This paper explores the funding options available to startups in India, such as venture capital, angel investment, Crowdfunding, and government schemes. It also examines the challenges associated with each funding source, which are further exacerbated by India's unique cultural, economic, and regulatory environment. The paper highlights specific issues that hinder funding accessibility, including investors' limited awareness about emerging sectors, their perception of high risk, limited exit opportunities, and disparities in funding based on regions and gender. Moreover, the COVID-19 pandemic has added additional hurdles and uncertainties to startup funding. To address these challenges, the paper proposes potential solutions and recommendations. By understanding and tackling these issues, stakeholders can contribute to creating a more conducive funding environment for startups. This, in turn, will support their growth and success, leading to economic development and job creation in India. The insights provided in this paper shed light on the complexities of funding startups in the country and can guide efforts towards building a thriving startup ecosystem.

Keywords: *Startup Funding, Angel Investor, Venture Capitalist, Government Grants*

JEL Classification: *M13*

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Introduction

Startups are basically the new business entities or companies that evolve out of innovative technology and business ideas that develop new utility in products and services to meet market needs. As per government notification (Ministry of Commerce and Industry, 2015, Government of India) an entity is identified as a startup upto five years of its incorporation if its turnover does not exceed Rs.25 crores in the last five financial years, and it is working towards innovation, development, deployment, and commercialization of new products, processes or services driven by technology or intellectual property. India has witnessed a significant rise in startup activity in recent years, driven by a vibrant entrepreneurial ecosystem and government initiatives. India is the third-largest startup ecosystem globally, with over 50,000 startups as of September 2021. The number of Indian startups has seen a three-fold increase since 2014, reflecting the growth and potential of the ecosystem. Indian startups have produced a significant number of unicorns, with more than 50 companies reaching a valuation of $1 billion or more (NASSCOM).

Graham (2012) emphasized that startups are synonymous with growth. Their success relies on fast and continuous expansion, which demands increasing capital from the initial innovative idea to scaling up the business model. For entrepreneurs, especially first-timers, raising capital is a challenging necessity. As startups evolve, they require multiple rounds of financing (Bruno & Tayebjee, 1985). The high costs involved in their

development often exceed what can be sourced from personal savings or loans from friends and family. Moreover, startups lack the assets and collateral required for obtaining bank debt.

The difficulty in raising capital negatively affects the commercialization of new technology, as pointed out by Comin (2014). Securing finance is crucial for startups to establish themselves in the market, but many new ventures fail due to a lack of sufficient capital to run and scale the business into mature enterprises. According to Crowne (2002), most startup companies fail before achieving significant milestones.

Despite gaining global recognition and attracting investments from international players, Indian startups face numerous hurdles in securing adequate funding. The significance of these issues and challenges in the funding landscape for startups in India calls for a deeper exploration and identification of potential solutions. This paper aims to provide a comprehensive analysis of startups in India, with a particular focus on their funding issues and challenges.

Why Funding is Important for Startups

Funding is of vital importance for startups in India as it enables their growth, development, and overall success. Startups require capital to fuel their expansion, invest in research and development (R&D), acquire talent, conduct effective marketing, adopt infrastructure and technology, expand their business, mitigate risks, and build investor confidence and networks. (Clifford,2014)

With funding, startups can execute their business plans, invest in product development, marketing strategies, and infrastructure, and hire skilled professionals. R&D activities become feasible, allowing startups to innovate and stay competitive in technology-driven sectors. Marketing efforts are supported, leading to brand awareness, customer acquisition, and revenue generation. Moreover, startups can acquire the necessary infrastructure and technology to streamline operations and improve customer experiences.

Funding also supports business expansion into new markets or geographies, enabling startups to adapt to local requirements and grow their presence. It provides a financial cushion to navigate risks, pivot strategies, and sustain operations during challenging times. Additionally, securing funding from reputable investors enhances credibility, attracting further funding, strategic partnerships, and mentorship opportunities. Investors also bring valuable industry connections and networks, facilitating collaborations and access to new markets.

Startup Funding and Its Sources

At the initial stage, entrepreneurs are more committed and try to manage fund from internal sources as well as by incurring personal debt rather than sourcing from external financers. Though this gives more freedom to develop the company, it lands entrepreneurs into a risky zone. This is also called bootstrapping. This has been defined as "A collection of method used to minimize the amount of outside debt and equity financing needed from bank and investors" (Alec, 2006). Many startup ventures need more money than what the owner or entrepreneurs manage from the internal sources. The external sources of funding are:

Angel Investors: Angel investors are high-net-worth individuals who provide early-stage funding to startups in exchange for equity ownership. Angel investing has gained momentum in India, with notable investors like Ratan Tata and Sachin Bansal actively participating. According to data from the Indian Private Equity and Venture Capital Association (IVCA), angel investments in India reached a record high of $787 million in 2020, showcasing the growing interest in startup investments.

Venture Capital: Venture capital (VC) firms invest in startups with high growth potential in exchange for equity. Venture capital investments are typically larger than angel investments and are focused on scaling the business rapidly. VCs often take an active role

in the company's strategic decisions and provide guidance to help it succeed.

Crowdfunding: Crowdfunding platforms allow startups to raise funds from a large number of individuals who contribute small amounts. There are different types of crowdfunding, including reward-based crowdfunding (backers receive a non-financial reward), donation-based crowdfunding (backers contribute without expecting a financial return), and equity crowdfunding (backers receive equity in the company).

Incubators and Accelerators: Incubators and accelerators are organizations that provide startups with a combination of funding, mentorship, resources, and workspace in exchange for equity. They typically run structured programs that help startups refine their business models, develop their products, and prepare for further funding.

Corporate Investments: Large corporations have been increasingly investing in startups to foster innovation, gain access to emerging technologies, and stay competitive. Corporations may set up venture capital arms or innovation funds to invest directly in startups. Corporate venture capital (CVC) investments have been on the rise. For instance, in 2020, CVC deals in India reached a record high of $1.1 billion, as reported by Inc42 Plus.

Government Grants and Programs: Governments, both at the national and regional levels, provide grants, subsidies, and incentives to promote entrepreneurship and innovation. These grants can provide a crucial financial boost, especially for startups in sectors with high social or economic impact.

Challenges faced by Startups in Funding

Sharifi Omidand Hossein, Karbalaei, Bentolhoda, in their study on "Understanding the Financing Challenges Faced by Startups in India" (2015) explained, many businesses start with a dream, but it takes more than just a dream for them to grow into successful businesses—including the tenacity to overcome the many challenges facing startups today. Startups take time, effort, and energy. Funding is a major concern for startups. Acquiring bank loan for startups is a challenging task due to the lack of collateral and high rick perception by the banks. Here are some key challenges faced by startups in funding.

Limited Investor Interest: Startups often struggle to attract investor interest, especially in highly competitive industries or during economic downturns. Investors tend to look for startups with strong growth potential, a solid business plan, and a unique value proposition.

Lack of Track Record: Startups typically lack a track record or a proven history of success, which makes it challenging for them to convince investors to invest in their ventures. Without a track record, investors may be hesitant to take the risk.

Valuation and Equity Dilution: Startups often struggle with determining a fair valuation for their company, which can be a barrier to securing funding. Overvaluation can deter investors, while undervaluation may result in excessive equity dilution for the founders.

Uncertain Market Conditions: Economic uncertainties, market fluctuations, and industry disruptions can impact investors' confidence in startups. During challenging market conditions, investors may become more risk-averse and less willing to invest in early-stage ventures.

Regulatory and Legal Challenges: Startups operating in highly regulated industries, such as healthcare or finance, may face additional challenges in securing funding due to compliance requirements and legal complexities.

Lack of Network and Connections: Building a strong network of investors, mentors, and industry connections is crucial for startups seeking funding. Lack of such networks can make it difficult for startups to find the right investors or get introductions to potential funding sources.

Execution Risk: Investors evaluate not only the viability of the business idea but also the

ability of the startup's team to execute the plan successfully. Startups need to demonstrate their team's capabilities, domain expertise, and the ability to adapt to market changes.

Limited Access to Resources: Startups often face resource constraints, including limited access to capital, skilled talent, infrastructure, and marketing resources. These limitations can hinder their ability to attract investors and demonstrate market traction.

Investor Attitude towards Emerging Sectors

Startups in emerging sectors often face challenges in funding due to two primary factors: the lack of awareness among investors about these sectors and the high-risk perceptions associated with startup funding. (source: ADBI working paper)

Investors, particularly those who are more comfortable with traditional industries, may have limited knowledge or understanding of the potential of emerging sectors such as artificial intelligence, blockchain, biotechnology, and clean energy. This lack of awareness can create a barrier for startups operating in these sectors, as investors may be hesitant to invest in unfamiliar territory.

Additionally, emerging sectors are often perceived as high-risk due to their disruptive nature and the uncertainties surrounding their long-term viability and profitability. Investors may have concerns about market acceptance, regulatory challenges, and the ability of startups to execute their business plans successfully. These risk perceptions can lead to a reluctance to invest, especially among more risk-averse investors.

To overcome these challenges, startups in emerging sectors need to actively promote awareness and understanding among investors and address the high-risk perceptions associated with their funding. By doing so, they can increase their chances of attracting investors who are informed, receptive, and willing to invest in the promising opportunities offered by these sectors.

Funding Trends of Indian Startups

Securing startup funding in India has been an evolving landscape over the past decade. Over the years, India has witnessed a significant increase in startup funding activity, reflecting the growing confidence of investors in the Indian startup ecosystem. Large funding rounds of several hundred million dollars have become more common in recent years. Technology-based startups have attracted significant investor interest and funding. Both domestic and international investors have shown a keen interest in Indian startups. Global venture capital firms, corporate investors, and angel investors have actively participated in funding rounds, providing startups with access to capital and expertise. Now we take a look at some trends in funding of startups in India and total number of deals count during the period of 2014-2022.

Table 1: Indian Startup Funding Amount and Number of Deal Count

Years	Funding Amount ($ BN)	Number of Deal Count
2014	5	375
2015	9	985
2016	6	1049
2017	13	998
2018	12	832
2019	14	812
2020	11	953
2021	42	1584
2022	33	1692

Source: The State of Indian Startup Ecosystem Report, 2022

The above table depicts that funding amount raised by startups are increasing during the period of 2014 to 2022 from $5 billion in 2014 to $ 42 billion in 2021. The Inc42

report on startup predicts that India's total startup funding will touch $ 180 billion by the end of 2023. Also, the number of deals during the period also increased rapidly, which shows that Indian startups are able to attract funds from various sources.

Impact of Covid19 on Funding Startup in India

The COVID-19 pandemic has had a significant impact on startup funding in India. In the early months of the pandemic, investor sentiment turned cautious, leading to a decline in funding activity. Many startups faced challenges in raising funds as investors focused on preserving capital and assessing the uncertain market conditions. However, as the economy gradually reopened and adapted to the new normal, the startup ecosystem in India started to show signs of recovery. (source: Inc42 report)

According to data from Venture Intelligence, startup funding in India saw a decline in 2020. The total funding raised by Indian startups dropped from $14.1 billion in 2019 to $10.9 billion in 2020. This decline was primarily attributed to the pandemic's impact on investor confidence and the overall economic slowdown.

However, despite the initial setback, the Indian startup ecosystem rebounded strongly in 2021. Funding activities gained momentum, and investors showed renewed interest in innovative and technology-driven startups. According to the Indian Private Equity and Venture Capital Association (IVCA), startup funding in India reached $13.7 billion in the first half of 2021, surpassing the total funding raised in the whole of 2020.

The pandemic also reshaped the investment landscape, with sectors like health tech, edtech, e-commerce, and digital payments witnessing increased investor attention. The need for remote work solutions, contactless services, and online learning platforms drove funding into startups operating in these areas.

Funding Gap: Accessing Early-Stage Capital
The Significance of Early-Stage Funding: Securing early-stage funding is crucial for startups as it provides the necessary resources to transform an idea into a viable business. It enables startups to build minimum viable products, validate market demand, and attract talent. However, the availability of early-stage funding in India remains limited, due to the higher risk associated with their ventures, lack of collateral for bank loans, and limited access to venture capital, creating a funding gap that hampers the growth and development of startups. A study by KPMG in collaboration with NASSCOM reveals that in 2020, only 32% of the startups surveyed had successfully raised seed funding.
Venture Capital and Angel Investments: In recent years, there has been a surge in venture capital firms and angel investors in India. These investors play a vital role in supporting startups by providing the necessary capital and strategic guidance. However, despite the growth in the number of investors, the funding gap between early-stage and later-stage startups persists. Early-stage startups often struggle to attract investment due to the higher risk associated with their ventures.
Government Initiatives and Support: Recognizing the importance of early-stage funding, the Indian government has introduced various initiatives to support startups. Programs such as the Startup India initiative and the establishment of funds like the Fund of Funds for Startups (FFS) aim to bridge the funding gap. However, the effectiveness and reach of these initiatives need to be evaluated to ensure that they are addressing the specific needs of early-stage startups.

Regulatory Challenges: Navigating the Funding Landscape

Bureaucratic Hurdles and Complex Compliance: Startups in India often face bureaucratic hurdles and complex compliance requirements when seeking funding. The lengthy and intricate procedures involved in obtaining funding can be discouraging for startups and hinder their ability to secure timely capital. The World Bank's Ease of Doing Business Index ranks India at 63 out of 190 countries, indicating the challenges faced by

startups in navigating the regulatory landscape.

Angel Tax and Taxation Policies: One particular regulatory challenge that has garnered significant attention is the issue of angel tax. Angel tax is a tax levied on the capital raised by unlisted companies through the issuance of shares to resident investors above their fair market value. The stringent enforcement of angel tax regulations has posed challenges for startups, resulting in increased scrutiny and complexity in fundraising.

Regulatory Reforms and Policy Interventions: Recognizing the need for regulatory reforms, the Indian government has taken steps to streamline the funding process for startups. Initiatives such as simplifying the angel tax framework, introducing digital platforms for compliance, and promoting self-certification mechanisms aim to reduce the regulatory burden on startups. However, continuous evaluation and adaptation of these reforms are essential to ensure a favorable and supportive regulatory environment.

Mentorship Gap: Unlocking the Power of Guidance

Importance of Mentorship for Startups: Mentorship plays a vital role in the success of startups. Experienced mentors provide valuable guidance, industry insights, and networking opportunities, enabling startups to navigate challenges and make informed decisions. However, startups in India face a mentorship gap, with limited access to experienced mentors and sector-specific expertise. According to a report by Startup Genome, India ranks 28th out of 53 global startup ecosystems in terms of access to mentors, highlighting the need for further development in this area.

Incubators and Accelerators: Incubators and accelerators play a crucial role in providing mentorship and support to startups. These organizations offer structured programs, access to networks, and mentorship opportunities. While India has witnessed a growth in the number of incubators and accelerators, there is a need for sector-specific expertise and tailored programs to address the specific needs of startups across different industries.

Corporate and Academic Collaborations: Collaborations between startups, corporates, and academic institutions can bridge the mentorship gap by leveraging the expertise and resources of established organizations. Corporate accelerators and innovation programs facilitate knowledge-sharing and mentorship, enabling startups to tap into the experience and industry networks of established players. Similarly, collaborations with academic institutions can provide startups with access to domain-specific expertise and research support.

Limited Exit Opportunities: Impediments to Investor Sentiment

Importance of Exits for Investors: Investors in startups seek exit opportunities to realize returns on their investments. IPOs and acquisitions are the primary exit routes that provide liquidity and attract further investments into the ecosystem. However, the limited availability of viable exit options affects investor sentiment and impedes the flow of funds into startups.

Challenges in IPOs and Acquisitions: The IPO market in India has been relatively subdued for startups, with only a few notable IPOs in recent years. The complex listing requirements, market volatility, and regulatory challenges hinder startups' ability to go public. Similarly, the acquisition landscape for startups faces challenges, with few significant acquisitions taking place in the Indian market.

Building a Vibrant Exit Ecosystem: Creating a vibrant exit ecosystem requires efforts from various stakeholders. Simplifying listing requirements, improving market infrastructure, and creating investor-friendly regulations can attract more startups to go public. Encouraging domestic and international acquisitions through policy interventions and fostering a culture of acquisitions can further unlock opportunities for exits.

Regional Disparities in Startup Funding

One of the significant regional problems in startup funding in India is the concentration of investment in a few major cities, primarily in the metropolitan areas such as Bangalore, Mumbai, and Delhi. These cities have developed robust startup ecosystems, attracting a significant share of venture capital funding. However, this concentration leaves startups in other regions struggling to secure adequate funding for their ventures.

According to data, in 2020, Bangalore accounted for around 40% of the total startup funding in India, followed by Delhi-NCR and Mumbai, which collectively received nearly 20% of the total funding. In contrast, startups in other regions, including tier-2 and tier-3 cities, faced challenges in accessing capital. This skewed distribution hinders the growth potential of startups outside these major cities.

Table 2: Regional Distribution of Startup Funding in 2020

Region	Percentage
Bangalore	38.12%
Delhi NCR	10.8%
Mumbai	9.2%
Others	41.88%

Source: ADBI working paper

The lack of funding in regional areas can be attributed to various factors, such as a limited presence of venture capitalists and angel investors, a lesser number of startup support organizations, and relatively less developed infrastructure. Additionally, investors often perceive higher risks in investing in startups from non-metropolitan regions, leading to a bias towards established startup hubs.

Gender Disparities in Startup Funding

Funding gender disparity is a prominent issue within India's startup ecosystem. Sharma (2013), made a study on women entrepreneurs in India. She concluded that women entrepreneurs face many problems like social barriers, legal aspects, lack of education, family support etc. Female founders often face additional challenges in accessing funding compared to their male counterparts. The gender disparity in funding can be attributed to various factors. Let's explore this issue further and support it with relevant data and facts.

Funding Gap for Female-Led Startup: According to a study by the Boston Consulting Group (BCG) and MassChallenge, female-founded startups in India receive only 1% of the total venture capital funding. Another report by Your Story reveals that in 2020, only 13.76% of the total funding raised by Indian startups went to companies with at least one female co-founder.

Bias and Stereotypes: Implicit bias and stereotypes can influence investor decision-making, resulting in gender disparities in funding. Investors may hold unconscious biases that lead them to perceive female-led startups as less capable or viable, impacting their investment decisions. A study published in the Proceedings of the National Academy of Sciences found that investors tend to ask female entrepreneurs different types of questions during pitch sessions, focusing more on prevention and potential losses, while male entrepreneurs are often asked about growth and achievements. This bias can affect funding outcomes.

Government Initiatives for Funding Startups in India

Growths of Startups are indispensable for achieving the goal of "Make in India" and "Atmanirbhar Bharat initiative". Government has taken various initiatives related to funding Indian startups. These are:

Startup India: Launched in 2016, the Startup India initiative aims to foster entrepreneurship and promote startup culture in India. It provides various benefits and support mechanisms to startups, including access to funding, tax exemptions, and

simplification of regulations. The government has also set up the Startup India Seed Fund to provide early-stage funding to startups.

Atal Innovation Mission (AIM): AIM is a flagship initiative of the Indian government that focuses on promoting innovation and entrepreneurship among students, startups, and entrepreneurs. It provides financial support through programs such as Atal Incubation Centers (AICs), Atal Tinkering Labs (ATLs), and Atal New India Challenges (ANIC) to enable startups to access funding and mentoring.

SIDBI Fund of Funds: The Small Industries Development Bank of India (SIDBI) manages the Fund of Funds for Startups (FFS) program. It aims to support startups by investing in SEBI-registered Alternative Investment Funds (AIFs). These AIFs, in turn, provide funding to startups and early-stage ventures. The FFS has a corpus of INR 10,000 crores and is expected to attract more private sector capital for startups.

Credit Guarantee Fund Scheme for Startups (CGFS): The CGFS was introduced by the Indian government to provide collateral-free credit facilities to startups and MSMEs (Micro, Small, and Medium Enterprises). The scheme aims to facilitate easier access to credit for startups, enabling them to meet their working capital requirements and scale their operations.

State-Specific Initiatives: Many Indian states have also launched their own startup initiatives to encourage entrepreneurship and provide financial support to startups. These state-level programs offer funding, incubation facilities, mentorship, and other support mechanisms to foster the growth of startups within their respective regions.

Conclusion

The funding landscape for startups in India is evolving and offers significant opportunities for entrepreneurs and investors alike. With the government's support, increasing investor interest, and a growing startup ecosystem, the future prospects for startup funding in India are promising. However, it's important to consider the following issues for the way forward:

Startups should explore a diverse range of funding sources to maximize their chances of securing capital. Startups should align their funding strategies with the specific needs and trends of their industry. Understanding sector-specific dynamics, market potential, and investor preferences can help startups target the right funding sources and increase their chances of success.

Startups should seek investors who not only provide financial support but also bring value beyond the capital. Investor networks, industry expertise, and mentorship can play a crucial role in a startup's growth. Investors are often attracted to startups with high growth potential and scalable business models. Startups should emphasize their growth plans, market opportunities, and strategies for scaling their operations.

To solve regulatory hurdles in startup funding, industries can engage with legal experts to understand and navigate the specific regulations applicable to them. Open communication should be maintained with regulatory authorities, seek their guidance, and ensure compliance. To address regional and gender disparities in funding, implement inclusive policies, provide access to mentorship programs and networks, foster diverse investment opportunities, and offer financial support specifically tailored to underrepresented regions and genders. Additionally, promote education and awareness on these issues to encourage greater equality and representation in the startup ecosystem.

The startup ecosystem is dynamic, and trends can change rapidly. Startups should stay updated with the latest market trends, funding patterns, and regulatory changes. By continuously learning and adapting to the evolving landscape, startups can position themselves strategically to attract funding.

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Analyzing the Effects of Urbanization, Foreign Direct Investment, Non-Agricultural Sector, and Coastal Geography on Per Capita Income in Indian States: A Post-2008 Economic Crisis Study.

Jyotish Engti*

Abstract

The study delves into the intricate dynamics of India's economic evolution, characterized by rapid urbanization, increased foreign direct investment (FDI), and the growing prominence of the non-agriculture sector, particularly in coastal states. Against the backdrop of the 2008 global economic crisis and its aftermath, the study aims to unravel the nuanced relationships between urbanization, cumulative FDI inflow, the non-agriculture sector's percentage contribution to GDP, and the coastal state status on the per capita net domestic product (PCNDP) of Indian states and Union Territories. As India grappled with economic shifts post-2008, including credit crunch and stock market fluctuations, this paper seeks to elucidate how these factors collectively impact PCNDP. The research underscores the crucial role of understanding these relationships for policymakers and researchers, offering insights into the specific drivers of economic growth at the state level and informing strategic decision-making for balanced development and reduced regional disparities. The study employs robust regression techniques and hypothesis testing to scrutinize the individual and collective influences of urbanization, FDI, non-agriculture sector contribution, and coastal state status on PCNDP. The findings contribute valuable information for policy formulation and strategic decision-making in the context of India's diverse economic landscape.
Keywords: Coastal States, Foreign Direct Investment, Non-agriculture Sector, Urbanization
JEL Classification: C21, R11, O18, F21,

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Introduction

With rapid urbanization, increased inflow of foreign direct investment, the growing contribution of the non-agriculture sector to the GDP, and the emergence of coastal states as significant economic contributors, India has undergone a remarkable economic and social evolution. The shift from agriculture to the service sector, unlike other nations, has made India stand out in South Asia and other emerging countries. Urbanization plays a crucial role in the economic development of any country (Tripathi & Mahey, 2016). Several studies have established a positive link between urbanization and economic growth, considering both developed and developing countries. According to a study conducted by Shaban et al [(Khan, 2020)]., urbanization enables the skilled population to migrate to urban areas, creating an efficient labor market that leads to faster economic growth. Urbanization has a significant impact on the per capita net domestic product of Indian states and Union Territories. Foreign direct investment also plays a vital role in the economic growth of a nation, including India. FDI has a positive impact on the GDP by contributing to the overall capital formation and technological advancement. It also leads to an increase in per capita income by creating more employment opportunities and enhancing the productivity of labor. Studies have shown that FDI inflows have a significant positive impact on the economic growth of a nation, including in India (Sahoo & Mathiyazhagan, 2003). Similarly, non agriculture sector contributes to the diversification

of the economy, increases productivity, and creates employment opportunities. Coastal states in India have also emerged as major contributors to the country's economic growth, benefiting from their proximity to trade and foreign direct investment.

After the economic crisis 2008, India's economic landscape has undergone significant changes. In Indian financial market, despite a conservative banking sector, the crisis led to a credit crunch, affecting Indian firms' working capital. Public sector banks remained stable with low non-performing assets, contrasting with the global financial turmoil. In capital market, Foreign institutional investors (FIIs) withdrew significantly after Lehman Brothers' collapse, causing a stock market collapse. Long-term foreign direct investment (FDI) inflows remained stable, indicating sustained confidence in India's market. Export-oriented sectors, pivotal for India's growth, suffered as growth rates declined sharply after Lehman Brothers' collapse. Employment in key sectors, including mining, textiles, and autos, was adversely affected. Outflows of capital and declining export revenues led to a reduction in foreign exchange reserves (Mehrotra, 2010). The rupee depreciated sharply against the US dollar but later recovered as exports increased and FIIs returned. India felt the global economic crisis through various channels, impacting its banking and capital markets, key sectors, and foreign exchange reserves. The subsequent recovery was influenced by both domestic and global factors shaping India's economic trajectory. in such a situation FDI inflows, the percentage contribution of the non-agriculture sector to GDP, and the presence of coastal states could play crucial roles in determining Per Capita Income of the States and UT's.

The study aims to examine the impact of urbanization, cumulative FDI inflow, the percentage contribution of the non-agriculture sector to GDP, and coastal states on the per capita net domestic product of Indian states and Union Territories., and the coastal state on the per capita net domestic product of Indian states and UTs. Understanding the relationship between these factors and economic performance is crucial for policymakers and researchers alike. This research paper will provide insights into the role of urbanization, foreign direct investment, the non-agriculture sector, and coastal states on the economic development of Indian states and UTs (Tripathi & Mahey, 2016).

The rapid urbanization and economic changes witnessed in India post the 2008 global economic crisis have prompted a need to understand the multifaceted factors influencing the Per Capita Net Domestic Product (PCNDP) of Indian States and Union Territories (UTs). This study focuses on comprehensively analyzing the interplay of Urbanization, Cumulative Foreign Direct Investment (FDI) inflow, the Percentage contribution of the Non-agriculture Sector to Gross Domestic Product (GDP), and the Coastal state status in shaping the PCNDP landscape. Thus, the main research problem addressed in this study is to assess the effect of urbanization, cumulative FDI inflow, the percentage contribution of the non-agriculture sector to GDP, and coastal state on the per capita net domestic product of Indian states and UTs. The specific objectives of the study are as follows:

i.   To Examine the Impact of Urbanization on Per Capita Net Domestic Product of Indian States and UTs.
ii. To Assess the Influence of Cumulative FDI Inflow on Per Capita Net Domestic Product of Indian States and UTs.
iii. To Analyze the Relationship between the Percentage Contribution of the Non-agriculture Sector to GDP and the Per Capita Net Domestic Product of Indian States and UTs.
iv. To explore the impact of coastal states' geographical location on Per Capita Net Domestic Product of Indian States and UTs.

Literature Review

Previous research has extensively investigated the factors influencing the economic performance of Indian states and UTs. K. Kaliappa et. al. studied state-level development disparities, noting improvements in some areas but a persistent gap. The paper explores the roles of state, market, and community in development, finding that despite economic reforms, the state's role in providing essential services prevents further disparities. Equitable sharing of central resources and targeted spending on services like health and education contribute to spatial equity, fostering balanced development (Kalirajan et al., 2010). This suggests that the economic growth and development have not been uniform across all Indian states and Union Territories, thereby warranting further research to understand the underlying factors contributing to this disparity.

Several studies, including those by Bhide et al., Chand and Chauhan, Mukherjee and Koruda, and Ghosh, have explored the impact of various agricultural outcomes, such as per capita agriculture and net state domestic product, on the economic divergence across Indian states. Their findings point towards increasing disparities, especially when tested through measures of sigma convergence and unconditional beta convergence (Mukherjee & Kuroda, 2003). This highlights the need to delve deeper into the role of urbanization, FDI, the non-agriculture sector, and the influence of coastal states on economic growth and divergence across Indian states and UTs.

Moreover, the impact of urbanization on economic growth has been a topic of considerable interest in the literature. Studies have established positive links between urbanization and economic growth (Turok & McGranahan, 2013), emphasizing the role of skilled migration to urban areas in creating an efficient labor market and driving faster economic growth (Imbert & Papp, 2020). Additionally, the significant impact of FDI on a nation's economic growth, particularly in terms of capital formation, technological advancement, and increased employment opportunities, has been well-documented.

In the context of coastal states, their proximity to trade and FDI has positioned them as major contributors to India's economic growth. Understanding the specific impact of the coastal state status on the economic development and per capita net domestic product of Indian states and UTs is crucial for comprehensive policy formulation and strategic decision-making.

Given the complex interplay of these factors, it is imperative to conduct a thorough analysis to examine their individual and collective influence on the economic landscape of Indian states and UTs. This study seeks to fill this gap by exploring the interconnectedness of urbanization, FDI, the non-agriculture sector, and coastal states, and their impact on the per capita net domestic product across Indian states and UTs.

Database and Methodology

The research utilizes secondary data, consisting of datasets obtained from various sources. The datasets include information on the Population in urban areas of the states or Union Territories (UTs), Total Population of the states or UTs, Net State Value Added by Economic Activity - Agriculture, and Net State Domestic Product. These datasets have been sourced from the "Handbook of Statistics on Indian States" published by the Reserve Bank of India (RBI). All values are reported in terms of constant prices, with the base year set as 2004-05. Specifically, the data related to the Population in urban areas and the Total Population of the states or UTs are derived from the 2011 census. Moreover, information on Foreign Direct Investment (FDI) inflow is obtained from the Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce and Industry, Government of India.

Dependent Variable

pci: The dependent variable "pci" represents the **Per Capita Net State Domestic Product** of different States/UTs in India for the year 2011-12 (₹ Lakh). It is calculated at constant price taking 2004-05 as base year.

Independent Variables:

The independent variables i.e. included in the model are

i.   **Urbanization Status (Ubn):** Examining how the level of urbanization within a state correlates with its Per Capita Net State Domestic Product. Urbanization Status of a state is measures through the percentage of people live in urban area. The inclusion of the variable "Urbanization Status" in the analysis suggests an interest in understanding the relationship between the level of urbanization within a state and Per Capita Net State Domestic Product. Urbanization is a multifaceted process involving the growth of urban areas, characterized by an increase in the proportion of a population living in cities and towns compared to rural areas. It is derived from the 2011 census.

ii.   **Cumulative Foreign Direct Investment (FDI) Inflow (Cfdiin):** Assessing the influence of cumulative FDI inflow on the economic performance of states. It is the cumulative FDI inflow over four years from 2008-09 to 2011-12 of the states and UTs (US $ million). Here for all states and UTs FDI equity inflows include 'equity capital component' only.

iii.   **Percentage Contribution of Non-Agriculture Sector to GDP (NAgri):** Analyzing the role of the non-agricultural sector in contributing to the overall economic prosperity of a state. The inclusion of the variable " **NAgri** " in regression analysis suggests an investigation into the relationship between the share of the non-agricultural sector in a state's Gross Domestic Product (GDP) and the state's Per Capita Net State Domestic Product.

iv.   **Coastal Dummy Variable (Cs):** Investigating whether being a coastal state has a significant impact on the state's Per Capita Net State Domestic Product. The inclusion of a "Coastal Dummy Variable" in your regression analysis suggests an investigation into whether being a coastal state has a significant influence on the Per Capita Net State Domestic Product of different States/UTs in India.

Techniques used to arrange the data

For the variable "**ubn"** We take percentage of population live in urban areas as the measure of urbanization status. Thus, formula for measuring urbanization status is –

$$ubn = \frac{Population\ in\ urban\ area\ of\ the\ state\ or\ UTs}{Total\ Population\ of\ the\ state\ or\ UTs} \times 100$$

For the variable "**cfdiin"** we calculated the cumulative FDI inflow over four years from 2008-09 to 2011-12 of the states and UTs (US $ million). Here for all states and UTs FDI equity inflows include 'equity capital component' only.

In case of variable "**nagri"** we use the following formula to measure the Percentage Contribution of Non-Agriculture Sector to GDP (NAgri) –

$$nagri = \left\{ 1 - \frac{Net\ state\ Value\ added\ by\ Economic\ Activity\ -\ Agriculture}{Net\ State\ Domestic\ Product} \right\} \times 100$$

For the variable "**Cs",** as there the two categories for States or UTs: (i) Coastal State and (ii) Non-Coastal State. Thus, to measure this variable we use one dummy "**Cs".** The values are given as -

Cs = 1; for Coastal state

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Cs = 0; for Non-Coastal state
Hypotheses of the Study
Urbanization: It is hypothesized that states with higher levels of urbanization will exhibit a positive association with PCI. It is anticipated that there exists a positive correlation between the level of urbanization and PCI. The hypothesis suggests that as a state becomes more urbanized, its economic development and per capita income tend to increase.

H_o= urbanization has significant effect on Per Capita Income.

H_A= urbanization doesn't have significant effect on Per Capita Income.

FDI Inflow: The study anticipates a positive relationship between cumulative FDI inflow and PCI, suggesting that higher FDI contributes to increased economic well-being. It is hypothesized that there is a positive correlation between the cumulative FDI inflow over four years and the economic performance of states. The expectation is that states attracting more foreign direct investment will experience improved economic outcomes.

H_o= the cumulative FDI inflow has significant effect on Per Capita Income.

H_A= the cumulative FDI inflow doesn't have significant effect on Per Capita Income.

Non-Agriculture Sector Contribution: The hypothesis posits that a higher percentage contribution of the non-agriculture sector to GDP will be positively correlated with PCI. The hypothesis proposes that there is a positive correlation between the percentage contribution of the non-agriculture sector to GDP and the Per Capita Income (PCI) of a state. In simpler terms, the expectation is that states with a higher proportion of economic activity in non-agricultural sectors will, on average, have higher PCI.

H_o= Percentage contribution of the non-agriculture sector to GDP has significant effect on Per Capita Income.

H_A= Percentage contribution of the non-agriculture sector to GDP doesn't have significant effect on Per Capita Income.

Coastal Dummy Variable: The study hypothesizes that being a coastal state may positively influence PCI due to potential economic activities associated with coastal regions. The hypothesis posits that being a coastal state is associated with a positive influence on Per Capita Income (PCI). In other words, the expectation is that coastal states, on average, exhibit higher PCI compared to non-coastal states.

H_o= Being a coastal state has significant effect on Per Capita Income.

H_A= Being a coastal state doesn't have significant effect on Per Capita Income.

Functional Form of the Model:
The model assumes a linear relationship between the dependent variable "**pci**" and the independent variables "**ubn**" , "**nagri**", "**cfdiin**" and "**Cs**" :

$$pci = \beta 0 + \beta 1 ubn + \beta 2 nagri + \beta 3\ cfdiin + \beta 4 cs + \varepsilon$$

Model Validation
Visualizing relationships among variables& looking for possible non-linear relationships we got-

Figure 1: Scatter Plots

Source: Author's calculation done in Stata 15.

51
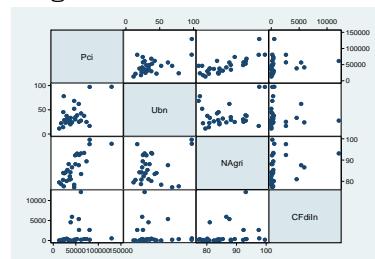
The Scatter Plots (Hirschberg et al., 2005) maybe give a little bit of mixed evidence but we can notice some positive relationship between the variable "Ubn" and "NAgri". There is also some positive relationship between variable "cfdiin" and "nagri"

Matrix of correlations and significance

The matrix of correlations (Ramsay et al., 1984) is also showing the same relations with significance level as displayed below.

Figure 2: Matrix of correlations

	pci	ubn	nagri	cfdiin	cs
pci	1.0000				
ubn	0.5139	1.0000			
	0.0043				
nagri	0.7737	0.2269	1.0000		
	0.0000	0.2366			
cfdiin	0.1778	-0.0881	0.2526	1.0000	
	0.3562	0.6495	0.1861		
cs	0.2324	0.0898	0.2907	0.5809	1.0000
	0.2250	0.6431	0.1261	0.0010	

Source: Author's calculation done in Stata 15.

Identifying problems with Multicollinearity using Variance inflation factor (VIF):

In order to identify the existence of serous Multicollinearity statically we use the Variance inflation factor (VIF) (Shrestha, 2020). High VIF values indicate that a predictor variable may be highly correlated with other predictor variables in the model, which can cause issues such as unstable parameter estimates and inflated standard errors. Typically, a VIF greater than 10 or 5 is considered indicative of a problematic level of multicollinearity. The values of VIF are found as follow-

Figure 3: Variance inflation factor

Variable	VIF	1/VIF
cfdiin	1.59	0.628321
cs	1.59	0.629025
nagri	1.17	0.855294
ubn	1.10	0.909467
Mean VIF	1.36	

Source: Author's calculation done in Stata 15.

As the VIF value is between 1 and 5 for all the variables thus, there is Moderate multicollinearity. The variance of the coefficient estimates is moderately inflated. This cannot be a cause of unstable parameter estimates and inflated standard errors.

Assumptions looking at residual's plots

We can look the residual plot against fitted value to verify whether the constant variant assumption is valid or not. i.e. Assumption of homoscedasticity. The result is as follow-

Figure 4: Residual plot
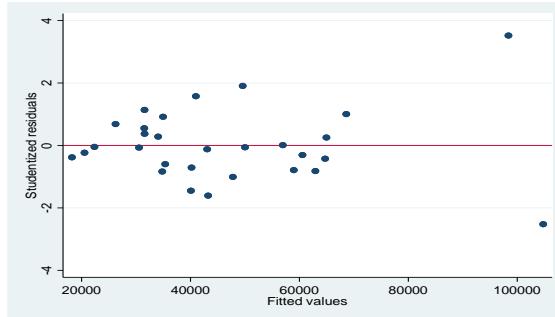
Source: Author's calculation done in Stata 15.

It is noticed that there is no Homogeneity in variance That is there is evidence of heteroscedasticity.

We can re-verify the result with Plot of squared (unstandardized) residuals against fitted values. This can also be used to identify potential violation of constant variance assumption:

Figure 5: Plot of squared (unstandardized) residuals against fitted values
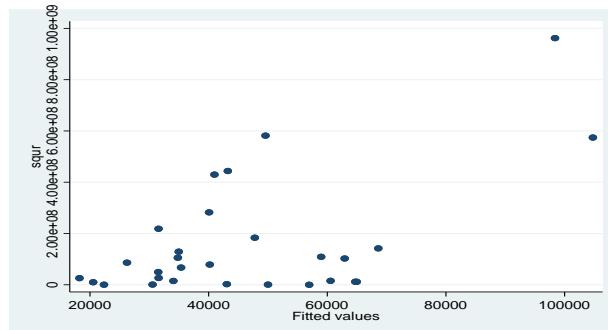
Source: Author's calculation done in Stata 15.

Breush-Pagan Test

We have another option to test statistically using tests of constant variance Breush-Pagan Test (Breusch & Pagan, 1979).

Figure 6: Result of Breush-Pagan Test

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
        Ho: Constant variance
        Variables: fitted values of pci


        chi2(1)      =      9.10
        Prob > chi2  =    0.0026
```

Source: Author's calculation done in Stata 15.

As the P value is less than chosen significance level (e.g., 0.05), we reject the Null. That is there is evidence of heteroscedasticity, suggesting that the variance of the errors is not constant across all levels of the independent variables.

White's test

We have another option to test statistically using tests of constant variance White's test (Corradi & White, 1999).

Figure 7: Result of White's Test

Cameron & Trivedi's decomposition of IM-test

Source	chi2	df	p
Heteroskedasticity	21.49	13	0.0637
Skewness	10.31	4	0.0355
Kurtosis	0.00	1	0.9572
Total	31.81	18	0.0232

Source: Author's calculation done in Stata 15.

Here also, as the P value is less than chosen significance level (0.05), We reject the Null. That is there is evidence of heteroscedasticity. Thus, we will go for Robust Regression instate of simple Regression.

Testing normality assumption with residuals

Figure 8: Summary of Residual

Residuals

	Percentiles	Smallest		
1%	-23964.97	-23964.97		
5%	-21066.28	-21066.28		
10%	-16805.85	-16805.85	Obs	29
25%	-8879.26	-13549.1	Sum of Wgt.	29
50%	-934.6		Mean	-.0000147
		Largest	Std. Dev.	12909.79
75%	7049.117	14780.11		
90%	20731.55	20731.55	Variance	1.67e+08
95%	24119.46	24119.46	Skewness	.4296133
99%	31017.15	31017.15	Kurtosis	2.969549

Source: Author's calculation done in Stata 15.

Significant test for normality: Skewness and kurtosis Test

Let us firstly use skewness and kurtosis test to test the normality. Our test hypothesis are as follows-

H_0: Data set are consistence with normality

H_a: Data set are inconsistence with normality

Figure 9: Result of Skewness and Kurtosis Test

Skewness/Kurtosis tests for Normality

				joint	
Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	Prob>chi2
ur	29	0.2779	0.6317	1.52	0.4682

Source: Author's calculation done in Stata 15.

In terms of skewness and kurtosis statistics the P values are greater than 0.05 which would be an indication that our data are reasonably normal on that dimension. And we have the significance test over all in terms of whether or not the data are departing

from normality. Our p value is greater than 0.05 and so we would have evidence that the residual appears to be fairly normally distributed.

Shapiro-Wilk W test for normality test:

We can also go for Shapiro-Wilk W test to test normality using following hypothesis-

H$_0$: The null hypothesis of the Shapiro-Wilk test is that the sample is drawn from a normally distributed population.

H$_A$: The alternative hypothesis is that the sample is not drawn from a normally distributed population.

Figure 10: Result of Shapiro-Wilk W Test

```
                  Shapiro-Wilk W test for normal data

     Variable │      Obs        W        V        z     Prob>z
    ──────────┼───────────────────────────────────────────────
           ur │       29    0.97918    0.645   -0.903    0.81687
```

Source: Author's calculation done in Stata 15.

Here W is close to 1, it suggests that the sample is close to a normal distribution. And p-value is greater than chosen significance level (0.05), We fail to reject the null hypothesis. There is insufficient evidence to suggest that the sample does not come from a normally distributed population. We may assume normality.

Testing normality of residuals using P-P and Q-Q plots:

Figure 11: P-P Plot
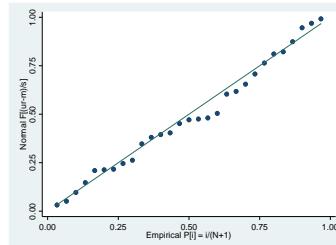
Source: Author's calculation done in Stata 15.

This is plotting data against what would be expected with a normal distribution and so we are looking for is that the data points are following reasonably closely to line and places where data are departing substantially that might be evidence that we would have a departure from normality. The data are largely consistent it looks like they are following pretty close to the line it's not perfect but it's not enough to give us a whole lot of pauses concerning that issue.

Figure 12: Q-Q Plot
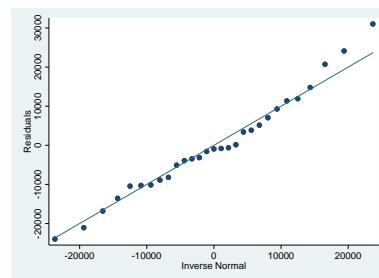
Source: Author's calculation done in Stata 15.

In the **Q-Q** plot line maybe a little bit of mixed evidence in terms of the issue of normality but in large parts probably reasonably in the ballpark it's reasonably consistent. This is a evidence of presence of normality.

Result and Discussion:

The result of Robust Regression is as follow

Figure 13: Result of Robust Regression

```
Linear regression                               Number of obs   =         29
                                                F(4, 24)        =      13.68
                                                Prob > F        =     0.0000
                                                R-squared       =     0.7213
                                                Root MSE        =      13944

             |               Robust
         pci |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         ubn |   396.5823   178.5487     2.22   0.036     28.07585    765.0887
       nagri |   2609.379   518.1606     5.04   0.000     1539.949     3678.81
      cfdiin |   .5091147   .9149021     0.56   0.583     -1.37915     2.39738
          cs |  -1662.165   7484.742    -0.22   0.826    -17109.91    13785.58
       _cons |  -193745.7    45248.3    -4.28   0.000    -287133.6   -100357.8
```

Source: Author's calculation done in Stata 15.

Model Summary:

Number of Observations (Number of obs): There are 29 observations in the dataset.

F-statistic (F(4, 24)): The overall significance of the model is tested using the F-statistic. In this case, $F_{(4, 24)} = 13.68$, with a p-value (Prob > F) of 0.0000. The small p-value suggests that at least one of the coefficients in the model is significantly different from zero. i.e. our model is overall significant.

R-squared: The R-squared value is 0.7213, indicating that approximately 72.13% of the variability in the dependent variable is explained by the independent variables.

Root Mean Squared Error (Root MSE): The Root MSE is a measure of the standard deviation of the residuals. In this case, it is 13944.

Coefficients:

➤ **ubn (Urbanization Status):**

Coefficient (Coef.): 396.5823

Standard Error (Std. Err.): 178.5487

t-statistic (t): 2.22

p-value (P>|t|): 0.036

95% Confidence Interval: [28.07585, 765.0887]

Interpretation: The coefficient for **ubn** is 396.5823. Holding other variables constant, a one-percent increase in the number of people live in urban area of the states or UTs is associated with an increase of 396.5823 in the Per Capita Net State Domestic Product of the states or UTs (pci). The p-value suggests that the coefficient is statistically significant.

➤ **nagri (Percentage Contribution of Non-Agriculture Sector to GDP)**:

Coefficient: 2609.379

Standard Error: 518.1606

t-statistic: 5.04

p-value: 0.000

95% Confidence Interval: [1539.949, 3678.81]

Interpretation: The coefficient for "nagri" is 2609.379. Holding other variables constant, a one-unit increase in Percentage Contribution of Non-Agriculture Sector to GDP of the states or UTs is associated with an increase of 2609.379 in the Per Capita Net State Domestic Product of the states or UTs (pci). The p-value indicates statistical significance.

➢ **cfdiin (Cumulative Foreign Direct Investment (FDI) Inflow):**

Coefficient: 0.5091147

Standard Error: 0.9149021

t-statistic: 0.56

p-value: 0.583

95% Confidence Interval: [-1.37915, 2.39738]

Interpretation: The coefficient for **"cfdiin"** is 0.5091147. The p-value is greater than 0.05, it suggests that this coefficient is not statistically significant at conventional significance levels.

➢ **cs (Coastal Dummy Variable):**

Coefficient: -1662.165

Standard Error: 7484.742

t-statistic: -0.22

p-value: 0.826

95% Confidence Interval: [-17109.91, 13785.58]

Interpretation: The coefficient for "cs" is -1662.165. The p-value suggests that this coefficient is not statistically significant at conventional significance levels.

➢ **Constant Term (_cons):**

Coefficient: -193745.7

Standard Error: 45248.3

t-statistic: -4.28

p-value: 0.000

95% Confidence Interval: [-287133.6, -100357.8]

Interpretation: The constant term represents the estimated value of the dependent variable when all independent variables are zero. The p-value indicates statistical significance.

The overall model is statistically significant, as indicated by the F-statistic. The R-squared value suggests a relatively good fit. The coefficients for ubn (Urbanization Status) and nagri (Percentage Contribution of Non-Agriculture Sector to GDP) are statistically significant, while the coefficient for cfdiin (Cumulative Foreign Direct Investment (FDI) Inflow) and cs (Coastal Dummy Variable) are not statistically significant. The constant term is also statistically significant. The 95% confidence intervals provide a range of plausible values for the coefficients. Interpretation should consider both statistical significance and practical significance in the context of the data.

Conclusion:

Understanding the factors that contribute to Per Capita Net State Domestic Product variations among states in India is crucial for policymakers, economists, and researchers. At it is found that for ubn (Urbanization Status) and nagri (Percentage Contribution of Non-Agriculture Sector to GDP) has significant effect on Per Capita Net State Domestic Product of the states/UTs. The findings can inform regional development

strategies, economic policies, and investment decisions to foster balanced economic growth and reduce disparities among states. The results of this study may provide insights into the specific drivers of economic growth at the state level, offering policymakers targeted information to enhance development initiatives. Additionally, the findings could be relevant for investors and businesses seeking opportunities in regions with the potential for increased economic prosperity.

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Management Thoughts in Assamese Proverbs with Special Reference to Health Management

Dr. Parag Gogoi*

Abstract

In Assam, Assamese society has the richest of folklore and folk literatures or oral literature like folk song, folk tale, proverbs, maxims, proverbial sayings i.e. sayings of Dak etc. All the components of folk literatures have been transmitted to them by their ancestors from generation to generation and have shaped and nurtured them till date. It is the collection of tales passed from generation to generation and from the old to the young by word of mouth. Though there are different components of folk literature in an Assamese society, here in this study, the researcher has emphasized mainly on Assamese proverbs. The present study concentrates only Assamese proverbs which are spoken in Assamese language. There are numerous Assamese proverbs some of which have already been documented or preserved, but still some are in oral form even today. In this study the researcher has tried to contextualize the Assamese proverbs from the management perspective and to explore the health management thoughts from the Assamese proverbs. The result signifies that there is a great potential to use these proverbs as a base for developing management thoughts.
Keywords: *Management Thoughts, Assamese Proverb, Health Management*
JEL Classification: B5

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Introduction

Management has achieved enviable importance in recent times. Management is an essential element in every organisation. It also plays a pivotal role in every aspect of life. It is a dynamic subject and management thinkers are developing new theories even today. It is getting the right things done in the right way, at the right time, by the right persons with the right number of resources and effective use of resources. The importance of studying management thought consists of the knowledge of the basic theory of management, helping problem-solving, increasing managerial efficiency etc. Assamese community has the richest folklore and folk literature or oral literature like folk songs, folk tales, proverbs, proverbial sayings like the sayings or maxims of *Dak* etc. Folk literature is transmitted from generation to generation, shaping and nurturing our society. It is a collection of tales passed from generation to generation and from the old to the young by word of mouth. There are many ethnic terms or proverbs, invariably known as *prabaad*, *prabachan*, *phakara jojanaa*, *dristaanta* and *patantar,* which have been accepted in the Assamese community.

Though there are different components of folk literature in Assamese society, in this research work, the researcher has emphasised mainly on Assamese proverbs. The Assamese proverbs are vital to the Assamese folklore. Most of these proverbs are found in one or two -line verse forms containing assailable truths; hence, their popularity and importance have remained strong. The significance of these proverbs in solving various business, economic, social, monetary, family, health, agriculture and all other life-related issues cannot be denied. They have been used since time immemorial, guiding and advising simple rural folks in their daily lives. The present study intends to identify and explore the management thoughts contained in the Assamese proverbs. The study has tried to

contextualise the Assamese proverbs from the management perspective and to identify the health management thoughts in proverbs.

Review of Literature

Konch J.C. (1990) in his book *"Asomiya Bhasar Alankar Fokora Jojona"* reveals that proverbs are a resource of the Assamese language. The author described proverbs as the wisdom of many and the wit of one. They are, in effect, the capsule wisdom, the distilled knowledge of the people. They are also based on observation, experience or, without being first-hand, accepted as applicable truisms on a hand-me-down basis from the past. This book mentions sixteen hundred three numbers of proverbs in different fields related to human life and also briefly discusses their applicability.

Lauhakangas O. (2007) in his study on "Use of Proverbs and Narrative Thought" states that the functions of proverbs in social interactions. The study discusses the power of different rationality in using proverbs, the narrative strength of proverbs in social contexts, and the functions of proverbs seen through seven paradoxes, i.e. predictability, safety, detachment, maintenance of hierarchy and control, relieving situations, a uniform way of thinking and identity of a community. Although the study focuses on the use of proverbs or proverb-like sayings, namely on their functions of them in social interaction, one will find questions concerning the same themes as in folk narrative research in general: selective memory, reconstruction of experiences, explaining and reasoning about the past, giving instructions and warnings for the future, encouraging or amusing each other, etc. The study also indicates that proverbs are multifunctional and flexible instruments of everyday reasoning, although they may maintain solidified attitudes or traditional modes of thought of a specific culture.

In the research work of Muniapa B. (2008) on "Managerial Effectiveness from the Perspectives of the *Bhagavad-Gita*" attempts to explore managerial effectiveness from the perspectives of the *Bhagavad-Gita*, which presents one of the Indian (Vedic) views on managerial effectiveness. The study reveals that the philosophy of *Bhagavad-Gita* should not be viewed from spiritual perspectives only, but also as a guide in developing managerial effectiveness. The findings of the study show that the scope, content and context of managerial effectiveness are wide. The study discusses about three basic principles on improving managerial effectiveness from the selected verses from the *Bhagavad-Gita*. These three principles are mind management, management of duty and the principles of self-management.

Nachimuthu (2008) in his study on "Management Philosophies in *Ramayana*" attempts to explore and find the several management philosophies in the famous epic, the *Ramayana*. The study discusses management concepts such as planning, organising, staffing, directing and organisational behaviour. The study concludes that ancient Indian wisdom and sculptures have plenty of management concepts, and modern managers must learn and appreciate them.

Rajguru H. (1972) in his book *"Asomia Pravad"* has addressed a comprehensive compilation of Assamese proverbs and adages with an elaborate introduction. The author has picked up and collated such six thousand Assamese proverbs and all proverbs were analytically explained his book. According to author proverb may be described as a condensed parable of wisdom hailed down into essence from generation to generation.

Ramani M. (2017) in his study "An Analytical Study of Management Thoughts in *Kamba Ramayana*" examines the existence of management thoughts in *Kamba Ramayana*, an ancient Indian Tamil Literature, to establish a relationship between ancient management thoughts from *Kamba Ramayana* with the contemporary management thoughts. This particular research work made an analytical study by examining some selected verses of *Kamba Ramayana*. This research work has found the

existence of management thoughts on planning and organizing. It is explained with reference to the meaning and elucidated by quoting with recent courses in management. The study has some selected stanzas of *Kamba Ramayana* which were required for analysis of the relevance of management thoughts on directing and controlling.

Zigarell M. (2008) in his book on "Management by Proverbs: Scriptural Wisdom for Superior Results" stated that the proverbs praise and encourage others. In particular, they teach us the value of praise and specifics about how and when to offer it. They are remarkably practical advice and strikingly transcendent. The study is comprised of six different parts; each part covers various principles. These parts lay a foundation for success, excel at the essentials, build a competitive workforce, cultivate a culture of commitment, measure and reward performance and control workplace conflict.

The research objectives considered in the study are i) To contextualise the Assamese proverbs from the management perspective, 2) To explore the health management thoughts in Assamese proverbs, and 3) To assess the philosophical base of these proverbs and the extent of their uses in forming management thoughts.

Research Question

Based on the review of related literature, research question is formulated to be addressed in the study - Are there any significant indicators relating to management thoughts in Assamese proverbs?

Database and Methodology

The present study deals with the Assamese proverbs practised among the people of the Assamese community and entire Assamese folks. The study is a humble and sincere effort of the researcher to find out the management thoughts contained in the Assamese proverbs. The study is interpretative and exploratory. The choice of research method primarily depends on the research questions and the type of data the researcher wants to collect. The data for the present research work has been collected from secondary sources i.e. from relevant books written by various Assamese eminent authors, relevant literature by scholars. More than a hundred nos. of Assamese proverbs are published in books associated with different subject matters. However, in this study, the researcher has selected and collected a total of nine Assamese proverbs which are mostly related to health care of an individual.

Results and Discussion

Following are the important proverbs which are directly related to health care management. The meanings and interpretation of these Assamese proverbs have been discussed below and it is pertinent to mention that the below mention proverbs have been marked as **P-1, P-2……** and so on. (**P-1: Proverb No 1**)

(**P- 1**)

Deha thakilehe beha

(Only a healthy body allows you to perform well in all affairs of your life.)

This proverb means that only a physically healthy person can engage in commercial/economic activities. Health is compared to wealth and money because only a healthy person can have the will to do something and achieve success in life. On the other hand, when we are unhealthy and sick, we cannot concentrate well on our duties. We become compelled to spend our time and money on regaining lost health. Thus, our expenditure will be more on our health concerns. So, appropriate care should be taken for our health to perform our activities well.

Health is wealth. Good health is the key to happiness. We must follow a great quote in health by Mahatma Gandhi: "health is real wealth and not pieces of gold and silver." This Assamese proverb warns us to be cautious and conscious about our health. It

sensitises us to remain free from diseases and to stay healthy. Therefore, remaining alert and taking proper care of our health is of utmost importance in managing our health. This Assamese proverb teaches an individual to take proper care of his health as a healthy person can work hard to prosper in life and thus brings financial success. Likewise, the owner and all the employees of a business organisation must strive for health because it is only their good health that will permit them to prove their efficiency.

(P- 2)
Bachi khaba, jaagi huba
(Be vigilant anywhere and at any time.)

This proverb advises that before performing any task, a person must proceed carefully, consciously and reasonably to succeed in that particular task. Similarly, before eating anything, we must always be careful and moderate as overeating harms our health and body. It is also essential to eat healthy foods and avoid unhealthy ones. This proverb teaches us the importance of healthy, hygienic foods to prevent human diseases. Therefore, this proverb suggests eating adequate food to remain healthy. Also, it instructs to maintain alertness during the day and night. These are the prerequisites for a quality lifestyle.

(P-3)
Una bhate duna bal, adhik bhate rakhatal
(Balanced eating habit makes a healthy body, whereas overeating makes a body a storehouse of disease.)

"Una vat" means less rice and *"duna bal"* means double strength. It is very important to maintain a balanced diet to remain healthy. Gluttony is injurious to health. Whatever a person eats, he must not eat full stomach and keep a portion of his stomach empty to sustain good health. A person should fill half of his stomach with food, one part to be filled with water and the other part; he should be kept empty to remain healthy. This Assamese proverb is related to handling health management because to remain healthy and strong, it is very important to maintain a balanced diet and to take care of our health by using moderate eatables.

Excess of anything is always bad - this is what this particular proverb suggests. If a man overeats, he will feel lethargic and will have no mood to work. On the other hand, adequate and quality food helps one to remain healthy and productive. Maintaining a limit in eating is necessary to maintain good health and manage our health problems as overeating causes serious damage to our internal organs like the liver and kidneys.

(P-4)
Gaa bhale mon bhal
(A sound mind entirely depends on a sound body/a sound mind is only possible in a healthy.)

This Assamese proverb means that only a healthy person has a sound mind. When a person is healthy, no diseases can hurt him. A healthy person can perform his tasks well than an unhealthy person. The human body and mind are dependent and interrelated with each other. So, we must take appropriate care of our health, especially if we all strictly maintain regular exercise, good eating habits and sound sleep at night. There is a saying that only in a wonderful body, there will be a great mind. So, we all need a healthy body and a sound mind to develop every activity in life.

(P-5)
Alop bemarot nidie owsad, bistor hole hoi maha bipod
(Negligence to any ailment during the initial stage of its occurrence may lead to dire consequences.)

This Assamese proverb warns us to take care of our health and seek medical help at the preliminary stage of any sickness. If proper medicine or treatment is administrated at the initial stage, there is less chance of further completion. This proverb tells us always to be conscious of our health even when we think we are healthy. There may be some

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underlying health-related issues. This proverb has a strong message, especially for those who do not take proper care of their health. Medicines should be used as early as possible and consulting a doctor is necessary whenever a person suffers from an illness, especially in the present age, when our immune system is not strong due to our poor eating habits and pollution. This proverb has a health management thought which teaches us that appropriate health care should be taken and it is better to prevent diseases than to cure them.

This Assamese proverb makes it clear it is better to take medicines at the earliest stage of any disease so that the disease will not become severe. Therefore, whenever we see any disease symptoms, we should not neglect but consult a doctor immediately.

(P- 6)
Tenga khai nakhai pani, jome manuhe tanatani

(Do not drink water after eating citrus fruits; otherwise, there will be a tug-of-war between men and the god of death.)

This Assamese proverb advises that we should never drink water after eating acidic fruits because it harms our health and body. Acids may penetrate inside our body with water causing severe damage to our internal organs and sensitive tissues. It may eventually become poisonous, resulting in even the death of that particular person. So, it is necessary to avoid it.

It sounds almost over the top that we have a popular saying that warns about eating fruit, but Assam is home to many varieties of citrus fruits, and people love to eat them. People's love for these fruits may pose serious health concerns, that are the premise of this proverb, and it cautions people that they should exercise caution while eating them. A seemingly innocuous fruit may become deadly if we couple it with other elements.

(P-7)
Bhukat bhat piahot pani, tak nakhale bal hoi haani

(To maintain body strength, take adequate food and water at the right time and when needed.)

This is one of the most important Assamese proverbs, which declares that if we do not eat and drink at the right time, we will become weak and lose our strength and stamina. In this busy world, some people remain so busy that they forget to eat timely and suffer later from various health problems. To maintain good health, we must eat and drink when we are hungry and thirsty. We must have a timetable for eating because rice and water provide us with the energy to do day-to-day work. This proverb teaches us that a person should always take his food on time to maintain good health and remain strong.

(P-8)
Sunkale huba, sunkale uthiba, tehe dehor santi paba

(Going to bed early and getting up early in the morning help a man to lead a more successful life in terms of health, wealth and wisdom.)

This proverb emphasises getting up early in the morning and going to sleep early as well. Waking up early, if one does some physical exercises and breathes fresh air, will remain healthy and active for a long period. With a healthy body, a man can work efficiently and have better financial status.

This Assamese proverb indicates the health benefits of sleeping early and waking up early in the morning. A person receives much when he wakes up early. He can do his work on time; he becomes healthier and wiser by waking up early. Therefore, sleeping early and waking up early are particularly important for managing our health well.

(P-9)
Bhara petat fal, khali petat jal

(Take fruit and water during some specific time of the day.)

The Assamese people believed that when your stomach is full, eat fruits; and when your stomach is empty, drink water. After eating food, it is good to eat fruits that help

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digestion. At night and in the morning when your stomach is empty, it is good for your health to drink water. This Assamese proverb teaches us that fruits and water are essential to remaining healthy.

The proverb highlights that eating fruits on a full stomach and drinking water on an empty stomach is good for health. Therefore, we should fruit to maintain good health, as fruits provide us with many vitamins and supplements. Similarly, drinking water on an empty stomach is good for our health. Therefore, the maximum health benefit is achieved when we follow this advice.

Various health management thoughts discussed here place importance on maintaining an individual's good health. The suggestions and practices put forward here teach an individual the importance and means of remaining healthy. Good health is the prerequisite for success both in the personal and professional field, and the absence of it will bring failure. The Assamese folk which are very much associated with the Assamese proverbs follow the principles suggested in these proverbs and thus can maintain good health. The study also explains the proverbs' literal meaning as well as their implications in business and organisation management, has been explained.

Findings of the Study

The findings from the Assamese proverbs related to health management are cited as under-

- The proverb 'Only a healthy body allows you to perform well in all affairs of your life' unveils that only a physically healthy person can engage in commercial/economic activities. It has been revealed that remaining alert from various health-related issues and taking proper care of our health is of utmost importance in managing our health. A healthy person can work hard to prosper in life, thus bringing financial success. Likewise, the owner and all the employees of a business organisation must strive for health because it is only their good health that will permit them to prove their efficiency.
- One of the Assamese proverbs, 'Balanced eating habit makes a healthy body whereas overeating makes a body a storehouse of disease', is related to handling health management. The saying stresses that a balanced diet is necessary to remain healthy and strong and to take care of our health by using moderate eatables. Excess of anything is harmful to health. If anyone overeats, they will feel lethargic and unable to work with complete attention. But on the other hand, adequate and quality food helps one to remain healthy.
- It is revealed that a healthy person can perform his task well than an unhealthy person. Without a healthy body, there cannot be a sound mind. So, we must take appropriate care of our health, especially if we all strictly maintain regular exercise, good eating habits and sound sleep at night. A man with a healthy body and mind can work efficiently in his daily life. If the employees of an organisation are enjoying good physical and mental health, they can render their perfect services, which will lead the organisation to the highest level. Similarly, in a business organisation, a physically fit person with a sound mind can contribute to the company's success.
- The proverb 'Negligence to any ailment during the initial stage of its occurrence may lead to dire consequences' advises us to take care of our health and seek medical help at the preliminary stage of any sickness. Proper medicine or treatment at the initial stage reduces the risk of further completion. This proverb has a strong message, especially for those who do not take proper care of their health and suffers a lot. Like with health, if any problem or severe issue emerges in business management, it should be dealt with immediately.

- One of the Assamese proverbs, 'Habits of going to bed early and getting up early in the morning, it helps a man to lead a more successful life in terms of health, wealth and wisdom,' depicts that one should make it a habit of getting up early in the morning and going to sleep early. Waking up early, if one does some physical exercises and breathes fresh air, one will remain healthy and active for a long time.

Health Management Philosophy

The present study deals with the health management philosophy found in these Assamese proverbs and their applicability in the health care of an individual in their personal and professional lives. The philosophy of health care management concerns giving the common people correct health knowledge to reduce risky behaviour and help them to better lives. Some of the Assamese proverbs highlight about the person's personal and professional life. However, some of them have found to be applicable in personal life only. The attributes of Assamese proverbs are to develop healthy attitudes towards health. The rural Assamese folk of Assam are ardent followers of Assamese proverbs which teach them how to maintain good health by following the philosophical ideas lying behind them.

Perfect health is a necessary pre-requisite for personal and professional life. (Source: P-1)

A physically healthy person can engage in any commercial and economic activity. This health management philosophy teaches an individual to take proper care of his health as a healthy person can work hard to prosper in life and thus brings financial success.

When it is said that only a healthy body allows an individual to do his commercial and economic activities well, it stresses an important health philosophy. If we preserve our health, avoid illness and avoid risky behaviour, our engagement with our business activity will be continuous and up to the level of expectation. If the employees of an organisation are enjoying good physical and mental health, they can render their perfect services which will lead the organisation to the highest level. Therefore, the owner and all the employees of a business enterprise should strive for health because it is only their good health that will permit them to prove their efficiency.

Besides being vigilant, one should have moderate eating habits (Source: P-3)

A prominent health philosophy which is put forward by Assamese proverbs gives the idea that by controlling our diet we can remain free from various health-related problems. It is suggested that we should take an adequate amount of food for everybody.

The proverb concerned superficially bears the idea that we should remain awake while we sleep. In reality, the philosophy that lies behind this idea is that one should be vigilant all the time of the day. Success in both personal and professional life also depends on eating habits. It is suggested to develop moderate eating habits to remain healthy. Such a man is never surprised by disasters. One should also select the things properly that he should eat. We must always be careful and moderate as overeating is injurious to our health and body. It is also essential to eat healthy foods and avoid unhealthy ones. The proverb advises that before performing any task, a person must proceed carefully, consciously and reasonably to succeed in that particular task.

A sound mind dwells in a healthy body (Source: P-4)

The philosophy lies here says that only a healthy person has a sound mind. A healthy person can perform his task well than an unhealthy person. Without a healthy body, there cannot be a sound mind.

Lord Buddha said, *"To keep the body in good health is a duty…otherwise we shall not be able to keep the mind strong and clear"*. The Assamese proverb deals with health not only physical and mental health. We know that physical fitness is the first requisite of happiness for living a happy and peaceful life. If the employees of an organisation are enjoying good physical and mental health, they can render their perfect services which will lead the organisation to the highest level. Similarly, in a business

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organisation, a physically fit person with a sound mind can contribute enough to the company's success.

Combat a disease at the initial stage before it becomes too big (Source: P-5)

The philosophy of health care urges us to take care of our health and seek medical help at the preliminary stage of any sickness. If proper medicine or treatment is administered at the initial stage, there is less chance of further complications. The proverb has a health management thought which teaches us that appropriate care for health should be taken and it is better to prevent diseases than to cure them. Likewise, if any problem or serious issue emerges in business management, it should be dealt with immediately; otherwise, it will grow bigger and go out of control for the management. Prevention is better than cure. Here we get on a universal idea about healthcare management. It is better to develop the immune system of an individual by taking naturally available food. If one enjoys a strong immunity, he can prevent disease in the days to come. It is better to protect our health beforehand than wait for the diseases to attack and visit the doctor.

Take meals at the appropriate time (Source: P-7)

Another important philosophy put forward by the Assamese proverbs expresses that one should eat and drink at the right time every day. Good health and the right eating habit at the right time is complementary to each other. This philosophy applies to a business organisation also. Doing the right thing at the right time will bring the desired result. If work and timing do not match, the organisation may not achieve the expected result; there should be a schedule to follow regarding the business activities undertaken by a company or an organisation.

Early to rise and early to bed. (Source: P-8)

This health management philosophy stresses the importance of getting up early in the morning and going to sleep early. Waking up early, if one does some physical exercises and breathes fresh air, one will remain healthy and active for a long time. The health management philosophy indicates the health benefits of sleeping early and waking up early in the morning. Therefore, the Assamese folks follow health management principles like sleeping early and waking up early to gain health and wisdom.

Eat fruits on a full stomach and drink water on an empty stomach (Source: P-9))

This principle teaches us that fruits and water is essential to remain healthy. It is seen from this philosophy that eating fruits on a full stomach and drinking water on an empty stomach is good for health.

The health management philosophy brings to light some important health management thoughts and principles ranging from the selection of eatable items, the amount to be taken, the time of taking the food item and also the things to be avoided by the people to maintain a healthy and balanced life. Moreover, by maintaining a good immune system, he or she will be a true service provider for the welfare of society.

Conclusion

Health management is an important part of life management and it is utmost importance nowadays. It is necessary to be health conscious, remain free from diseases, take prevention, maintain cleanliness, and eat healthy foods. Hygiene is needed to manage our health properly. Assamese proverbs give lots of ideas about health management, which are useful for maintaining better health. They teach us to be moderate in eating as overeating is harmful to health. They show the effect of herbal remedies in the matter of health concerns and advise the appropriate care of our health management to stay healthy.

The study highlighted various management thoughts on the health and well-being of the people in institutions and organisations. The basic thoughts which have come out from the present study are about health-care management of an individual in his personal as well as professional life. The performance of healthy employees of an organisation is

likely to be higher and more productive than those who are sick and unhealthy. Just like capital and other necessary resources, the health of the employees in an organisation is of great importance. Here the concept of health does not merely refer to physical health. It reflects psychological and overall well-being. These particular Assamese proverbs help us to understand proper healthcare management. Applying the essence of these proverbs can guide everyone in effectively managing their daily health care.

Furthermore, Assamese proverbs have dealt with ethics and processes of taking food items consumed by the people of Assamese society. For example, these sayings guide the people on when to be eaten and when not, and how much to be eaten and how much not. Although it is not been tested scientifically but widely it is been practiced among the rural people of Assam. Thus, the study addresses management thoughts hidden in the Assamese proverbs.

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Sustainable Entrepreneurship Through Effective Waste Management Strategies: A Study in Kokrajhar, Assam, India

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Abstract

Inappropriate waste dumping is widely recognized as a significant contributor to contamination and is closely linked to health-related concerns. The responsible management and disposal of household waste pose a pressing challenge in India's major cities. This article explores the role of entrepreneurs in the municipal solid waste market, particularly from an Indian perspective. It is estimated that global waste production will exceed four billion tons by the year 2050, more than double the amount recorded in 2016. This rapid increase can be attributed to the growing urban population and evolving consumption patterns in recent years, although this growth is expected to slow down in the coming years. Across the world, municipalities are adapting to smart waste management technologies and seeking solutions to reduce the burden of waste collection services. Entrepreneurial ventures are actively engaged in generating profits while simultaneously contributing to the preservation and efficient utilization of valuable resources. They also play a significant role in maintaining public cleanliness and, in many cases, introducing innovative environmental safeguards. The efficient and proper collection and disposal of solid waste have long been recognized as critical factors for societal cleanliness and public health. This paper aims to shed light on the strategies employed by entrepreneurs and households, as well as their perspectives on waste management in our country.

Keywords: *Inappropriate Dumping, Entrepreneurship, Health issue, Household waste, Waste management*

JEL Classification: C81, C83, C88

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Introduction

Compared to more developed countries, waste management faces numerous challenges in emerging nations. Additionally, solid waste generation rates are higher in emerging nations due to the rapid growth of urban populations and businesses (Boadi, 2005). Inappropriate solid waste management can be attributed to various factors, including inadequate financial management and transportation, deficient municipal infrastructure, unbalanced planning strategies, a lack of regard for basic aesthetics, industrial and commercial expansion, as well as attitudes and socio-cultural customs (Ishak and Dadson). To mitigate these negative impacts, it is essential to integrate the informal sector into proper solid waste management. This can be achieved by assisting in the organization of informal sector workers and adding value to recovered resources before trading them. Individuals with limited skills or education often view the absence of government services as an opportunity to earn a living. Moreover, the informal recycling industry can offer economic benefits to emerging nations by reducing capital expenditures and increasing labour productivity (Wilson, 2006).

Smart waste management encompasses various approaches that leverage expertise to enhance the efficiency, profitability, and environmental friendliness of waste collection. Many of these systems incorporate the Internet of Things (IoT), a monitoring technology that gathers and analyzes real-time data to facilitate garbage collection and

inspire future innovations. As noted by Ogawa (2005), several challenges affect waste management in developing nations, including a shortage of human resources, especially technical expertise, at both the national and local levels. Additionally, there is a lack of research and development efforts in the field of waste management. Due to the inconsistent economic and industrial development in developing nations, there often isn't sufficient funding available to establish a sustainable solid waste management system. The concept of "zero waste" represents a significant breakthrough in the pursuit of full sustainability in waste management systems in the twenty-first century (Zaman & Lehmann, 2011).

The Environmental Protection Agency (EPA) reports that roughly 75% of waste is recyclable, but regrettably, only around 30% of decomposable materials are recycled. Given that households collectively generate slightly more than 2 billion tonnes of waste each year, this amounts to a significant volume of unnecessary waste ending up in landfills and rivers. Furthermore, there remains a notable lack of demographic and socioeconomic diversity within sustainable and circular business initiatives. The majority of efforts have predominantly focused on high-tech, high-growth businesses founded by men, inadvertently excluding female, minority, and low-income entrepreneurs from participating in these sustainability initiatives (Neumeyer and Santos, 2018).

Waste Management in India

The increase in population and improved living standards contribute to a surge in solid waste generation, impacting both urban and rural areas across the country. In India, as in many other nations, there is a noticeable contrast between urban and rural solid waste management. However, with rapid urbanization, the widespread adoption of the "use and dispose" mentality, and increased communication between urban and rural regions, the gap between the two is narrowing.

Solid waste in rural areas tends to be more biodegradable, while urban waste contains a higher proportion of non-biodegradable components like plastics and packaging materials. Nonetheless, both urban and rural areas often exhibit a problematic attitude towards solid waste and its disposal, with the prevailing practice being to "keep rubbish out of sight."

In India, urban local authorities, often referred to as municipal corporations or councils, are responsible for public health-related activities, including solid waste management. However, with growing public and political awareness, as well as new opportunities arising from economic growth, solid waste management is now receiving the attention it deserves. Over the past few decades, the number of initiatives undertaken by the government, NGOs, commercial enterprises, and the general public has significantly increased.

Despite these efforts, landfilling remains the predominant method of solid waste disposal in many countries worldwide, including India. The principles of waste management often revolve around the 3Rs:

Reducing: This involves minimizing our overall consumption, respecting our natural resources, consuming only what is necessary, and rejecting unnecessary excess.

Reuse: Reuse is essential for prolonging the lifespan of the items we use. It includes repairing or upcycling our belongings to give them new life, reducing the need for disposal.

Recycling: Recycling the waste, we generate is crucial for closing the loop in a continuous economic model, where materials are reused and repurposed rather than discarded.

These 3R principles serve as a guide to more sustainable and responsible waste management practices.

The existing studies voids The global waste issue is a persistent challenge that shows no signs of disappearing anytime soon. Existing waste management systems are often ill-equipped to handle the growing volume of waste generated due to increasing populations. To bridge this gap, communities need to implement smart waste management solutions that can enhance efficiency, reduce collection costs, and divert more waste away from landfills.

The manufacturing process has evolved into a complex system that relies heavily on composite and hazardous materials. Consequently, the waste generated today comes from a variety of sources, poses environmental risks, and presents significant sustainability challenges. The diversity of waste sources often forces decision-makers to resort to inefficient and environmentally damaging waste management options, such as landfills. In urban areas, the scarcity of disposal sites further complicates waste management, necessitating alternative strategies (Wen et al., 2009).

There is limited prior research on waste management, and this study aims to fill that gap by examining the individual impact of waste management and entrepreneurship.

Objectives and Hypotheses of the Study

To investigate the factors associated with the waste management system.

To assess the knowledge sharing of health and safety measures through proper waste management by households.

To examine the challenges faced by entrepreneurs in implementing waste management.

To evaluate the reliability and validity of the items in the waste management instrument.

H_0: There is no significant relationship among the dimensions of factors associated with the waste management system.

H_0: There is no significant difference between mean ranks regarding factors associated with the waste management system.

Database and Methodology

The study employed a quantitative method of data collection through the distribution of questionnaires among various respondents. The research was conducted among households in Kokrajhar, Assam, India. A questionnaire-based survey was used to gather responses from households regarding their views on waste management. The factors considered in the study were identified from previous research in the field. Respondents were randomly selected, and data were collected through the questionnaire. Only primary data from filled questionnaires were used. A Likert scale was employed to assess households' evaluations of factors associated with the waste management system. Out of 600 questionnaires distributed, 526 (87.6%) were completed and returned, 43 (8.17%) were incomplete, and 31 (5.89%) were not returned. The reliability of the filled questionnaires was evaluated.

From Table 1, it is evident that the Cronbach Alpha values for all variables range between 0.916 and 0.880. These values meet the requirement of being above 0.70, indicating a high level of internal consistency among the questionnaire items. As a result, no items needed to be deleted, and all indicators were retained for data collection.

The internal consistency assessment reveals that all variables, including "Local government need to effectively implement waste management methods," "Law and policies are made mandatory," "Waste generation and disposal are made aware," "Public education campaigns on waste management are conducted," "Government needs to find sources of fund for waste management," "Private sectors are encouraged for paid services," "Jobs creation is encouraged," "Requirements on long-term operating and maintenance costs," "Availability of equipment and facilities," "Requirement of skilled labour," "Safeguard natural resources," and "Ensure human health risks minimization," demonstrated a high level of reliability, with an overall internal consistency score of 0.916. Notably, the variable with the highest reliability was "Ensure human health risks minimization."

Table 1: Reliability Test Variables of Factors associated with waste management system

Sl. No.	Variables	Items	Cronbach's Alpha	Remarks
1	Local governments need to effectively implement waste management methods	**IF1**	0.890	Excellent
2	Law and policies are made mandatory	**IF2**	0.893	Excellent
3	Waste generation and disposal are made aware	**SF1**	0.900	Excellent
4	Public education campaigns on waste management are conducted	**SF2**	0.901	Excellent
5	Government needs to find sources of funds for waste management	**FF1**	0.895	Excellent
6	Private sectors are encouraged for paid services	**FF2**	0.897	Excellent
7	Job creation is encouraged	**EF1**	0.888	Excellent
8	Requirements on long-term operating and maintenance costs	**EF2**	0.880	Excellent
9	Availability of equipment and facilities	**TF1**	0.889	Excellent
10	Requirement of Skilled labourers	**TF2**	0.911	Excellent
11	Safeguard natural resources	**ENF1**	0.912	Excellent
12	Ensure human health risks minimisation	**ENF2**	0.916	Excellent

Source: Author's Compilation

As a result, all the indicators were deemed suitable for data collection, and no modifications or exclusions were required based on the internal consistency analysis.

Table 2: Reliability Test Variables of Challenges faced by Entrepreneurs in imposing waste management

Sl. No.	Variables	Items	Cronbach's Alpha	Remarks
1	Lack of financial resources	C1	0.890	Excellent
2	Lack of access to technical knowledge of equipment	C2	0.891	Excellent
3	Lack of local government support	C3	0.894	Excellent
4	Lack of sufficient staff for handling waste management	C4	0.890	Excellent
5	Lack of communication with households regarding waste disposal	C5	0.889	Excellent
6	Lack of public awareness	C6	0.896	Excellent

Source: Author's Compilation

In Table 2, it is apparent that the Cronbach Alpha values for all variables range between 0.896 and 0.890. These values meet the requirement of being above 0.70, indicating a strong level of internal consistency among the questionnaire items. Therefore, no items required deletion, and all indicators were retained for data collection.

The internal consistency analysis reveals that all variables, including "Lack of financial resources," "Lack of access to technical knowledge of equipment," "Lack of local

government support," "Lack of sufficient staff for handling waste management," "Lack of communication with households regarding waste disposal," and "Lack of public awareness," demonstrated a robust level of reliability, with an overall internal consistency score of 0.896. Notably, the variable with the highest reliability was "Lack of public awareness."

As a result, all the indicators were deemed suitable for data collection, and there was no need for modifications or exclusions based on the internal consistency analysis.

Results and Discussion

The demographic profile of respondents regarding waste management reveals the sample results. Out of the total respondents, 357 (67.9 per cent) are female, while 169 (32.1 per cent) are males.

Among the respondents, 143 (27.2 per cent) are unmarried, and 383 (72.8 per cent) are married.

H_0: There is no significant relationship among the dimensions of factors associated with the waste management system.

Table 3. Inter Correlation Matrix on Dimensions of Factors associated with waste management system

Dimensions	Institutional Factors	Social Factors	Financial Factors	Economic Factors	Technical Factors	Environmental Factors
Institutional Factors (IF)	1	0.889**	0.916**	0.983**	0.915**	0.816**
Social Factors (SF)	-	1	0.852**	0.926**	0.879**	0.801**
Financial Factors (FF)	-	-	1	0.942**	0.888**	0.815**
Economic Factors (EF)	-	-	-	1	0.908**	0.763**
Technical Factors (TF)	-	-	-	-	1	0.877**
Environmental Factors (ENF)	-	-	-	-	-	1

Note: ** Correlation is significant at the 0.01 level (2-tailed).

Source: Author's Compilation

Table 3 presents the correlation coefficients between various factors related to waste management.

The results are given below:

❖ The correlation coefficient between Institutional Factors and Social Factors is 0.889, indicating a high positive relationship of 89 per cent between Institutional Factors and Social Factors. This relationship is statistically significant at the 1% level.

❖ The correlation coefficient between Institutional Factors and Financial Factors is 0.916, suggesting a high positive relationship of 92 per cent between Institutional Factors and Financial Factors. This relationship is also statistically significant at the 1% level.

❖ The correlation coefficient between Institutional Factors and Economic Factors is 0.883, signifying a high positive relationship of 88 per cent between Institutional Factors and Economic Factors. This relationship is statistically significant at the 1% level.

❖ The correlation coefficient between Institutional Factors and Technical Factors is 0.915, indicating a high positive relationship of 92 per cent between Institutional Factors and Technical Factors. This relationship is statistically significant at the 1% level.

- ❖ The correlation coefficient between Institutional Factors and Environmental Factors is 0.816, denoting a high positive relationship of 82 per cent between Institutional Factors and Environmental Factors. This relationship is statistically significant at the 1% level.
- ❖ The correlation coefficient between Social Factors and Financial Factors is 0.852, showing a high positive relationship of 85 per cent between Social Factors and Financial Factors. This relationship is statistically significant at the 1% level.
- ❖ The correlation coefficient between Social Factors and Economic Factors is 0.926, indicating a high positive relationship of 93 per cent between Social Factors and Economic Factors. This relationship is statistically significant at the 1% level.
- ❖ The correlation coefficient between Social Factors and Technical Factors is 0.879, suggesting a high positive relationship of 88 per cent between Social Factors and Technical Factors. This relationship is statistically significant at the 1% level.
- ❖ The correlation coefficient between Social Factors and Environmental Factors is 0.801, signifying a high positive relationship of 80 per cent between Social Factors and Environmental Factors. This relationship is statistically significant at the 1% level.
- ❖ The correlation coefficient between Financial Factors and Economic Factors is 0.942, demonstrating a high positive relationship of 94 per cent between Financial Factors and Economic Factors. This relationship is statistically significant at the 1% level.
- ❖ The correlation coefficient between Financial Factors and Technical Factors is 0.888, denoting a high positive relationship of 89 per cent between Financial Factors and Technical Factors. This relationship is statistically significant at the 1% level.
- ❖ The correlation coefficient between Financial Factors and Environmental Factors is 0.815, indicating a high positive relationship of 82 per cent between Financial Factors and Environmental Factors. This relationship is statistically significant at the 1% level.
- ❖ The correlation coefficient between Economic Factors and Technical Factors is 0.908, showing a high positive relationship of 91 per cent between Economic Factors and Technical Factors. This relationship is statistically significant at the 1% level.
- ❖ The correlation coefficient between Economic Factors and Environmental Factors is 0.763, suggesting a high positive relationship of 76 per cent between Economic Factors and Environmental Factors. This relationship is statistically significant at the 1% level.
- ❖ The correlation coefficient between Technical Factors and Environmental Factors is 0.877, denoting a high positive relationship of 88 per cent between Technical Factors and Environmental Factors. This relationship is statistically significant at the 1% level.

These correlation coefficients provide valuable insights into the relationships between various factors related to waste management and indicate their strength and significance levels.

H_0: There is no significant difference between mean ranks towards factors associated with waste management system

Table 4: Friedman test for significant difference between Mean Ranks towards Factors associated with waste management system

Sl. No.	Particulars	Items	Mean Rank	Chi-Square Value	P Value
1	Local governments need to effectively implement waste management methods	**IF1**	1.39	58.537	0.000**
2	Law and policies are made mandatory	**IF2**	1.61		

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3	Waste generation and disposal are made aware	**SF1**	1.38	39.103	0.000**
4	Public education campaigns on waste management are conducted	**SF2**	1.62		
5	Government needs to find sources of funds for waste management	**FF1**	1.48	1.685	0.000**
6	Private sectors are encouraged for paid services	**FF2**	1.52		
7	Job creation is encouraged	**EF1**	1.68	186.000	0.000**
8	Requirements on long-term operating and maintenance costs	**EF2**	1.32		
9	Availability of equipment and facilities	**TF1**	1.38	44.574	0.000**
10	Requirement of Skilled labourers	**TF2**	1.62		
11	Safeguard natural resources	**ENF1**	1.43	15.114	0.000**
12	Ensure human health risks minimisation	**ENF2**	1.57		

Source: Statistically analyzed data

Note: ** Denotes significance at 1 % level

Based on the analysis of mean ranks and the significance of p-values, it can be concluded that there is a significant difference between the mean ranks of various factors associated with the waste management system. The key findings for each factor category are:

Financial Factors:
- The best factor is 'Public education campaigns on waste management are conducted' (mean rank: 1.62).
- Followed by 'Waste generation and disposal are made aware' (mean rank: 1.38).
- The p-value is less than 0.01, leading to the rejection of the null hypothesis. Therefore, there is a significant difference between the mean ranks of factors related to financial aspects of waste management.

Economic Factors:
- The best factor is 'Jobs creation is encouraged' (mean rank: 1.68).
- Followed by 'Requirements on long-term operating and maintenance costs' (mean rank: 1.32).
- The p-value is less than 0.01, resulting in the rejection of the null hypothesis. This implies a significant difference in mean ranks concerning economic factors.

Technical Factors:
- The best factor is the 'Requirement of Skilled Labourers' (mean rank: 1.62).
- Followed by 'Availability of equipment and facilities' (mean rank: 1.38).
- The p-value is less than 0.01, leading to the rejection of the null hypothesis. Thus, there is a significant difference in mean ranks related to technical factors.

Environmental Factors:
- The best factor is 'Ensure human health risks minimization' (mean rank: 1.57).
- Followed by 'Safeguard natural resources' (mean rank: 1.43).
- The p-value is less than 0.01, resulting in the rejection of the null hypothesis. Therefore, there is a significant difference in mean ranks concerning environmental factors.

These findings suggest that there are notable distinctions in how various factors associated with waste management are perceived and ranked by the respondents. These differences are statistically significant, as indicated by the low p-values, reinforcing the conclusion

that there is a significant difference in mean ranks across different aspects of waste management.

Table 5: KMO and Bartlett's Test for Challenges faced by Entrepreneurs in imposing waste management

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.808
Bartlett's Test of Sphericity	Approx. Chi-Square	1699.458
	df	15
	Sig.	0.000**

Source: Author's Compilation

The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy is a statistic used to assess whether factor analysis is appropriate for a given dataset. A high KMO value indicates that the dataset is suitable for factor analysis because it suggests that there is a substantial amount of common variance among the variables, making it likely that underlying factors exist.

In our case, we have a KMO value of 0.808, which is relatively high. This suggests that factor analysis is a good fit for the variables related to 'Challenges faced by Entrepreneurs in imposing waste management,' as there is a significant amount of shared variance among these variables.

Additionally, Bartlett's test of sphericity is another statistical test used to determine if the variables in a dataset are unrelated. A low p-value (typically less than 0.05 or 0.01) in Bartlett's test indicates that the variables are not unrelated and that factor analysis is appropriate.

In our analysis, we have mentioned that the p-value from Bartlett's test is less than 0.01, indicating that the test is significant at the 1% significance level. This result further supports the suitability of factor analysis for your dataset, as it suggests that the variables are not unrelated and that there are underlying factors that can be extracted through factor analysis.

In summary, both the high KMO value and the significance of Bartlett's test indicate that factor analysis is a suitable and meaningful approach for understanding the relationships among the variables related to 'Challenges faced by Entrepreneurs in imposing waste management.'

Measurement Model of Challenges Faced by Entrepreneurs in Imposing Waste Management (CWM)

Table 6 presents the results of the Confirmatory Factor Analysis (CFA) measurement model for assessing the validity of the "Challenges faced by Entrepreneurs in imposing waste management." The analysis was conducted using AMOS software to examine the relationships between the six items that make up this construct. The measurement model, which includes the CFA loadings for each item, is depicted in the figure.

Notably, all six-item factor loadings exceeded the commonly accepted range of 0.50. This implies that each item in the measurement model demonstrates a strong and significant relationship with its respective construct. These results confirm the validity of the measurement model for assessing the challenges faced by entrepreneurs in waste management.

As a result, the finalized measurement model serves as the baseline model for subsequent cross-validation and research, providing a solid foundation for investigating the challenges encountered by entrepreneurs in waste management.

Table 6: Reliability and Validity results of Challenges faced by Entrepreneurs in imposing waste management

| Sl. No.	Item(s) of Challenges Faced by Entrepreneurs in Imposing Waste Management	Factor Item	CFA loading
1	Lack of financial resources	**C1**	1.000
2	Lack of access to technical knowledge of equipment	**C2**	0.838
3	Lack of local government support	**C3**	0.900
4	Lack of sufficient staff for handling waste management	**C4**	0.880
5	Lack of communication with households regarding waste disposal	**C5**	0.840
6	Lack of public awareness	**C6**	0.790

Source: Author's Compilation

Table 6 provides the validity assessment values for each item in the "Challenges faced by Entrepreneurs in imposing waste management" questionnaire. These validity values indicate the strength of the relationship between each item and the construct it represents. Here are the validity values for each item:

❖ Lack of financial resources: Validity value of 1.000.
❖ Lack of access to technical knowledge of equipment: Validity value of 0.838.
❖ Lack of local government support: Validity value of 0.900.
❖ Lack of sufficient staff for handling waste management: Validity value of 0.880.
❖ Lack of communications with households regarding waste disposal: Validity value of 0.840.
❖ Lack of public awareness: Validity value of 0.790.

These validity values help confirm the extent to which each questionnaire item accurately measures the specific challenges faced by entrepreneurs in waste management. A validity value of 1.000 indicates a perfect fit between the item and the construct, while values below 1.000 still suggest a strong and acceptable relationship. These results contribute to the overall validity and reliability of the questionnaire and the measurement model for assessing these challenges.

Figure 1. Revised Hypothesized Model for Challenges faced in imposing waste management
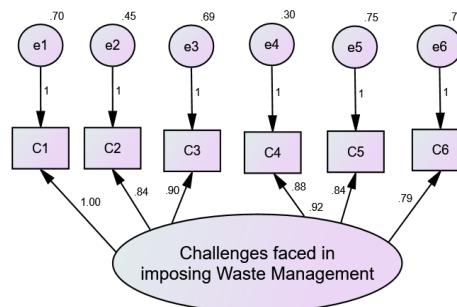
Measurement Model of Factors Associated with Waste Management System (FWM)

Table 7 provides the results of the Confirmatory Factor Analysis (CFA) measurement model for assessing the validity of the "Factors associated with the waste management system." The analysis was conducted using AMOS software to examine the relationships

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between the six items that make up this construct. The measurement model, which includes the CFA loadings for each item, is depicted in the figure.

It is noteworthy that all six-item factor loadings exceeded the commonly accepted range of 0.50. This implies that each item in the measurement model demonstrates a strong and significant relationship with its respective construct. These results confirm the validity of the measurement model for assessing the factors associated with waste management systems.

As a result, the finalized measurement model serves as the baseline model for subsequent cross-validation and research, providing a solid foundation for investigating the factors related to waste management systems.

Table 7: Reliability and Validity results of Factors associated with the waste management system

Sl. No.	Item(s) of Factors associated with waste management system	Factor Item	CFA loading
1	Local governments need to effectively implement waste management methods	**IF1**	0.761
2	Law and policies are made mandatory	**IF2**	1.000
3	Waste generation and disposal are made aware	**SF1**	0.990
4	Public education campaigns on waste management are conducted	**SF2**	1.000
5	Government needs to find sources of funds for waste management	**FF1**	1.000
6	Private sectors are encouraged for paid services	**FF2**	0.930
7	Job creation is encouraged	**EF1**	0.810
8	Requirements on long-term operating and maintenance costs	**EF2**	1.000
9	Availability of equipment and facilities	**TF1**	0.760
10	Requirement of Skilled labourers	**TF2**	1.000
11	Safeguard natural resources	**ENF1**	0.980
12	Ensure human health risks minimisation	**ENF2**	1.000

Source: Author's Compilation

Table 7 presents the validity assessment values for each item in the "Factors associated with waste management system" questionnaire. These validity values indicate the strength of the relationship between each item and the construct it represents. Here are the validity values for each item:

❖ Local government needs to effectively implement waste management methods: Validity value of 0.761.
❖ Law and policies are made mandatory: Validity value of 1.000.
❖ Waste generation and disposal are made aware: Validity value of 0.990.
❖ Public education campaigns on waste management are conducted with a validity value of 1.000.
❖ The government needs to find sources of funds for waste management with a validity value of 1.000.
❖ Private sectors are encouraged for paid services with a validity value of 0.930.
❖ Jobs creation is encouraged: Validity value of 0.810.
❖ Requirements on long-term operating and maintenance costs: Validity value of 1.000.
❖ Availability of equipment and facilities: Validity value of 0.760.
❖ Requirement of skilled labourers: Validity value of 1.000.

- ❖ Safeguard natural resources: Validity value of 0.980.
- ❖ Ensure human health risks minimization: Validity value of 1.000.

These validity values help confirm the extent to which each questionnaire item accurately measures the specific factors associated with waste management systems. A validity value of 1.000 indicates a perfect fit between the item and the construct, while values below 1.000 still suggest a strong and acceptable relationship. These results contribute to the overall validity and reliability of the questionnaire and the measurement model for assessing these factors.

Figure 2: Revised Hypothesized Model for Factors associated with waste management system
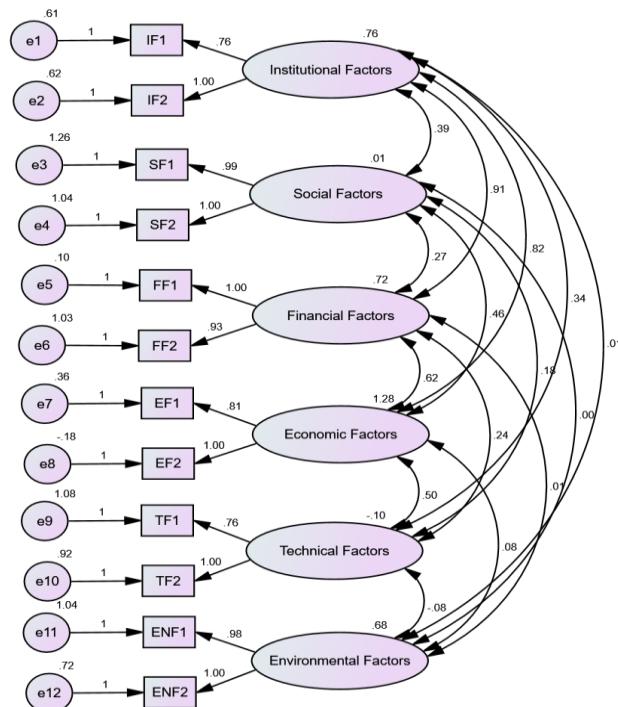
Table 8: Mean and SD of Knowledge Sharing on Waste Management

Sl. No.	Knowledge sharing on waste management	Mean	SD
1	Poor waste disposal is very harmful	2.88	1.027
2	Groundwater is polluted due to improper waste management	3.34	1.177
3	Deficiency of proper waste management leads to health issues among children	3.08	1.125

Source: Author's Compilation

Table 8 presents the descriptive statistics for three statements related to waste management perceptions. The key findings are given below:

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- ❖ The mean score for the statement "Poor waste disposal is very harmful" is 2.88, with a standard deviation of 1.027. This suggests that, on average, respondents view poor waste disposal as moderately harmful.
- ❖ The mean score for the statement "Groundwater is polluted due to improper waste management" is 3.34, with a standard deviation of 1.177. This indicates that respondents perceive groundwater pollution due to improper waste management as relatively high.
- ❖ The mean score for the statement "Deficiency of proper waste management leads to health issues" is 3.08, with a standard deviation of 1.125. This implies that respondents generally believe that a lack of proper waste management is associated with health issues.

It's noteworthy that the statement "Groundwater is polluted due to improper waste management" has the highest mean score, indicating that respondents consider groundwater pollution to be a significant issue resulting from improper waste management. This perception aligns with the understanding that improper waste disposal can contaminate soil and, subsequently, groundwater, which can indeed lead to various health concerns for households in the affected region.

Overall, these findings highlight the importance of effective waste management practices to prevent environmental contamination and protect public health.

Table 9: Mean and SD of Safety Measures by Households

Sl.No.	Safety Measures by Households	Mean	SD
1	Proper washing of hands after disposal of waste	3.72	0.907
2	Regularly drink boiled water	3.63	1.022
3	Dispose of garbage daily	3.74	1.288
4	The garbage container is cleaned	3.86	1.097

Source: Author's Compilation

Table 9 provides descriptive statistics for four statements related to waste management and hygiene practices. Here are the key findings:
- ❖ The mean score for the statement "Proper washing hands after disposal of waste" is 3.72, with a standard deviation of 0.907. This suggests that, on average, respondents perceive proper handwashing after waste disposal as a common practice.
- ❖ The mean score for the statement "Regularly drink boiled water" is 3.63, with a standard deviation of 1.022. This indicates that respondents generally believe that regularly drinking boiled water is a common practice for maintaining hygiene.
- ❖ The mean score for the statement "Dispose of garbage daily" is 3.74, with a standard deviation of 1.288. This implies that disposing of garbage daily is considered a relatively common practice among respondents.
- ❖ The mean score for the statement "Garbage container is cleaned daily with soap" is 3.86, with a standard deviation of 1.097. This suggests that cleaning garbage containers daily with soap is viewed as a fairly common practice among respondents.

Interestingly, the statement "Garbage container is cleaned daily with soap" has the highest mean score, indicating that respondents consider this practice to be a more prevalent and important aspect of waste management and hygiene.

The study suggests that there is an increasing awareness and understanding of waste management practices and hygiene among society members. It highlights the importance of environmental education and public awareness campaigns, as well as the implementation of municipal initiatives to promote health and safety. Additionally, the study emphasizes the need for responsible waste disposal practices both at the household and community levels. Promoting such practices can contribute to a cleaner and safer environment, ultimately improving the overall quality of life for households.

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Effectiveness of the Public Distribution System in Bodoland Territorial Region, Assam: Analysing Challenges and Enhancing Efficiency

Dr. Raju Subba*

Abstract
The Public Distribution System (PDS) is a crucial mechanism for ensuring food security and reducing poverty in developing countries. This research paper focuses on analyzing the effectiveness of the PDS in the Bodoland Territorial Region (BTR) of Assam, India, with a particular emphasis on the challenges it faces and opportunities for enhancing its efficiency. The study utilizes a mixed-methods approach, including a comprehensive literature review and primary data collection through interviews, surveys, and field observations. The results highlight several challenges within the PDS in the BTR region, including the non-availability of ration cards, leakage, non-availability of non-controlled goods, poor quality, and weighment issues, as well as the non-availability of essential commodities. These problems hinder the system's effectiveness in ensuring food security and poverty alleviation. The research underscores the need to address these shortcomings and proposes recommendations for improvement. Additionally, the study reveals low levels of awareness among beneficiaries regarding various aspects of the PDS and limited adoption of digital platforms for accessing PDS-related information. The findings contribute to the ongoing discourse on PDS reform, providing actionable insights for policymakers and stakeholders to enhance the functionality and efficiency of the system. Ultimately, the aim is to improve food security, reduce poverty, and ensure the well-being of economically vulnerable sections of society in the Bodoland Territorial Region of Assam.
Keywords: *Effectiveness, Public Distribution System (PDS), Bodoland Territorial Region (BTR), Challenges, Food security*
JEL Classification: I38

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Introduction

The Public Distribution System (PDS) plays a vital role in ensuring food security and reducing poverty in developing countries. In India, the PDS is a key mechanism for distributing essential commodities to economically vulnerable sections of society. Assam, a northeastern state of India, encompasses diverse regions, including the Bodoland Territorial Region (BTR), where the effectiveness of the PDS warrants examination to assess its impact on food security and poverty alleviation. This research paper aims to analyze the effectiveness of the Public Distribution System in the Bodoland Territorial Region of Assam, with a particular focus on the challenges it faces and the opportunities for enhancing its efficiency. The findings will provide insights into the existing gaps and potential solutions for improving the system's functionality. The table presented in the preceding section sheds light on the problems faced within the PDS in the BTR region. It reveals challenges such as the non-availability of ration cards, leakage, non-availability of non-controlled goods, poor quality, and weight issues, as well as the non-availability of essential commodities. These problems serve as the statement of the problem in this research, highlighting the need to address the shortcomings within the PDS in the BTR

region to enhance its effectiveness. According to Sharma et al. (2017), the non-availability of ration cards creates barriers for individuals to access subsidized food items, thereby hindering the effectiveness of the PDS in ensuring food security. Dreze and Khera (2013) emphasize the issue of leakage within the PDS, leading to the diversion of subsidized food items from intended beneficiaries, resulting in food insecurity among vulnerable populations. A study by Kandpal and Khan (2019) highlights the challenges related to the non-availability of non-controlled goods within the PDS, limiting the variety of essential commodities accessible to beneficiaries and potentially compromising their nutritional needs. These citations underscore the significance of addressing the identified problems within the PDS in the BTR region. By conducting this research, we aim to contribute to the ongoing discourse on PDS reform and provide actionable insights for policymakers and stakeholders to improve the functionality and efficiency of the system. The ultimate goal is to enhance food security, reduce poverty, and ensure the well-being of the economically vulnerable sections of society in the Bodoland Territorial Region of Assam.

Review of Literature

The Public Distribution System (PDS) plays a crucial role in ensuring food security and equitable distribution of essential commodities in India. However, the PDS in Assam and the northeastern region faces various challenges that hinder its effectiveness and impact on the vulnerable population. This literature review aims to explore the existing literature on the challenges faced by the PDS in Assam and Northeast India, highlighting the statement of the problem and providing insights for policymakers and stakeholders to address these issues effectively.

Several studies have identified socio-economic factors that contribute to the challenges in the PDS in Assam and the northeastern region. Baruah (2018) emphasized the impact of poverty, unemployment, and low literacy rates on the accessibility and utilization of PDS facilities. Additionally, Das and Kakoty (2019) highlighted the presence of remote and hilly terrains, inadequate transportation infrastructure, and the dispersion of population as significant barriers in the region.

The inefficiencies in the supply chain management of the PDS have been widely discussed. Baruah (2020) emphasized the issues of leakage, pilferage, and diversion of subsidized food grains intended for beneficiaries. Sharma et al. (2017) highlighted the lack of proper storage facilities, leading to spoilage and wastage of food grains. Furthermore, Goswami et al. (2019) underscored the challenges in maintaining quality control standards and ensuring the timely availability of essential commodities.

Technological and administrative factors also contribute to the challenges faced by the PDS in Assam and the northeastern region. Barman and Borah (2021) identified the absence of automation, computerization, and online tracking systems as barriers to transparency, accountability, and efficient management. Bora et al. (2020) emphasized the need for capacity building and training of personnel involved in the PDS to enhance their knowledge and skills in handling the system effectively.

The lack of awareness and information dissemination among beneficiaries have been identified as critical challenges. Choudhury and Borah (2018) highlighted the need for effective communication strategies to ensure that beneficiaries are aware of their entitlements, the location of fair price shops (FPS), and the process for obtaining ration cards. Kumar et al. (2020) emphasized the role of community-level interventions and awareness campaigns in promoting transparency and accountability in the PDS.Das et al. (2016) conducted a study on the impact of information and communication channels on the effectiveness of the PDS in India. The findings highlight those interpersonal networks, such as friends and relatives, play a crucial role in disseminating information and creating awareness about the PDS among potential beneficiaries.

In a study by Agarwal et al. (2018), notice boards were identified as a significant

source of PDS-related information in rural areas. The researchers observed that notice boards placed in prominent locations, such as Fair Price Shops (FPS) and village centers, effectively conveyed information on availability, pricing, and other relevant details to the local community.

Kaur and Sharma (2019) examined the role of digital platforms in disseminating information about the PDS. They found that while traditional modes, such as announcements and notice boards, were prevalent, there was an emerging trend of beneficiaries using digital platforms like Whatsapp and social media for accessing PDS-related information.

Das, D., & Ahmed, A. (2018) study examines the challenges and prospects of the Public Distribution System (PDS) in Assam, including issues related to the non-availability of ration cards, leakage, and poor quality of food grains. The findings highlight the need for reforms in the PDS to ensure effective implementation and improved access to essential commodities for beneficiaries.

Raha, P., & Bora, A. (2019) research focuses on the problems faced by the distribution system of the PDS in Assam. The study identifies issues such as the non-availability of non-controlled goods, leakage, and non-availability of goods. The findings emphasize the importance of addressing these problems to enhance the effectiveness of the PDS and ensure food security for the population.

Baruah, B., & Das, A. (2020) their research examines the implementation and impact of the PDS in Assam. The study highlights challenges related to the non-availability of ration cards and the non-availability of essential commodities within the PDS. The findings underscore the need for effective monitoring, better infrastructure, and policy interventions to improve the functioning of the PDS in Assam.

Saha, D., & Sarmah, D. (2017) their study evaluates the performance of the PDS in Assam, including aspects such as the availability of ration cards and leakage issues. The research findings emphasize the importance of addressing these problems through technological interventions, transparency measures, and efficient supply chain management to ensure the effective functioning of the PDS.

The literature review reveals that the PDS in Assam and the northeastern region faces multiple challenges, including socio-economic factors, weak supply chain management, technological and administrative limitations, and inadequate awareness among beneficiaries. Policymakers and stakeholders need to address these challenges by implementing strategies such as improving infrastructure, strengthening supply chain mechanisms, embracing technological solutions, and conducting awareness campaigns to enhance the effectiveness and efficiency of the PDS in the region.

The objectives of this study are to assess the extent of challenges encountered by the Public Distribution System (PDS) in the Bodoland Territorial Region (BTR) of Assam. Additionally, the study aims to evaluate the impact of these challenges on the overall performance of the PDS. Furthermore, based on the findings, the research aims to propose recommendations and strategies for enhancing the effectiveness of the PDS in the BTR of Assam. By addressing these objectives, the study seeks to contribute to improving the efficiency and accessibility of the PDS in the region.

Hypothesis and Research Question
H_0: There is no significant association between the respondents' level of awareness about the Public Distribution System (PDS) and their mode of availing information.
H_1: There is a significant association between the respondents' level of awareness about the Public Distribution System (PDS) and their mode of availing information.

Database and Methodology
The study was conducted using a mixed-methods approach. The first phase of the study involves a comprehensive literature review to understand the conceptual framework

of the PDS and its relevance in the context of food security and poverty alleviation. The second phase of the study involves primary data collection through structured interviews, surveys, and field observations. The data collected from the primary source were analyzed using statistical methods. A total of 200 respondents were interviewed using a structured interview schedule. The interview schedule includes questions such as awareness of the PDS, access to PDS benefits, and challenges faced in accessing PDS benefits. A survey has been conducted among a sample of 1000 households. The survey includes questions such as household size, Income, and expenditure on food. Field observations were made at 10 Fair Price Shops (FPS) in Bodoland Territorial Region, Assam. The field observations were focused on, Availability of PDS commodities, Prices of PDS commodities, Quality of PDS commodities, and Customer satisfaction with the PDS.

Results and Discussions

The table presents a sample profile of respondents participating in the study. The respondents are categorized based on various demographic and socioeconomic factors. Here is the interpretation of the table:

Table 1: Sample profile of respondents

Heads	Category	Total No of Respondents	% of Respondents
Age	Less than 45	64	32%
	46 to 55	84	42%
	56-65	32	16%
	Above 66	22	11%
Total		**200**	**100%**
Gender	Male	146	73
	Female	54	27
Total		**200**	**100%**
Education	Literate	48	24
	Upto 10th	110	55
	Plus two	28	14
	UG/PG	16	8
Total		**200**	**100%**
Occupation	Pvt. Employee	24	12
	Govt. employee	20	10
	Agriculture	22	11
	Others	120	60
Total		**200**	**100%**
Annual Income	>25000	90	45
	25001-50000	32	16
	50001-75000	18	9
	75001-100000	16	8
	Above 100000	44	22
Total		**200**	**100%**
Category	APL	116	58
	BPL	84	42
Total		**200**	**100%**

Source: Primary Data

Several studies have emphasized the significance of age in relation to PDS. According to Sharma et al. (2017), understanding the age distribution of beneficiaries helps

identify the specific challenges faced by different age cohorts. For example, elderly individuals may require additional support in accessing and utilizing PDS benefits due to mobility constraints. The findings from the discussions reveal that the majority of respondents fall within the age groups of 46 to 55 years (41.8%) and less than 45 years (31.8%), indicating the importance of catering to the needs of these age groups within the PDS.

Gender is another crucial demographic factor influencing the effectiveness of the PDS. Women's participation and access to PDS benefits have been identified as key areas of concern. Dreze and Khera (2013) highlight the gender disparities in PDS utilization and the need for gender-responsive interventions. The discussions reveal that 72.7% of the respondents in the study are male, indicating the significance of addressing gender-specific challenges to ensure equitable distribution of PDS benefits among men and women.

Education and occupation are important demographic indicators affecting PDS access and utilization. Kandpal and Khan (2019) argue that educational background plays a vital role in understanding beneficiaries' awareness and comprehension of PDS entitlements. The results indicate that the majority of respondents have education up to the 10th grade (54.5%) and fall under the "Others" category (60%) in terms of occupation. These findings suggest the need for targeted awareness campaigns and tailored interventions to enhance beneficiaries' understanding and engagement with the PDS.

Income and categorization based on poverty levels are crucial factors in determining the socioeconomic dynamics of PDS beneficiaries. Studies have shown that income disparities can significantly impact the accessibility and reliance on PDS benefits. The discussions reveal a diverse income distribution among respondents, with 44.5% having an income above 25,000 and 41.8% falling under the Below Poverty Line (BPL) category. These findings emphasize the importance of implementing income-sensitive measures within the PDS to effectively target subsidies and benefits. The respondents are categorized as Above Poverty Line (APL) and Below Poverty Line (BPL), with 58.2% falling in the APL category and 41.8% in the BPL category.

Level of Awareness

The level of awareness among beneficiaries is a critical aspect of the effectiveness of the Public Distribution System (PDS). This section reviews existing literature that examines the level of awareness among respondents, as highlighted in the above-generated results and discussions, and its implications for the functioning of the PDS

Table 2: Level of Awareness

Particulars	Number of Respondents	% of Respondents
FPS in my village	80	40%
FPS functioning year	16	8%
Know the availability of ration items	24	12%
Get information about availability, Quantity &price.	28	14%
PDS is discussed in a village meeting	52	26%
Total	200	100%

Source Primary data

The table shows the percentage of respondents' awareness levels regarding various aspects of the PDS in the BTR region. It indicates that 40% of the respondents are aware of the presence of a Fair Price Shop (FPS) in their village, while only 8% know the functioning year of the FPS. Additionally, 12% of respondents are aware of the availability of ration items, and 14% reported obtaining information about availability, quantity, and price. Interestingly, 26% of respondents indicated that the PDS is discussed in village

meetings.

Figure 1: Level of Awareness
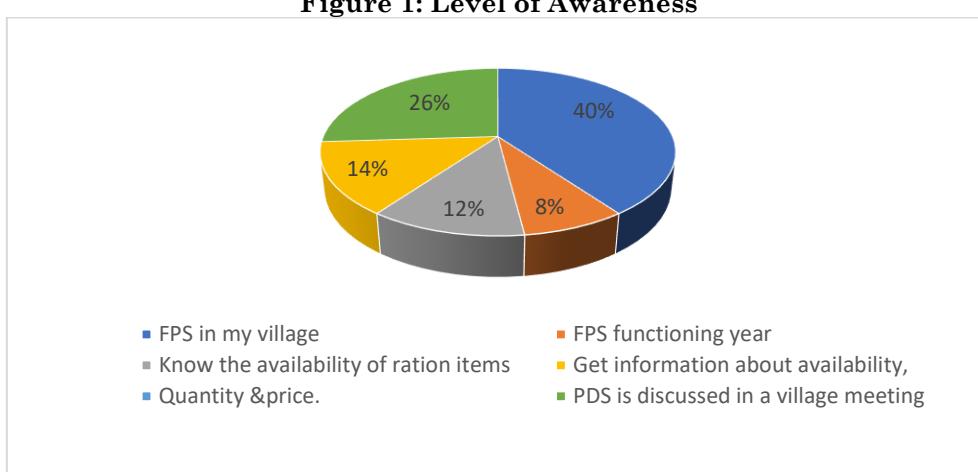
These findings highlight the need to improve awareness levels among beneficiaries and enhance information dissemination mechanisms to maximize the effectiveness of the PDS in the BTR region. Kandpal and Khan (2019) examined awareness and perception about social protection programs among the poor in India. Their findings suggest that inadequate dissemination of information and limited knowledge about the PDS contribute to the low level of awareness among beneficiaries. This is reflected in the low percentages of respondents who reported knowing about the availability of ration items (12%) and getting information about availability, quantity, and price (14%) in the above-generated results. Dreze and Khera (2013) emphasize the importance of information dissemination and community involvement in the PDS. Their research highlights that active discussions and engagement in village meetings play a crucial role in raising awareness and ensuring effective implementation of the PDS. The finding that only 26% of respondents reported the PDS being discussed in village meetings further emphasizes the need for improved communication and engagement strategies.

Mode of Availing Information

The mode of availing information plays a crucial role in ensuring effective communication and access to the Public Distribution System (PDS).

Table 3: Mode of availing information

Modes	No of Respondents	% of Respondents
Announcement	24	12%
Notice board	36	18%
Friends & relatives	112	56%
Making telephone calls	20	10%
WhatsApp/social media	8	4%
Total	200	100%

Source: Primary Data

results indicate that the most prevalent mode of availing information among the respondents is through friends and relatives (56%), followed by notice boards (18%), announcements (12%), making telephone calls (10%), and a smaller percentage relying on WhatsApp/social media (4%). However, it is worth noting that the lower percentage of respondents relying on digital platforms, such as WhatsApp and social media (4%),

suggests a limited adoption of these channels for accessing PDS information.

Figure 2: Mode of Availing Information
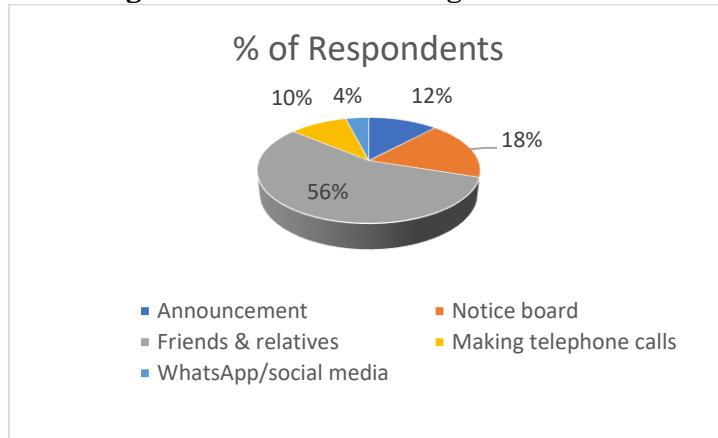
The finding implies the need to explore ways to harness the potential of digital platforms to enhance the outreach and accessibility of PDS-related information among beneficiaries.

Null and alternative hypotheses: To perform a chi-square test on the two tables, we need to set up a null hypothesis and an alternative hypothesis.

H_0: There is no association between the level of awareness and the mode of availing information.

H_1: There is an association between the level of awareness and the mode of availing information.

Significance level: Let's assume a significance level of $\alpha = 0.05$ (5%).

Table 4: Combination of the variables "Level of Awareness" and "Mode of Availing Information

Particulars	Announcement	Notice Board	Friends & Relatives	Making Telephone Call	WhatsApp/ Social Media
FPS in my village	9	8	42	9	2
FPS functioning year	1	2	10	2	1
Know the availability of ration items	2	2	14	4	2
Get information about availability, Quantity &price.	3	5	16	4	0
PDS is discussed in the village meeting	9	19	30	1	3

Source: Author's Calculation

Chi-square Statistics: The chi-square statistic is calculated using the following formula-

$$\chi 2 = \Sigma(O - E)^2 / E$$

where O is the observed frequency and E is the expected frequency.

Critical value: The critical value is the value of the chi-square distribution that corresponds to the significance level. The critical value can be found in a chi-square table.

Comparing the chi-square statistic to the critical value: If the chi-square statistic is

greater than the critical value, then the null hypothesis is rejected. Otherwise, the null hypothesis is not rejected.

In this case, the chi-square statistic is 31.02. The critical value for a significance level of 0.05 with 5 degrees of freedom is 11.07. Since the chi-square statistic is greater than the critical value, we reject the null hypothesis. This means that there is sufficient evidence to conclude that the level of awareness and the mode of availing information are not independent. In other words, the way that people learn about the public distribution system (PDS) affects how aware they are of it. For example, people who learn about the PDS through announcements are more likely to be aware of the FPS in their village than people who learn about the PDS through other means.

Problems in PDS

The table presents the percentage of respondents who reported specific problems within the PDS. According to the primary data, the major problems identified are non-availability of ration cards (21%), leakage (13%), non-availability of non-controlled goods (27%), poor quality and weighment issues (16%), and non-availability of goods (23%).

Table 5: Problems in PDS

Problems	No of Respondents	% of respondents
Non-availability of ration cards	42	21%
Leakage	26	13%
Non-availability of non-controlled goods	54	27%
Poor quality & weighment	32	16%
Non-availability of goods	46	23%
Total	**200**	**100%**

Source: Primary data

These findings corroborate the existing literature on the problems within the PDS and reinforce the need for reforms and interventions to address these issues. Improving the availability of ration cards, curbing leakage, ensuring the availability of essential commodities, and enhancing quality and weighment practices are crucial steps toward enhancing the effectiveness of the PDS and achieving its objectives of food security and poverty alleviation. The non-availability of ration cards has been recognized as a significant problem within the PDS. Ration cards serve as an essential identification document for accessing subsidized food items. The study by Sharma et al. (2017) highlights that the lack of ration cards creates barriers for individuals, especially the economically vulnerable, to access essential commodities through the PDS. The non-availability of ration cards can lead to exclusion errors, where deserving beneficiaries are unable to benefit from the system.

Leakage within the PDS refers to the diversion of subsidized food items from intended beneficiaries to the open market. Dreze and Khera (2013) emphasize the issue of leakage as a major challenge in the distribution system. Leakage can occur at various stages, including during procurement, storage, transportation, and distribution. This leads to inclusion errors, where ineligible individuals receive benefits, and exclusion errors, where deserving beneficiaries are left out. Leakage reduces the effectiveness of the PDS in reaching its intended beneficiaries and undermines the objectives of food security and poverty alleviation.

The non-availability of non-controlled goods, such as pulses, edible oil, and sugar, within the PDS has been identified as a problem. Kandpal and Khan (2019) discuss the challenges related to limited variety and availability of essential commodities in the PDS. The non-availability of non-controlled goods hampers the nutritional diversity and choice available to beneficiaries, limiting their access to a balanced and diverse diet.

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Poor quality and weighment issues within the PDS have been a persistent concern. The study by Kandpal and Khan (2019) also emphasizes the poor quality of food grains distributed through the PDS. Poor quality compromises the nutritional value and safety of the food items, affecting the overall well-being of beneficiaries. Weighment issues, such as under weighment or incorrect measurement, can lead to unfair distribution and reduce the effectiveness of the PDS in ensuring equitable access to essential commodities.

The non-availability of goods within the PDS is another critical problem. The study by Sharma et al. (2017) identifies the non-availability of essential commodities as a challenge that affects the reliability and effectiveness of the system. Non-availability of goods deprives beneficiaries of their entitled provisions and undermines the objective of ensuring food security.

Conclusion

The findings and results of this research paper shed light on the effectiveness of the Public Distribution System (PDS) in the Bodoland Territorial Region (BTR) of Assam. The study examined various aspects of the PDS, including the demographic profile of the respondents, the problems faced in the distribution system, and the level of awareness among beneficiaries. The analysis of the respondents' demographic profile revealed important insights into the target population of the PDS in BTR Assam. The age distribution highlighted the presence of beneficiaries across different age groups, emphasizing the need for inclusivity and coverage for individuals of all ages. The gender distribution revealed a higher representation of males among the respondents, suggesting the importance of ensuring equitable access to PDS benefits for both genders. The education and occupation distributions underscored the diverse socioeconomic backgrounds of the beneficiaries, necessitating tailored approaches to address their specific needs.

The examination of the problems in the PDS system revealed key areas of concern. The non-availability of ration cards emerged as a significant issue, potentially excluding deserving beneficiaries from accessing essential commodities. Leakage in the distribution system and non-availability of both controlled and non-controlled goods were identified as major hurdles, undermining the efficient functioning of the PDS. The poor quality and weighment of food grains further compounded the challenges, affecting the overall satisfaction of the beneficiaries.

These findings highlight the need for comprehensive reforms in the PDS system in BTR Assam. Policymakers and stakeholders must address the identified problems to enhance the efficiency, transparency, and reach of the PDS. Key recommendations include improving infrastructure, implementing technological interventions such as digitized ration cards and GPS tracking of supply vehicles, and establishing robust monitoring mechanisms to minimize leakages and ensure transparency. By addressing the identified challenges, it is possible to enhance the effectiveness of the PDS in BTR Assam and ensure food security for all sections of society. The research paper contributes to the ongoing discourse on PDS reform by providing valuable insights and recommendations. It is hoped that the findings will inform policymakers, stakeholders, and practitioners in their efforts to improve the functioning of the PDS and ultimately alleviate poverty and enhance food security in the Bodoland Territorial Region of Assam and beyond.

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Tribal Women Workforce Participation: A Study on Deori Tribes of Assam

Purabi Gogoi*

Abstract

Workforce participation is a prime indicator of a country's growth. Usually, women workers are underestimated as they are engaged in informal sector. The workforce participation of tribal women is vital towards understanding the socio-economic functioning and the quality of life of the society. Tribal women are more vulnerable to their work. Work participation rate among scheduled tribe women in Assam is 39.23 percent while the total workforce participation of scheduled tribe in Assam is 44 percent (Census, 2011). The study is conducted among Deori women workers. According to 2011 census, 54.09 percent women workers are marginal workers in Assam but among the Deori women workers it is 64.10 percent which indicates more vulnerability Deori women to their work. The present study attempts to understand the nature and pattern of works among Deori women and also to identify the determinants of women workforce participation. Primary data has been collected for the study from 128 households. Binary logistic regression technique was employed to identify the determinants of women workforce participation. The results suggested that marital status; monthly household income and education of women are statistically significant in determining women workforce participation.
Keywords: *Women, Workforce Participation, Scheduled Tribe, Deori, Assam, Logistic Regression*
JEL Classification: J82

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Introduction

Workforce participation is a prime indicator of a country's growth. The workforce participation rate shows the proportion of a country's working age population that engages actively in the labor market. Women's participation in the workforce assumes more importance in the case of developing countries, because of its positive effects on the level of output and negative effects on population growth (Rao and Naik 2016). Women constitute nearly half of the total population in India while the work participation rate of female in India records 25.63 percent in 2001 which is slightly declined to 25.53 percent in 2011. According to the fifth Annual Report on Employment and Unemployment (2015-16), conducted by the Ministry of Labour and Employment, Labor Bureau, Government of India, female labor force participation is 23.70 percent which is declining as compared to the 25.80 percent recorded in fourth Annual Report on Employment and Unemployment conducted by the same. India is being placed at 120th position among 131 countries of the world with respect to female workforce participation (ILO, 2013).

Assam is a state situated in the North-East India with 23 tribal communities highly differentiated in terms of their tradition, culture as well as economic status. The tribal population in Assam constitutes 12.82 percent of the total population of the state (Census, 2011) and 3.72 percent of total tribal population of the country. The major tribes of Assam are Chakma, Dimasa Kachari, Garo, Hajong, and kuki, Man, Lakher, Mizo, Naga, Boro Kachari, Sonowal Kachari, Mech, Khamti, and Deori. Women workforce participation rate in Assam is also not satisfactory (22.5 percent in 2011 census). The workforce participation of tribal women is vital towards understanding the socio-economic functioning and the quality of life of the society. According to 2011 Census, the workforce participation rate among ST is 44 percent but the Female Workforce Participation Rate

among ST in Assam is 39.23 percent. According to Ministry of Tribal Affairs, 2013, workforce participation among Deoris is 49.3 percent.

Majority of the women are engaged in informal job which are not taken into consideration under official statistics. As per the norms of the official definition, they are not actually working women. Though there are many studies regarding women workforce participation but there are not many studies in workforce participation of tribal women. The nature of occupation that the tribal women are engaged in is a neglected area of research. Though female workforce participation rate among tribal women in Assam (39.23%) is higher than the all India female workforce participation rate (25.53%) but it needs proper identification of nature and conditions of work among tribal women. Literature shows that tribal women are more vulnerable to work. According to 2011 census, 54.09 percent women workers are marginal workers in Assam but among the Deori women workers it is 64.10 percent which indicates more vulnerability to work. In view of this issue, the present study is an attempt to understand the nature and pattern of works among Deori women.

The objectives of the study are **i)** To study the nature and pattern of works among the Deori women
and ii) To identify the determinants of workforce participation rate of Deori women.

Database and Methodology

Multistage sampling technique is used in the study. The present study was carried out in the Lakhimpur District of Assam where Deori population (30.21 percent) is highest (Census of India, 2011). Out of a total 9 blocks in the district, Narayanpur Development Block is included in the study based on the highest concentration of Deori population. Out of a total fourteen Gaon Panchayats, two Gaon Panchayats namely Pub- Narayanpur and Panbari are selectedfor the collection of data on Deori women. Three villages namely Bordeorigaon, Majorchapori and 1 no Kinapathar are selected on the basis of highest number of Deori inhabited households. From the each Deori inhabited selected village, 20 percent households are being selected randomly. A total of 128 households were selected for the study.

To examine the determinants of women workforce participation, binary logistic regression is applied in the study. The model will be as follows:

$\ln \frac{Pi}{1-Pi}$= α+ ß$_1$X$_{1t}$+………………………………………………+ß$_n$X$_{nt}$

Where, n= 1…………………………… 7 P$_i$ represents the probability that a women participate in workforce. 1-P$_i$ represents the probability that the women not participate in workforce. And α is the constant term and ß$_1$, ß$_2$, ß$_3$, ß$_4$, ß$_5$, ß$_6$ and ß$_7$ are the coefficient of the independent variables X$_1$, X$_2$, X$_3$, X$_4$, X$_5$, X$_6$ and X$_7$ respectively.

Results and Discussion
Level of workforce participation Rate
The total population of the Deori sample household is 648. Out of which, 335 are male population and 313 are female population. The total female population in the age group 15-59 is 236 of which 118 reported that they are employed.

Crude Workforce Participation Rate
Crude workforce participation rate is the proportion of total worker to the total population. The formula for crude workforce participation rate of female is

$$\text{CWFPR} = \frac{\text{Total female worker}}{\text{Total female population}} \times 100$$

By using this formula, CWFPR of Deori women are found 37.69 percent.
But it cannot reflect the actual rate of workforce participation because it includes the total population. But out of total population, there may be economically inactive population. The economically active population is belonging to the age group 15-59 which are also called

working age population.

General Workforce Participation Rate

General workforce participation rate considers the proportion of female workers to the total working age population. The formula for GWFPR is

$$\text{GWFPR} = \frac{\text{Female workers in the age group } 15-59}{\text{Total female population in the same age group}} \times 100$$

The GWFPR of Deori women is found 50 percent. The possible reason for it is that Deori women want to be self-dependent and therefore they work. Here it is seen that the WPR of the Deori women in the study area is 50 percent which is higher than that of the WPR of total Deori population in Assam (49.3 percent).

Pattern of Women Workforce Participation

The pattern of workforce is an important aspect of the study on women workforce because it provides the idea about the quality of work participation of the women workers. The economic and social development of a nation/state depends on the number of persons who are economically active, the quality of their work and the regularity of their employment. The pattern of workforce participation is useful for understanding the extent to which women participate in economic activity (Suryawanshi, 2015). The pattern of women workforce participation in the study area is explained below:

Percentage Distribution of Women Workers to Total Workers by Different Categories of Work

It has been mentioned in the earlier chapter that the census of India 2001 categorized the workers into four broad groups namely Cultivators, Agricultural labourer, Household Industry worker and other workers. It can be explained with the help of following figure 1.

Figure 1: Percentage of Deori Women Workers to Total Workers by Categories of Work
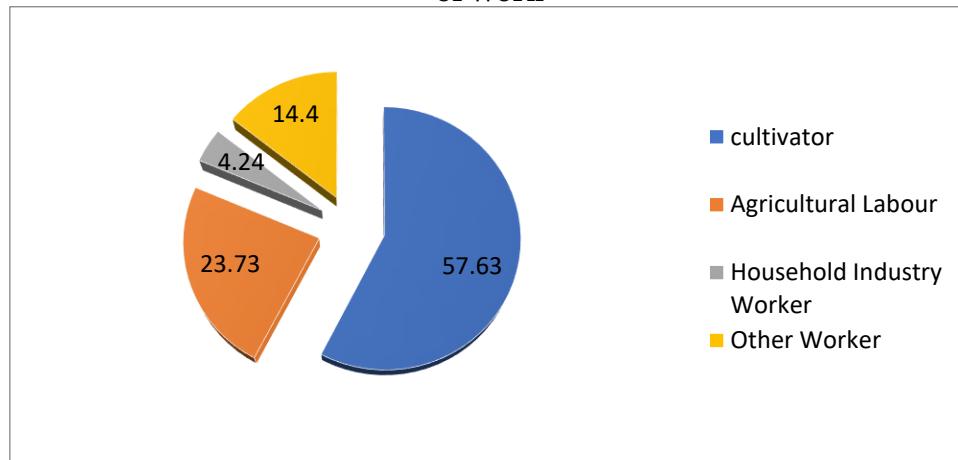
Source: Field Survey Data

The above Figure 1 shows that out of the total Deori workers, 57.63 percent is cultivator which is highest among all categories of workers. The lowest percentage is seen in household industry worker and the figure for this category is 4.24 percent. The reason for highest percentage of cultivator is that they have sufficient amount of land to cultivate by themselves. The reason for lowest percentage of worker in the category of household industry worker is that there is no more household industry in the selected sample households and only bamboo and cane work carpentry and weaving was reported as household industry during the survey. The agricultural labour is 23.73 percent. The percentage of workers in other worker category is reported as 14.40 percent for Deori women.

According to the census of India, 2011, the percentage of women workers to total workers by different categories of work such as cultivator, agricultural labourer, household industry worker and other worker are as 8.04 percent, 5.98 percent, 2.39 percent and 12.24 percent respectively. From the above figures, it is observed that the percentage distribution of Deori women workers to total workers by different categories of work are higher as compared to the percentage distribution of women workers to total workers by different categories of work in Assam.

Distribution of Main and Marginal Workers to Total Workers

It has been mentioned in the first chapter that workers can be classified into main and marginal workers. A person who has worked for major part of the reference period (i.e. six months or more during the last one year preceding the date of enumeration) in any economically productive activity is termed as 'Main worker'. A person who worked for 3 months or less but less than six months of the reference period (i.e. in the last one year preceding the date of enumeration) in any economic activity is termed as 'Marginal worker'. The following figure shows the distribution of main and marginal workers of Deori and women. It is calculated by using the following formulas:

$$FWPR \ (Main \ Worker) = \frac{Number \ of \ Female \ Main \ Worker}{Total \ Female \ population \ in \ the \ age \ group \ 15-59} \times 100$$

$$FWPR(Marginal \ Worker) = \frac{Number \ of \ Female \ Marginal \ Worker}{Total \ Female \ Population \ in \ the \ age \ group \ 15-59} \times 100$$

The above figure shows that 26.69 percent of Deori women workers are main worker and 23.30 percent are marginal worker. Here, it is seen that the percentage of main workers to Deori women workers is higher as compared to the percentage of female main worker (19.02 percent) of Assam. But the percentage of marginal women workers to total Deori women workers is lower as compared to the percentage of female marginal worker (54.09 percent) in Assam (Census, 2011).

Distribution of Women Workers to Total Workers by Different Age groups

Women workers may differ by different age groups. At various stages of age women can participate in workforce differently. Therefore, it is necessary to know the extent of women workers by different age group. To determine women workers by different age group, women's age is disaggregated into nine groups and it is explained with the help of following table:

Table 1: Percentage Distribution of Deori Women Workers to Total Workers by Different Age Groups

Age Group	Total Female Population	Female Workers	Percentage of Female Workers to Total Female Population
15-19	33	1	3.03
20-24	46	11	23.91
25-29	35	17	48.57
30-34	23	12	52.17
35-39	21	20	95.23
40-44	22	18	81.81
45-49	27	21	77.77
50-54	15	11	73.33
55-59	14	7	50.00
Total	236	118	50.00

Source: Field Survey Data

The above table shows the work participation rate of women varies in the different age groups. Women workforce participation rate in 35-39 age groups is highest, followed by the age group 40-44, 45-49 and 50-54 respectively. But in the earlier stages of age group, the work participation rate is lower as compared the latter stages of age group. The reason for this is that in the earlier age groups majority are students but in the latter age groups, majority are married women and thereby forced them to participate in workforce.

Distribution of Women Workers to Total Workers by Level of Education

The working status of women largely depends on their educational level and it may vary by different level of education. Education is an essential factor to give women skills, confidence to enter into the workforce. Keeping with this view, an attempt has been made to trace the women workforce participation by different level of education. To calculate this, the level of education has been categorized into seven categories.

Table 2: Percentage of Deori Women Workers to Total workers by Level of Education

Level of Education	Number of Female populations	Number of Female Workers	Percentage of Female workers to total female population
Illiterate	29	23	79.31
Primary	20	11	55
Middle	26	18	69.23
High School	67	33	49.25
Higher Secondary	54	18	33.33
Graduate	39	15	38.46
Post Graduate & Above	1	0	0
Total	236	118	50.00

Source: Field Survey Data

The above table shows that women work participation rate is highest among illiterate (79.31 percent) which is followed by middle level of education (69.23 percent). Though, it is recognized that with the higher level of education, women workforce participation rate increases, but the above table shows the opposite of it. Because there are majority of women under these two categories and they have to engage in any type of economic activity to maintain their household needs and responsibilities. But the women who attain higher level of education hesitate to engage themselves in any economic activity as the higher level of education raises their expectation about high quality job.

Determinants of Women Workforce Participation

To examine the determinants of women workforce participation, binary logistic regression is applied in the study. The dependent variable women workforce participation is a dichotomous variable as it takes two values such as 1 if participated and 0 otherwise. On the other hand, women workforce participation is determined by many socio-economic and demographic factors like marital status of women, age of women, age of husband/father, monthly household income, education of women, education of husband/father, earning member in the family and number of children below 6 years. All these variables are considered as independent variable in the model.

Table 3: Description of variables included in the study

Name of variable	Notation	Type	Description
Marital status of Respondent	Marital_Status	Categorical	1 for married and 0 for unmarried
Type of family	Type_Fmly	Categorical	1 for Nuclear and 0 for joint
Age of Respondent	Res_age	Continuous	
Age of husband/father	H_F_age	Continuous	
Monthly household income	Houuse_Income	Continuous	
Education of Respondent	Edu_Res	Categorical	1 for high school and above, 0 for below high school
Education of husband/father	Edu_H_F	Categorical	1 for high school and above, 0 for below high school

Source: Author's Compilation

Table 4: Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Marital status of respondent	206	1	3	1.26	.640
Type of family	206	1	2	1.10	.297
Age of Respondent	206	18	58	38.80	10.018
Age of husband/father	206	17	70	42.62	11.764
Monthly household income	206	5000	345000	2.71E4	34774.419
Education of Respondent	206	1	7	3.43	1.717
Education of husband/father	206	1	7	4.05	1.540

Source: Author's Compilation

Table 5: Result of Binary Logistic Regression for Deori Women

Variables	B	Wald	Exp. (β)
Marital status of Respondent	-4.745*	12.285	0.009
Type of family (1)	18.495	0.000	107753738.6
Age of Respondent	0.095	1.947	1.099
Age of husband/father	-0.048	1.150	0.953
Monthly household income	-2.151**	4.532	0.116
Education of Respondent (1)	-2.803***	2.912	0.061
Education of husband/father (1)	-0.482	0.123	0.617

*Significant at 1%, **significant at 5%, ***significant at 10%

-2 log likelihood = 32.429, Cox and Snell RSquare =0.227, Nagelkerke R Square =0.564

Hosmer and Lemeshow goodness of fit test statistics =6.362, P=0.607, Iteration number = 20

Source: Author's Compilation

Analysis of the Result of the Binary Logistic Regression

Table shows that marital status; monthly household income and education of women are statistically significant at 1 percent, 5 percent and 10 percent level of significance respectively. On the other hand, type of family (1) i.e., nuclear family, age of

the women, age of the husband/ father, earning member, education of husband/father shows statistically insignificant results.

Marital status (1) is statistically significant in determining women workforce participation but the negative value of the coefficient (ß= -4.745) indicates that if a woman is married, there is less probability that she will enter the workforce. The reason for this may be increasing burden of household works, childcare and they may have served the other members of the family as a caretaker and therefore less likely to participate in income generating activities. This result is consistent with Naqvi & Shahnaz (2002).

The household income is significant and negatively determined the decision of women workforce participation of both Deori women. With the increase in additional one unit of income women work participation will decrease by 88.4 percent. This result is consistent with Hafeez & Ahmed (2002) and the reason for the negative relationship between household income and women workforce participation is that their household income is sufficient to fulfill their needs and thereby do not participate in workforce.

Education of women is statistically significant but negatively associated with women's workforce participation. Women having more education level of high school and above are less likely to participate by 39 percent for Deori women. The possible reason for this is that with the increase in the level of education, the expectation of women for high quality job increases. The highly educated women have more expectation about a job (Singariya & Shekhawat, 2015). But if they do not get such a job due to lack of employment opportunities, they are discouraged in the formal labour market and thereby they have to stay at home and start to do household work. This is more common in developing countries like India. Afridi & Taryn (2016), found a minimum increase in women's own education explains 22 percent fall in Women LFPR between 1987-1999 year and it is 11 percent fall in LFPR in 1999-2009 year. Sinha (2005), found the inverse association between literacy and FWPRs has often been found in the Indian context, and is to be interpreted with caution and the knowledge that higher FWPRs are often a reflection of greater distress in the country.

Conclusion

The study has investigated the various aspects of workforce participation of Deori women which clearly bring to light the importance of the issue of women workforce participation. The study found that work participation rate of Deori women is 50 percent which is higher than the female work participation rate of tribal women in Assam (39.23 percent). The study also examined various socio-economic and demographic factors that determine the women workforce participation of Deoris and found that different factors influence the workforce participation of Deori women. The result of binary logistic regression shows that marital status, monthly household income and education of women are statistically significant in determining the workforce participation of Deori women. One unexpected result was found regarding the level of education which shows the negative association with workforce participation. It has been mentioned that the reason for this negative result may be due to the lack of employment opportunity especially of education based jobs.

The policy implication regarding the negative results between the level of education and women workforce participation will be the creation of education based jobs among the women which improves the quality of employment as well as the economic status among them. Moreover, majority of the women are found as cultivators for which no educational qualification is required. Therefore, the major recommendations are that in order to promote women workforce participation, education and training should be increased which could help them to engage themselves in education based jobs. As the women are facing different problems in participating workforce, therefore the government should intervene in the conditions of the labour market and carefully planned the policies

on female employment so as to increase employment opportunity for women equally with men.

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