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Editorial

Welcome to the Special Issue of Journal of Business and Technology (JBT) in a post-pandemic era of rapid technological advancement and evolving business situations. The business scenario is in a state of constant change, influenced by numerous factors such as, digital transformation of work, shifting consumers' behaviors and changing external environment. Hence, businesses need strategies concerning operations management, consumers' behaviors, talent management, sales management, and the industry-academia relations to adapt with these changes. In this special issue, the contributors delved into the dynamics of these issues exploring how businesses can adapt and thrive. From innovative advertising to strategic practices, the articles presented in this issue have a comprehensive view of current trends and future directions of the business.

In this issue, Gazi Abdulla-Hel Baqui, in his study on good governance, explained how the cultivation of human values, compliance of ethical principles, and obedience to laws, pave the way for nurturing good governance of the organization. Hemanth Kumar examined talent retention strategies in IT sector of India and found, most of the employees consider organizational culture and job satisfaction as the key factors to stay in the organization. Fatema Akter and her associates identified growing gap between actual compensation and marginal output and found exploitation in RMG sector of Bangladesh. Nazrul Islam and his associates recommended the small fast-food entrepreneurs to focus on nearness, cost, food quality, service quality, and the reputations to attract young customers. AYM Abdullah identified the need for developing industry-academia collaborations, access to knowledge, and innovations to face the present challenges of businesses. Bharati, in her paper, emphasized the need for advertisement by which consumers become better able to evaluate competing brands of identical products. Shejuti Haque and her associates found the need for training for the rural borrowers of Bangladesh for pursuing their agricultural activities better. In this regard, Azadul Bari and his associates identified an overwhelming proportion of the dairy farmers who expressed their satisfactions toward uplifting their living-standards. Rokya Akter's paper attempted to explore influential factors and analyzed the investors' behavioral intention towards the acceptance of green financing among the Bangladeshi investors. Regarding the form of business, Mohiuddin suggested reformulating capital restrictions to help expanding One Person Company (OPC) in Bangladesh. Maran and his associate found a dramatic increase in start-up numbers in the North Zone of India despite a temporary decline in 2022 due to reduced foreign investment confidence.

In past few years, policymakers have underscored the importance of resilience in business. The insights gained from the articles published in this issue are invaluable for businesses aiming to build robust strategies that withstand shocks of the external environments. This issue showcases contributions from scholars and practitioners across diverse disciplines of this region. The articles published in this issue will serve as a testament to the relentless pursuit of knowledge and the unwavering commitment to excellence. I extend my gratitude to the authors, reviewers, editorial team, patrons and especially the guest editor, Professor Ziaul Huq, for their dedication and hard work for making this issue published.

Sincerely,

Prof. Nazrul Islam
Chief Editor

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Can Agricultural Training Really Improve the Living Standard of the Household? Evidence from Rural Women Borrowers in Bangladesh

SHEJUTI HAQUE¹, KAZI TANVIR MAHMUD², MD. SHAMSUDDIN SARKER³ & SAYED IMRAN UR RAHMAN⁴

ABSTRACT

Rural women borrowers in Bangladesh lack skills in pursuing their agricultural activities because of receiving inadequate training facilities resulting in low productivity which leads to low levels of total household income and expenditure. Therefore, these women borrowers were provided agricultural training by the NGOs in Bangladesh. The prime objective of this study was to measure the impact of agricultural training programs on the household income and total expenditure of the borrowers. Primary data were collected from 400 rural poor women borrowers of NGOs operating in the Tangail district of Bangladesh. The Propensity Score Matching (PSM) technique was used to assess the impact of agricultural training on the household income and total expenditure of the women borrowers. This study showed that the agricultural training programs operated by NGOs played a pivotal role in increasing household income and total expenditure of the borrowers. The Binary Logistic Regression (BLR) technique was also applied to assess the opinions of the borrowers about the effectiveness of the agricultural training programs in improving their economic well-being. BLR results revealed that a few socioeconomic variables which include the number of training received by the borrowers, and possession of land had a positive impact on their economic well-being. On the other hand, taking non-institutional loans by borrowers could reduce their economic well-being. Focus should be given to providing both short-term and long-term agricultural trainings to the women borrowers by analyzing their training needs.

Keywords: Agricultural Training, Women Borrowers, Binary Logistic Regression, Non- Institutional Loans.

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I. INTRODUCTION

Bangladesh's agricultural sector comprises four sub-sectors: crop, livestock, fishery, and forestry, and it is vital to the country's economy (Ministry of Finance, 2022; Mahmud et al., 2014). The contribution of the agricultural sector in the fiscal year (FY) 2021-22 was approximately 12% of GDP (Ministry of Finance, 2022). In this historically agrarian country, the agriculture industry still employs about 43% of the total labor force. It is noteworthy that a substantial proportion of women, particularly rural women, depend directly or indirectly on this sector for their living (Zafarullah & Nawaz, 2019) and that the rate of women's engagement in the agriculture sector has risen dramatically in recent years (Komatsu et al., 2018). Despite this, serious gender discrimination exists in the Bangladeshi agriculture sector. In rural areas, women lack ownership and access to productive resources such as land and credit due to existing patriarchal norms of the rural society (Khan et al., 2016; Kieran et al., 2017; Hossain & Jamil, 2022; Zafarullah & Nawaz, 2019; Mahmud et al., 2021; Alkieri et al., 2013; Ali et al., 2017). For instance, women in Bangladesh own a small piece of land than their male counterparts, and in many cases, they are forced to give up their land rights to the male member of their family (e.g. brother, husband) due to social and religious norms (Kieran et al., 2017; Quisumbing et al., 2018). As a result of these limitations, rural farming women in Bangladesh often face challenges in obtaining adequate agricultural production as well as income from the Income-Generating activities (IGAs) they pursue. Additionally, rural women lack the abilities needed to actively pursue their IGAs promptly and efficiently (Hilton et al., 2016). In fact, when it comes to empowering low-income women, one thing that can never be overlooked is the significance of ensuring both training and financial facilities for them. For instance, providing poor farming women with support in the form of microcredit can help them become more financially empowered (Mahmud et al., 2017; Rahman et al., 2017; Zafarullah & Nawaz, 2019). Evidence suggests that Non-Governmental Organizations (NGOs) in Bangladesh played a key role in providing agricultural and non-agricultural training facilities to the rural poor, particularly rural women who borrowed money through microcredit programs. Training can have a key role in developing skills and knowledge, as well as boosting awareness regarding social and economic issues, according to researchers (Hilton et al., 2016; Mahmud et al., 2014; Kabir et al., 2018; Nakano et al., 2018). As a result, NGOs place a strong priority on giving training to their clients (women borrowers) through microcredit programs in order to significantly increase their capacity for pursuing IGAs and raise their standard of living. However, scholars have critiqued training programs for being ineffective in delivering the anticipated social and economic benefits (Bharti, 2014; Khan & Ali, 2014; Mahmud et al., 2014). Some researchers believe that the primary factors contributing to the failure of training programs in Bangladesh, as well as in other developing countries, are the provision of training for a relatively short period of time and the inability to accurately assess the training requirements of the trainees (Mahmud et al., 2014). Therefore, the following questions can be raised:

Q1. Do the agricultural training programs really improve the household income and expenditure of the women borrowers?

Q2. Do rural women prefer to participate in the training programs?

This study has taken an effort to explore the answers to these questions. The prime objective of this study is to assess the impact of training programs on the total household income and household food expenditure of the women trainees of NGOs in Bangladesh using the Propensity Score Matching (PSM) technique. It is expected that the study results will assist the microcredit providers in Bangladesh and elsewhere in the world in proper planning and implementation of agricultural training programs for poor women borrowers.

II. PREVIOUS STUDIES ON THE IMPACT OF TRAINING PROGRAMS

Ensuring agricultural training is crucial for increasing the agricultural productivity and income of the farmers. For instance, the role of training in increasing agricultural productivity and income of the farmers in Ethiopia can never be ignored (Wonde et al., 2022). Farmers in Uganda who took part in agricultural training programs were able to adopt modern farming techniques, which led to an increase in both their rice production and income (Kijima et al., 2012). The farmers in Bangladesh were able to successfully increase tomato production because of the intervention of training programs (Schreinemachers et. al., 2016a). It was also observed in Bangladesh that the farmers who had been trained had a better knowledge of the proper use of pesticides, therefore they used more Integrated Pest Management (IPM) practices and reduced the frequency of using pesticides (Gautam, et. al., 2017). According to Dickson et al. (2016), trained fish farmers in Egypt generated a higher return than their untrained counterparts and also reduced operational costs substantially as a result of their success in upgrading management procedures. In Bangladesh, it was observed by Mahmud et al. (2012) that the fish farmers' household income grew significantly as a direct result of receiving fisheries training from the Community-based Fishery Management Project (CBFM). According to Mahmud et al. (2014), the proper assessment of the training needs of the trainees is required in order to make the training program effective. Schreinemachers et al. (2016b) found that equipping rural women with home gardening and nutritional education had a substantial influence on improving their nutritional status. It was observed in Ghana that the farmers benefited from receiving feed formulation skill-building training because it raised their understanding of feed processing, which in turn increased their aquaculture productivity and their revenue. Training was an essential component in building the awareness level of fish traders of Bangladesh to fight against the misuse of formalin in food items (Kabir et al., 2018). Hilton et al. (2016) conducted a study on BRAC (reputable NGO) borrowers in Bangladesh and discovered that training significantly increased their capacity to spend on healthcare. Previous studies tried to shed light on agricultural productivity, income, and healthcare. It is worth noting that female trainees are less favored than their male counterparts (Mudege et al., 2017). So far, our knowledge goes, few studies have been conducted in Bangladesh focusing on the impact of agricultural training programs on the living standard of farming women. This study took an effort to assess the impact of training programs on the household income and expenditure of underprivileged women borrowers.

III. THEORETICAL UNDERPINNING

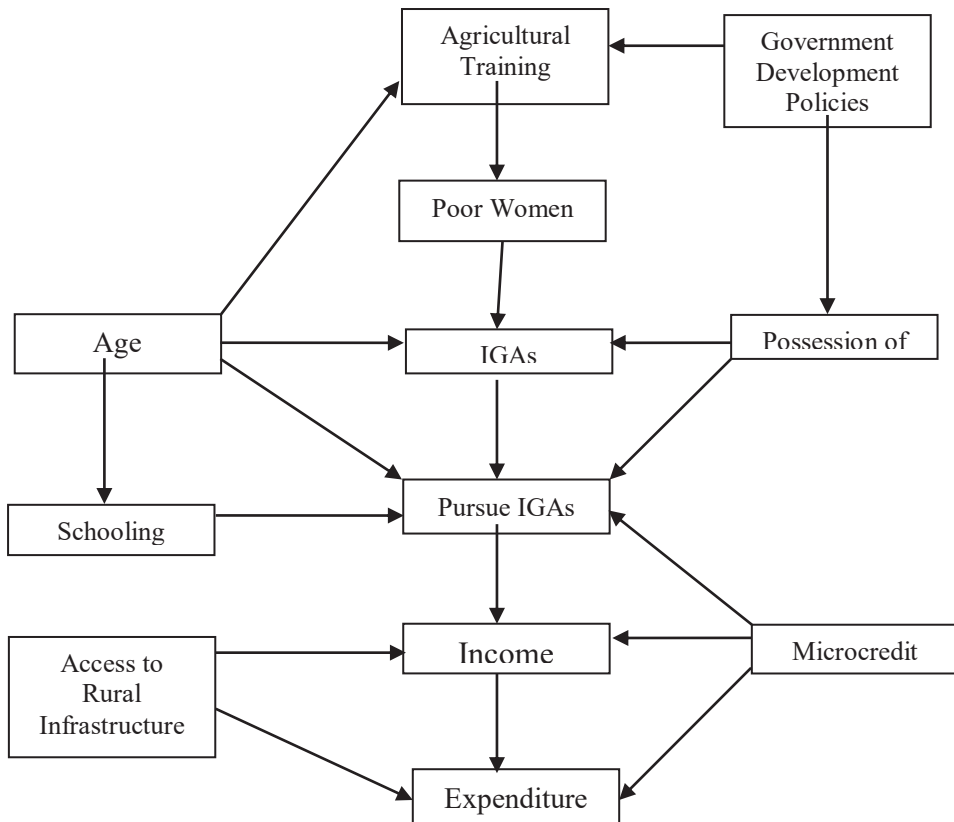
Utility theory in economics postulates that a consumer's budget increases with income; as a result, a consumer would purchase a greater quantity of items to maximize utility. Receiving training assistance would strengthen the capacity of low-income women

borrowers to pursue IGAs effectively, resulting in increased agricultural production and an increase in income. This rise in income would encourage female borrowers to acquire or rent necessary agricultural equipment and other inputs, so enhancing their ability to face risks and uncertainties. The borrowers' economic behavior is compatible with utility theory.

IV. CONCEPTUAL FRAMEWORK

A person's capacity for productivity, decision-making, negotiation, and risk-taking is influenced by a number of elements, including skill development training (Hilton et al., 2016). As a result of receiving agricultural training, disadvantaged women would be able to select and operate IGAs more efficiently, leading to increased production, revenue, and expenditures. Nevertheless, not just training but also the influence of other socioeconomic factors needs to be rigorously analyzed in order to uplift the standard of living of low-income women (Figure 1).

FIGURE 1: CONCEPTUAL FRAMEWORK FOR IMPROVING THE LIVING-STANDARD OF POOR RURAL WOMEN THROUGH AGRICULTURAL TRAINING



Note: Adopted and Modified from Mahmud et al., (2014) and Hilton et al., (2016).

The implementation of appropriate government policy is another important factor in the process of elevating the socioeconomic standard of underprivileged people especially, rural women. In accordance with the National Women's Development Policies (NWDPs) adopted by the Government of Bangladesh (GoB), the relevant government agencies should make substantial investments in training programs aimed at enhancing the capabilities of rural women. At the same time, gender-sensitive laws may be formulated and implemented in order to ensure that underprivileged women living in rural areas have equal opportunities to participate in the training programs and are not subject to any form of discrimination. Education plays a crucial role in obtaining knowledge and increasing a person's analytical ability (Mahmud et al., 2017; Hilton et al., 2016; Kabir et al., 2018; Ferdousi et al., 2023). It is commonly believed in Bangladesh that rural women typically have lower levels of education. Providing disadvantaged women with formal and non-formal educational support would aid them in decision-making, and resource management which ultimately leads them to have a better living standard. In the context of Bangladesh, it is common for rural poor women to be unable to pursue IGAs in an effective manner due to budgetary limitations. Microcredit is often regarded as one of the most effective instruments for fighting against poverty (Zafarullah & Nawaz; 2019; Rahman et al., 2015; Rahman et al., 2017; Mahmud et al., 2017; Imai et al., 2010). Undoubtedly, ensuring underprivileged women's access to microcredit will significantly improve their ability to manage economic activities (Ferdousi, 2015; Mahmud et al., 2017). In fact, one of the most significant barriers that rural women face while attempting to engage in economic activity is the lack of access to land. Therefore, safeguarding women's land rights is essential for their economic progress. It can logically be assumed that a woman who owns land would be in a more advantageous position in terms of earning income, tackling risks, taking judicious decisions as compared to a woman having no or small piece of land. Due to existing patriarchal norms in the society, women in rural areas of Bangladesh frequently encounter formidable obstacles in gaining access to infrastructure facilities. Ensuring women's access to rural infrastructure can benefit them in a number of ways, including increasing their capacity for decision-making on social and economic issues, obtaining credit and agricultural extension services, diversifying their sources of income, and minimizing risks when pursuing IGAs.

V. METHODS

5.1 Target Group: Landless, marginal, and small women borrowers of NGOs were the target group of this study.

5.2 Time and Location: The survey was conducted from August, 2022 to October, 2022 in four Upazilas (lowest administrative unit) namely Mirzapur, Delduar, Nagarpur, and Ghatail under the Tangail district of Bangladesh.

5.3 Sampling Technique: Before selecting the samples for this study, a thorough list of the NGOs' borrowers was compiled. A total of 392 borrowers were selected as samples from the list of 1,357 borrowers. Simple Random Sampling (SRS) was used to collect data with a five percent margin of error at the 95% percent confidence level.

The samples for this study were chosen using the following criteria:

- i. Borrowers who participated in the NGO programs for the first time in 2019;
- ii. Borrowers who received at least one agricultural training during 2019 and 2021;
- iii. Borrowers who fall between the ages of 20 and 60 years; and
- iv. The total amount of agricultural land owned by the borrowers' households could not exceed 150 decimals.

In this study, purposively 392 women who received microcredit in 2019 from selected NGOs for pursuing agricultural activities were also chosen from four other Upazilas in the Tangail district. These women had not received any agricultural training from any NGOs or government agencies in the last five years. These women borrowers who did not receive agriculture training were regarded as the "control group" for this study. Similar criteria which were used to choose the members of the treatment group (receiving training) were also used to select the women borrowers of the control group. It is important to note that both the members of the treatment group and the control group received loans from NGOs within the range of USD 250 to USD 500.

5.4 Data Collection: The primary data was collected from landless, marginal, and small women borrowers engaged in agricultural activities through microcredit programs administered by NGOs. Data were collected through a structured questionnaire mainly focusing on the following aspects, which include: (i) Demographic profile of the women borrowers, (ii) Management of microcredit, (iii) Rural infrastructural facility, (v) Household income and expenditure, (vi) Training, including the quantity, nature, and cost of training as well as the borrowers' perceptions of NGOs' training initiative, and (viii) Problems faced by borrowers in participating in the training program.

5.5 Analytical Strategy: In this study, in order to evaluate the effect of training on the household income and spending of the women borrowers, the PSM technique was applied. In recent years, researchers frequently employed this PSM technique while evaluating how development programs can influence the lives of underprivileged women borrowers on economic indicators. (Ferdousi et al., 2023; Mahmud et al, 2017; Sohag et al., 2015; Weber& Ahmad, 2014). For instance, the PSM technique was used to evaluate the impact of microcredit on the incomes of rural poor women (Mahmud et al., 2017). Due to its effectiveness in addressing the selectivity bias problem, the PSM technique has been widely used in research (Haque & Dey, 2016; Sohag et al., 2015; Mahmud et al., 2017). In PSM approach, techniques for matching include Nearest Neighbor (NNM) Matching, Kernel Matching (KM), and Radius Matching (Mahmud et al., 2017; Mahmud et al., 2022). In this study, NNM and KM matching approaches were used. In PSM approach, variables such as age, family size, and distance of rural market from the borrowers' dwelling place were used for matching purposes, and these three variables were also used by other researchers as matching variables (Mahmud et al, 2017; Ferdousi et al., 2023).

The Binary Logistic Regression (BLR) technique was employed in this study to evaluate participants' perceptions of their economic well-being as a result of participation in NGOs' training programs. Other researchers also used the BLR technique to assess the opinions of the program participants regarding their economic well-being and the

awareness level of different social aspects (Mahmud et al., 2017; Kabir et. al., 2018, Ferdousi et. al., 2023). In this study, the dependent variable “Economic well-being” was dichotomous in nature. If the women borrower opined that they were economically well-off due to the intervention of training was coded as “one” and otherwise coded as “zero”. The model can be specified as:

$$\ln [P / (1-P)] = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_7 + \beta_8 X_8 + \beta_9 X_9 + \mu$$

P = Probability that borrower will be economically well-off due to receiving training;

[1-P] = Probability that borrower will not be economically well-off due to receiving training;

X₁ = Age of the borrower (year);

X₂ = Years of schooling of the borrower (number);

X₃ = Working member in the family in 2021 (number);

X₄ = Area of land possessed by the household in 2021 (decimal);

X₅ = Total trainings received by the borrower from 2019-2021 (number);

X₆ = Distance of the nearest rural market from the borrower’s house (kilometer);

X₇ = Distance of the nearest NGO office from the borrower’s house (kilometer);

X₈ = Amount of non-institutional loans taken by the borrower in 2021 (Taka);

X₉ = Amount of loan taken by the borrower from NGO in 2021 (Taka);

μ = Stochastic disturbance term.

VI. RESULTS AND DISCUSSIONS

6.1 Profiles of the Women Borrowers

To comprehend the study participants' perspectives of agricultural training, it is crucial to understand their demographic and socioeconomic features. The processes of accumulating knowledge, experience, and the capacity for decision-making are significantly influenced by age (Mahmud et al., 2017; Mahmud & Hilton, 2020; Rahman & Ahmad, 2010). The average age of the treatment group and the control group barely differed. The treatment group's average age was 38.27 years, compared to the control group's average age of 39.72 years. This shows that middle-aged women received greater attention from microcredit providers than older women because they were seen as being more active and enthusiastic. Education is vital because it influences risk-taking, decision-making, and striving for a higher standard of living (Hilton et al., 2016; Mahmud et al., 2017; Mahmud et al., 2019). The average years of schooling for the treatment group and control group were 4.7 years and 3.2 years respectively (Table 1). So there was minimal difference in the two groups' levels of schooling. Both in the treatment group and the control group, the majority of the respondents were married.

This shows that lenders who offer microcredit favor married women borrowers over single women borrowers when disbursing credit (Mahmud et al., 2019). Married borrowers made up 96.32% of the treatment group's borrowers and 92.09% of the control group's borrowers, respectively. The respondents from the treatment group and the control group had nearly identical family sizes. The average family size in the treatment group was 5.3, whereas it was 5.7 in the control group, which is a very little difference. Rural

households in Bangladesh benefit from land ownership (Hilton et al., 2016; Mahmud et al., 2017; Mahmud et al., 2019). Overpopulation causes rural households to own little land (Mahmud et al., 2017; Mahmud et al., 2019). In this study, it has been found that the average land area possessed by the treatment and control group was 85.39 decimals and 97.15 decimals respectively. So, there was little difference between the land possession of the treatment and control groups. The average value of agricultural assets possessed by the treatment group was Tk. 1,25,417.28 and of the control group was Tk. 1,07, 258.21. The average distance of the rural market from the borrower's house for the treatment group was 0.81km and of the control group was 0.85km. In the treatment group, 75.36% of women borrowers received one training, 19.90% of borrowers received two trainings; whereas only 4.34% of the borrowers received three or more trainings (Table 1).

TABLE 1
DEMOGRAPHIC AND SOCIOECONOMIC PROFILE OF THE RESPONDENTS

Indicators	Treatment Group	Control Group	t-value
1. Mean age of the respondent (year)	38.27	39.72	1.18
2. Mean years of schooling (number)	4.7	3,2	2.57
3. Percentage of married women	96.32	92.09	-
4. Average family size (number)	5.3	5.7	0.26
5. Average land area of the household (decimal)	85.39	97.15	1.82
6. Average value of the agricultural asset (Taka)	1,25,417.38	1,07,258.21	3.15
7. Distance of rural market (kilometer)	0.81	0.85	0.37
8. Received one training (%)	75.76	-	-
9. Received two training (%)	19.90	-	-
10. Received three training or above (%)	4.34	-	-

Source: Survey, 2022

6.2 Types of Training Received by the Women Borrowers

NGOs provided training to the borrowers on different types of agricultural activities during the period of 2019 to 2021, which were: (i) poultry rearing, (ii) livestock rearing, (iii) fisheries, (iv) homestead gardening, (v) agribusiness, and (vi) nursery raising. Most of the women borrowers (173) received training in poultry management, followed by homestead gardening (132) and livestock rearing (117). As can be seen from Table 2; a significant number of borrowers (76) also received training on fisheries. Besides, a small number of borrowers received training on agribusiness (19) and nursery rearing (14).

TABLE 2
TYPES OF TRAINING RECEIVED BY THE BORROWERS FROM 2019-2021
(NUMBER)

Type of training	Training received	Training not received	Total
Poultry rearing	173	219	392
Livestock rearing	117	275	392
Fisheries	76	316	392
Homestead gardening	132	260	392
Agribusiness	19	373	392
Nursery raising	14	378	392

Source: Survey, 2022

6.3 Duration of the Training

This study, borrowers were categorized into three groups on the basis of the duration of the training programs, which were; (i) short-term training (1 to 7 days); (ii) medium-term training (8- to 15 days; and (iii) long-term training (above 15 days) (Table 3). The major portion that is 293 borrowers (74.75%) received short-term training; 77 borrowers (19.64%) received medium-term training and only 22 borrowers (5.61%) received long-term training (Table 3).

TABLE 3
ESTIMATED RESULT OF THE PSM

Duration of training	Frequency	Percentage
Short-term (1-7 days)	293	74.75
Mid-term (8-15 days)	77	19.64
Long-term (16-30 days)	22	5.61
Total	392	100

Source: Survey, 2022

6.4 Opinions of the Women Borrowers towards the Training Program

In this study, women borrowers were asked to provide their opinions about the effectiveness of the training programs operated by NGOs in improving their social and economic status. Women borrowers in this study provided their opinions on seven statements regarding social and economic issues which are closely related to their living standards. This study revealed that the majority of the women borrowers had a positive attitude towards training programs in improving their social and economic status, For instance, 63.27% of women opined that their income increased because of receiving agricultural training from NGOs (Table 4).

TABLE 4
OPINIONS TOWARDS THE TRAINING PROGRAMS (NUMBER)

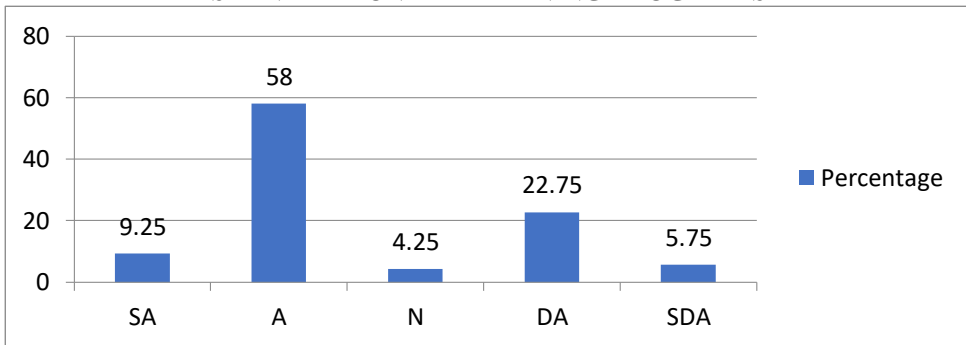
Statements	SA	A	N	DA	SDA
Increases my own income	25	223	11	117	16
Increases my own savings	21	204	9	131	27
Increases my agricultural production	36	211	4	135	6
Increases my risks management capacity	9	196	13	153	21
Increases my opportunity to get loans	23	227	5	119	18
Increases my contact with the agricultural extension offices	14	219	7	140	12
Increases my decision-making capacity	12	231	17	109	23

Source: Survey, 2022. Note: Strongly agree=1; Agree= 2; Neutral=3; Disagree=4; Strongly Disagree=5

Furthermore, in this study, a sincere effort was taken to assess the opinions of the trainees regarding the following statement: “My overall living standard improved due to receiving agricultural training”. The trainees provided their opinions about whether the overall living standard increased or not than before because of participation in the training program.

It is to be noted that the overall living -standard refers to economic (e.g., income and expenditure), technological (e.g., skill in using agricultural equipment, adoption of modern technology), and social (awareness of legal and environmental issues), aspects. This study revealed that the majority (67.25 %) of the trainees opined that their overall living standard increased because of receiving training while some of them (28.50 %) had the opposite view (Figure 2).

FIGURE 2: **OPINIONS OF THE TRAINEES TOWARDS OVERALL LIVING-STANDARD UNDER TRAINING PROGRAMS**



Note 3: SA= Strongly Agree; A= Agree; N=Neutral; DA= Disagree; SDA= Strongly Disagree

6.5 Impact of Training on Income and Expenditure

In fact, in the context of rural Bangladesh, the majority of people maintain a low standard of living because of inadequate income (Mahmud & Hilton, 2020). The sampled women borrowers in this study were not exceptional- most of them were marginalized people indeed with little education, skills, and physical and financial resources. Undoubtedly, income has a tremendous impact on a poor person's standard of living (Khan & Ali, 2014; Mahmud et al., 2019). Higher income increases a person's ability to spend more on economic activities (Hilton et al., 2016; Mahmud & Hilton, 2020). It is worth noting that the sampled women borrowers earned income mostly from agricultural sources (e.g., fisheries, crop, poultry, and livestock) and non-agricultural activities (e.g., handicrafts, labor earnings, and shop-keeping).

Participation of the women borrowers in the NGO-operated training programs was intended to improve their skills in pursuing IGAs as well as diversifying their economic activities which resulted in higher income. This study demonstrated that the treatment group's household income increased by 13,478.12 Taka (Bangladeshi currency) and 13,738.95 Taka respectively as compared to the control group after matching based on the NNM and KM methods (Table 5).

TABLE 5
ESTIMATED RESULT OF THE PSM

Indicator	ATT	t-value	Matching Method
Household income in 2021 (Taka)	13,478.12	2.85	NNM
Household income in 2021 (Taka)	13, 738.95	3.12	KM
Household expenditure in 2021 (Taka)	11,652.88	3.49	NNM
Household expenditure in 2021 (Taka)	11, 279.21	2.27	KM

Source: Survey, 2022

Undoubtedly, increasing the household's overall expenditures will result in a greater standard of life (Mahmud et al., 2017). In the microfinance programs, emphasis is also placed on raising the women borrowers' understanding of the importance of spending more on social and economic indicators which are closely related to living standards, such as food consumption, healthcare, and education. It was expected that women borrowers would be able to spend more on food and non-food items because of the intervention of training programs. This study revealed that the treatment group's total household expenditures significantly increased by 11,652.88 Taka and 11, 279.21Taka respectively, on the basis of NNM and KM methods (Table 5).

Table 6 shows the detailed estimated results of the Binary Logistic Regression. It demonstrated that ownership of land was positively and significantly related to the dependent variable “Economic Well-being”. Other researchers also observed that women’s ownership of land contributed significantly in improving the economic status of women

(Mishra & Sam, 2016; Agarwal, 2018). The probability of a woman borrower being economically well-off was 98.68% for every additional unit of increase in the possession of the land.

In developing countries, rural poor borrowers often borrow from non-institutional sources, and non-institutional loans are primarily used for non-productive objectives, such as smoothing their consumption. In Bangladesh, the informal credit market also exists that charges them exorbitant rates for loans on unfavorable terms of conditions. The range of non-institutional interest rates is between 120% and 140% (Rahman & Ahmad, 2010). It can logically be hypothesized that a woman borrower who obtains a loan from a non-institutional source is more likely to be over-indebted, which will have a detrimental effect on her economic status. This study confirmed that taking loans from non-institutional sources had a significant impact on the women borrower's economic well-being. It was also observed by the researchers that non-institutional loans reduced the economic welfare of microcredit borrowers in Bangladesh (Mahmud et al., 2022). The probability of a woman borrower being economically worse-off was 43.05% for taking each unit of loan from non-institutional sources (Table 6).

TABLE 6
ESTIMATED RESULTS OF THE BINARY LOGISTIC REGRESSION

Variable	Coefficient	Level of Significance	Odd Ratio
Age of the borrowers (year)	0.861	0.352	2.367
Years of schooling (number)	0.295	0.257	1.343
Working member in the family (number)	0.144	0.294	1.347
The land possessed by household (decimal)	4.321	0.016	75.264
Training received (number)	3.470	0.031	32.138
Distance of rural market (km)	-0.253	0.598	0.776
Distance of NGO branch office (km)	-1.498	0.154	0.225
Non-institutional loan taken (Taka)	-2.583	0.018	0.756
Loan taken from NGOs (Taka)	0.377	0.271	1.458
Pseudo R-square: 12.4%			
Overall accuracy: 87.2%			

Source: Survey, 2022. Note: Probability = $[odd / (1 + odd)] * 100$

6.6 Relationship between Agricultural Training and Economic Well-Being

Besides the PSM approach, in this study, an effort has also been taken to validate the relationship between agricultural training and the economic well-being of the female training recipients by conducting the Chi-Square test. It was assumed that there would be a positive change in the house hold income and expenditure of the women who received training as compared to women having zero training. The Chi-square results also confirmed that agricultural training had a significant relationship with the economic well-being of the training recipients in terms of household income and expenditure (Table 7).

TABLE 7
RELATIONSHIP BETWEEN AGRICULTURAL TRAINING AND ECONOMIC WELLBEING

Variable	Chi-square (χ^2)	Level of significance
Total household income in 2021 (Taka)	6.135	0.013
Total household expenditure in 2021 (Taka)	13.208	0.001

Source: Survey, 2021

6.7 Factors of Economic Well-Being

It is important to keep in mind that low-income rural agricultural households typically consist of somewhat tiny plots of land (Hilton et al., 2016; Mahmud et al., 2017). There is a strong correlation between a rural household's possession of land and the level of that household's living-standard (Agarwal, 2018; Hilton et al., 2016; Mishra & Sam, 2016). This idea can be developed further by making the pre-assumption that women who own a larger quantity of farmland are in a better position than small landholders in receiving training and credit facilities, earning revenue, and consuming goods and services. Farm women in Bangladesh often face challenges in achieving the level of agricultural productivity and profitability they desire as a direct result of scarcity of available land resources. In fact, ensuring women's ownership of land would assist them in increasing their income as well as their decision-making capacity regarding social and economic issues.

As mentioned earlier, rural women do not have access to the same training opportunities as their male counterparts. As a result, women face severe challenges in pursuing their IGAs. The sampled women borrowers in this study were given training facilities with the intention that their capacity of pursuing agricultural IGAs would be enhanced, resulting in increased income. This study revealed that the number of training received by women borrowers was positively and significantly associated with the dependent variable (Table 6). Similarly, other researchers also observed that providing training facilities to the farmers played a vital role in increasing their agricultural production and income (Schreinemachers et al., 2016a; Gautam et al., 2017). The probability of a woman borrower being economically well-off was 96.98% if she receives one unit of additional training (Table 6).

VII. CONCLUSIONS AND IMPLICATIONS

This study attempted to assess the impact of agricultural training on women borrowers who pursued agricultural IGAs. As expected, this study confirmed that training was crucial in improving the living standards of poor rural women in terms of income and expenditure. However, the impact of agricultural training on the income and expenditure of female borrowers was found quite moderate. The short duration of the training, a lack of sufficient follow-up to determine whether or not the women borrowers are actually able to employ the acquired new knowledge in the pursuit of IGAs, and an inability to properly

analyze the training needs of the borrowers could be the primary factors contributing to this issue. This study provided further evidence that borrowers had a positive attitude toward the training programs that would ultimately bring a positive change in their lives. This study demonstrated that women's ownership of land was an essential component for enhancing their economic well-being, whereas dependence on non-institutional loans would lower the probability of their economic well-being. In order to uplift the rural women's standard of living through the implementation of a training programs, policy-makers should concentrate on the following aspects:

After assessing women borrowers' training needs, they should be given long-term access to training facilities. Demonstrating hands-on training is crucial. Female borrowers should receive free or low-cost training materials. The necessary training materials ought to be made available to the female borrowers at no cost or for a very low price. It is also important that a training center is established as close to the villages as possible so that female borrowers have an easier access in attending the training program on a regular basis. It is also essential to provide the female borrowers with a training allowance so that they feel encouraged to take part in the training programs in the future.

Like other developing nations, underprivileged rural women in Bangladesh face formidable obstacles in gaining ownership of and control over land. As a direct consequence of this, they often struggle to pursue their IGAs efficiently. Therefore, required steps should be taken to safeguard women's access to land by leasing them *Khas* (reserved) land from the government. Through a broad effort, there should be a focus on raising the level of awareness in rural communities regarding the adverse effects of denying women access to land. Existing laws must be vigorously enforced to safeguard women's land rights.

It is also essential to highlight the provision of proper institutional credit support to women borrowers so that their reliance on non-institutional loans can be significantly reduced. There should be no prejudice against these female borrowers when it comes to receiving subsidies or grants from financial institutions. Effective strategies may include intensifying campaigns to raise public awareness about the negative effects of obtaining non-institutional loans through the media.

VIII. LIMITATIONS AND SCOPE OF FUTURE RESEARCH

Due to the structure and purpose of the training programs of the selected NGOs, this study became unsuccessful to include women borrowers who received training in non-agricultural activities as borrowers of NGOs. Therefore, it cannot be determined which type of training program, agricultural or non-agricultural, is more suited for the borrowers to improve their living standards because there is no way to compare the two. In addition, the combination of several types of development interventions, such as providing both training and credit, is not taken into consideration. In the future, additional research might be carried out in Bangladesh, covering all the districts of the country concentrating on training as well as other development approaches to women's life.

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Good Governance and Its Relations to Values, Ethics and Rule of Law

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ABSTRACT

Good governance is the life of the total administration of a country. How the administrative machinery of a country works efficiently and peacefully in every sector for the overall development must depend on fostering social values and ethical principles, reasonableness of law and legal rules and their obeying by the people from all walks of life. Moreover, the successful exercise of the nation's faculty is also a prime need to keep good governance in its right track. So, without ensuring these, it is very difficult for a country in the present globe to potentially govern and administer the total state of affairs and also to exercise its authority to reach the developmental goals and their sustainability. Therefore, the aim of this paper explores how good governance during this post-modern period is to be put into effect and finally established in a particular country. This paper also highlights and categorically explains how the cultivation of human values, compliance of ethical principles, allegiance and obedience to state laws and legal rules pave the way for nurturing good governance and all these approaches can help the government of any democratic country, developing or developed, to reach its target and finally emerge as an effective governing institution.

Key Words: Accountability, Ethical Principles, Colonial Outlook, Good Governance, Rule of Law, Social Values, Transparency.

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I. INTRODUCTION

The present globe is running into the vortex of social, political and ethnic turmoil and on account of that good governance suffers appallingly. All such turmoil arises from bad governance, deliberate lack of humanitarian values, and indifference to ethics, rule of law and also to those problems and matters, responsible for the cozy existence of the civilized living. Therefore, every government, be it democratic or any other form, gets always embarrassed, to a considerable extent regarding its forging of policies that will govern the total administration of the country. And the globe populace nurturing conscience is concerned with this turmoil the total annihilation of which can ensure good governance, effectiveness of human values, obedience to ethical principles and rule of law and above all establishment of human rights and safety to humanity. 'Human rights principles provide a set of values to guide the work of governments and other political and social actors UNDP (1997).

Thus, it is clear that the values of human rights along with ethical principles can exert a kind of shaping influence on the activities undertaken by the government if it is desirous of exercising good governance. So, an important relatedness exists between good governance and moral values and both human rights and ethical principles. These days, i.e. in the twenty-first century, Good Governance is an oft-discussed matter. In fact, it is very difficult to provide a definition of Good Governance, because this concept has become so teasing a theme to countless souls, irrespective of the nations that the concerned people cannot reach a proper consensus. So, its exact official definition involves the opinions and acts of all political authorities and administrative officials that in reality control and govern their own countries. According to the United Nations (UN), governance refers to the activities. Meanwhile, as stated by the International Monetary Fund (IMF), 'governance is a concept in which a country is managed, including economic policy, and legal aspects.'

II. GOOD GOVERNANCE: DEFINITION AND MEANING

It is difficult to define 'Governance' as a topic, because it cannot be said that this or that definition is absolutely correct and so can be accepted finally. The application and meaning of governance may appear different to various schools of thought. The very word 'governance' generally refers to the practices, systems, strategies, or method introduced, applied and used by an organization of a country to successfully conduct and manage all the concerned affairs 'at the highest level.' Now we come to the term 'Good governance'. Anything 'good' provides ample benefit and so its importance is difficult to define. However, we come to a conclusion that good governance 'can only be administered at the highest level of an organization.'

Therefore, the people forming the top authority in an organization must be transparent and out and out honest. Then they can form good and sound policies and can ensure exemplary performances the outcome of which is highly effective and thus contribute to all kinds of development, or to any agent outside the country. In this way, good reputation can be earned for achieving success for long. Not only this, the employees of the said company or corporation, its 'shareholders, stakeholders and other concerned

groups can rest assured that the organization is in good hands at the highest level when good governance is considered.’

In the 1990s, the World Bank emerged as the first international organization to forge the idea and perception of good governance and proceeded forward to ‘introduce the idea to the general public. In 1992A, a report of it containing the title “Governance and Development”, the notion of good governance was written as the way in which power is used to regulate the economic and social resources of a country for development.’ (The World Bank Group on Governance)

Now, the very term ‘good governance’ has been turned into a global concept. Good governance aims to eradicate corruption, pay heed to those who are constantly under the pressure of oppression in the process of decision-making, show regard to the opinions and demands of minorities, and respond positively to the needs of the social groups and communities at all the times.

2.1 Traits of Good Governance

There are a number of undeniable factors that positively help build up good governance like participation, sound policy, integrity, responsiveness, efficiency, transparency, accountability, equity and inclusiveness, the absence of corruption, lawfulness, etc. These factors or basic components are the traits of good governance.

2.2 Twelve Principles of Good Governance

“*Good Governance* – the responsible conduct of public affairs and management of public resources – is encapsulated in the Council of Europe 12 Principles of Good Governance.

The 12 Principles and Related Tools are:

- Principle 1. Fair Conduct of Elections, Representation and Participation
- Principle 2. Responsiveness
- Principle 3. Efficiency and Effectiveness
- Principle 4. Openness and Transparency
- Principle 5. Rule of Law
- Principle 6. Ethical conduct
- Principle 7. Competence and Capacity
- Principle 8. Innovation and Openness to Change
- Principle 9. Sustainability and Long-term Orientation
- Principle 10. Sound Financial Management
- Principle 11. Human rights, Cultural Diversity and Social Cohesion
- Principle 12. Accountability

The 12 Principles are enshrined in the Strategy on Innovation and Good Governance at local level, endorsed by a decision of the Committee of Ministers of the Council of Europe in 2008. They cover issues such as ethical conduct, rule of law, efficiency and effectiveness, transparency, sound financial management and accountability.

The Centre of Expertise has developed toolkits to assist local authorities, and in some cases central authorities, in living up to these principles and thus delivering better services to citizens.

The European Label of Governance' Excellence (ELoGE) is awarded to local authorities having achieved a high overall level of good governance measured against the relevant benchmark.

All decision-makers, collective and individual, take responsibility for their decisions. Decisions are reported on, explained and can be sanctioned. There are effective remedies against maladministration and against actions of local authorities which infringe civil rights." (Council of Europe 2022)

2.3 Good Governance: It's Positive and Negative Factors

There is no denying the fact that there is a sound relation between good governance and compliance to ethical principles and legal rules and successfully bringing the rule of law into force. The quest for good governance is nowadays launched by many a country in the world and, therefore, the term 'good governance' has gained popularity to most of the democratic governments, seasoned politicians, exponents of ethical values, international agencies and law-makers. But there are a number of major barriers like tendency to corruption, indifferent to human values, nonobservance of ethical principles, lack of transparency and accountability, social injustice, terrorism etc. that have already slowed down its paces to reach the signal success. These hindrances and obnoxious activities are triggered, if not outwardly supported, by the maladministration of a government that miserably fails to cope with them. As a result, peace, harmony, quality management and extensive development at different sectors in the country are at stake. Because, all these are miserably influencing one another and, therefore, honesty of purpose is absolutely required in all spheres. Then, how good governance will flourish is a grave concern.

III. ETHICS AND MORALITY: THEIR INDISPENSABILITY FOR GOOD GOVERNANCE

3.1 Ethics and Morality

Ethical and moral principles must be cultivated by the corporate body that will steer the main machinery of a country's governance; if they succeed in their trials and endeavors, only then the outcome of their administering the country can be termed as good, otherwise not. Ethics is typically the study of desirable behavior and morality is the practical guidance of such behaviors. Ethics is the home of values and principles, which have to be translated in norms and rules to lead to behaviors. One maintains Ethics because society instructs that it is the right thing to do, on the other hand, one obeys Morality because we have faith in something that it is either right or wrong.

Ethics and morals, both are closely related to "right" and "wrong" conduct. Ethics points to rules provided by external source and codes of conduct in workplaces or religious

ideals and scruples. Morals point to an individual's own concepts and thoughts about right and wrong.

Each and every person hold a number of principles, helping him all through his life to cope up with any odd and adverse situation; these are marked out as ethics. On the other hand, morals are very strong principles and very rigid and these rules are deemed absolutely right by a majority of people.

3.2 Ethics and Instinct

The principles of ethics, morality, values and virtues are, indeed, the guiding forces of human life. Without the cultivation of these, human beings cannot lead their life properly, happily, successfully and peacefully. But, to ensure this process, humans should bring the good instinct under their absolute control, outright cancelling evil instinct. 'Instinct' is a thing, related to body and mind; it is 'an act or course of action in response to a stimulus that is usually inherited and is automatic rather than learned.' Instinct has two courses of action—good instinct and evil instinct. Now, what do we mean by evil instinct? Evil instinct is the combination of all kinds of spiritual diseases like, pride, dishonesty, slothfulness, lust, greed, envy, back-biting, nepotism, hypocrisy, anger, shirking of responsibilities, bribing, telling lies, stealing etc. Therefore, people in general are always influenced by his or her instinct; none can go beyond it. It is generally found that more than most of the people of the world are easily influenced and persuaded by evil instinct. So, proper administering of good governance completely depends on the cultivation of good instinct by all the employees of any organization or institution and its certainty must be ensured. Then, accountability, transparency, honesty, and so to say all prerequisites needed for good governance must be complied and only then the company will reap ample harvest and peace will prevail.

IV. VALUES: IT'S INEVITABILITY FOR GOOD GOVERNANCE

Values are always invaluable. Without their cultivation and application in every sphere of activity, our life will turn barren and activities will prove fruitless. The following Types of Values are generally deemed essential: Ethical, Moral, Social, Aesthetic, Professional and Psychological.

4.1 The Necessity of Values for Good Governance

The characteristics of good governance are numerous, the significant few of which are attributed as equal participation, orientation of consensus, transparency, accountability, efficiency, equity, responsiveness and cultivation of moral values in life and character, fostering of ethics and obedience to rules of law.

Spontaneity of equal participation of both the sexes in activities and forums for the welfare of the nation is a prime requirement. People, both the conscious male and female, can, on their own accord, launch their participation directly or ensure their representation through various organizations, sectors and multiple institutions. This can assert that the freedom of expression of opinions and the unhindered relation through such

association and participation are proved inevitable; this can contribute a lot to the governance of the country on the way of becoming good. This can also pave the way for the formulating of country policies, their implementation and successful materialization as all the advantages and grievances of the society have already been brought before the government machinery for impartial scrutiny and assessment. Besides, in all policy framing and decision making, the neglected voices of the society must be given ears and importance.

4.2 How Values Affect Good Governance

Values are very important as they affect attitudes and behavior of the people and form guidelines in making decisions and forging policies. Thus, the knowledge and cultivation of human values will generate ability to predict future decisions and actions based on reliability. These factors can also build trust in a person, or in an institution, or in a government.

V. THE RULE OF LAW AND GOOD GOVERNANCE

People construe law, rules, regulations, bye-laws, statutes, ordinances, etc. for people, because people are always motivated, influenced and persuaded by his/her evil instinct. So, law should be obeyed in whatever form it is in existence and wherever it is introduced. In this sense, the rule of law is deemed a kernel element for the on-going progress of the good governance. Sustainable Development Goal (SDG) 16.3 calls on countries to “promote the rule of law at the national and international levels, and ensure equal access to justice for all”.

The Judiciary Department of every country must ensure “Effective and efficient justice systems”. This approach is very significant and crucial to conduct the rule of law in its actual sense of the term. In this sense, the vital course of action is to establish its effective sustainability for undeniable performances without criticism. It should be guaranteed that every social being is equal under the eye of law and that no individual or a particular group can illegally draw any amount of compassion, any scope and special chance under the law ‘by virtue of origin or background, socio-economic circumstances or links to society’s power structures.’ So, the protection of individual rights and freedom, general human rights, equitable distribution of country’s resources and legal and available opportunities is a prime requirement for the well-functioning of the government machinery. In a word, meting out *of constitutional justice* is a pre-requisite for sound good governance.

“Rule of law and human rights are very burning issues in Bangladesh now. The few core aspects of rule of law such as - equality before law, absence of arbitrary exercise of government power and protecting rights of citizens.

“Though, rule of law is one of the most crucial elements of good governance and judiciary is a very vital institution of government to establish rule of law in a country. However, breach of equality before law, abuse of power and violation of human rights are still stirring in Bangladesh. Delay and log jam of cases is another crucial problem of Bangladesh judiciary.” (Hossain, July 2014).

Respect to The Rule of Law is as meaningful as a particular human life. It is irrefutably considered a key factor for an individual, a family, a community, the government of a state and all government, non-government, quasi-government, private organizations and institutions. Law shows the paths leading to the goal of life. The various branches of the country, such as the executive, the judiciary and the legislative as well as all autonomous institutions, all audit institutions and special commissions must abide by the law of the country and be liable and answerable on behalf of the people.

On the one hand, all citizens of the state, existing media, and civil society organizations and, on the other hand, their elected and non-elected office holders should always uphold the law of the country and comply with the judicial verdicts. If it is followed, then the corruption and all fraudulent practices must gradually be lessened and ultimately be effaced from the life of citizens. As a result, the country will emerge as a peaceful habitat for a digitalized nation, and finally good governance will be established.

The rule of law is based on four elements: 'legality, division and balance of powers, independent judicial control, and protection of fundamental rights.' The concept of rule of law is, in fact, a set of principles and ideals controlling and administering the legality of power. Governments must construe better and suitable laws for institutions and organizations so that equality, respect for human rights, accountability, stability, and access to justice for all must be ensured. It also helps to trace out the levels of corruption and causes of violence and to efface their further exercise. One of the prime conditions of a civilized and cultured nation is to show respect and to comply with the existing laws of the country.

VI. BUILDING 'MODEL GOOD GOVERNANCE'

'Good governance model' is a common term, but 'model good governance' is referred to a particular term and so and so can claim that everyone's model is good. Now, what do we mean by 'good'? 'Good' is such a qualifying virtue, accepted by all without any quarries. On the other hand, 'governance' means the outcome of a country's total administration and if it ensures continuous welfare to the country people, it is good. This is the simple interpretation; otherwise, though the idea of these two unseen and inanimate words is available and in existence, they cannot be properly defined; they can be understood and interpreted as their individual opinion. However, a good governance system must have many parts and ways that not only will work but also will always be working to bring about positive success for the nation. The following aspects are the prime requirements for building up 'Good Governance Model.'

6.1 Transparency

Transparency is a vital factor for good governance and giving out of legal verdicts. In every activity, done by any individual or by an agency, its reflection should be apparent. It signifies that the introduction and enforcement of any decision must be according to rules and regulations prevalent in the country. Transparency also ensures that information is easily accessible to the people in general as well as the stakeholders. The government in power should be transparent whether all its activities are being performed as

per law and justification and why all these activities are undertaken. These things should also be made clear to the public.

6.2 Accountability

Accountability is the most important yardstick to measure the actual nature of good governance. Accountability and good governance are interrelated and interdependent. In the context of introducing public policies and the total state administration, the oft-quoted term accountability entails such elements like moral, ethical, organizational, legal, professional and political. Accountability is the very basis of every governing institution and process; it is related to all responsibilities, both constitutional and legal, undertaken by the authorities of the country. The success of the accountability depends on the commitment from political leaders, holding different key positions of the government, who must refrain themselves from misusing powers and influencing the administrative machinery as their whims and caprices dictate. So, much of the well-functioning and the sustainability of good governance bank on the demonstrating of the highest personal integrity, fair justice and the upholding of moral truths by all governing agencies. However, good governance depends on transparency and accountability which again bank on the rule of law and social and personal values. 'At bare minimum, good governance with accountability and transparency is a foundation for peace and security, without which all of societies' greater aims cannot be achieved.' Besides, good governance encompasses the significant three organs of the country's government which is democratic, namely Legislature, Executive and Judiciary.

VII. THE COLONIAL OUTLOOK: A BAR TO ADMINISTRATION AND DEVELOPMENT

Another thing which is very much detrimental to mass interests and creating good governance in the developing countries is the so-called colonial outlook that the government machinery in those countries was shaped by colonial authorities during their regime and thus remained old-fashioned till date and such establishment includes elements of maladministration without neutral outlook. This sort of inherited systems not promoting the public welfare should be reformed with the introduction of newer policies where chances are slim to dive deep into corruption and unethical state functions. The fang of the colonial administration pierced the colorful spectrum of both local and national culture, resulting in bleeding profusely, and therefore tradition in the process of making keeps on suffering appallingly. Only consensus-oriented and efficient good governance can remove all such uncertainties and colonial dirt and bring the nation's culture and tradition in their original shape and form. A traditionally cultured government can only administer the total state of affairs potentially and effectively. Thus, it can select their desired goals in free political climate and congenial administrative environment and only then sustainable development in both public and private sectors can easily be obtained.

7.1 Adult Franchise and Role of Judiciary

For the enactment of law, the legislature plays a vital part. It should be formed through free and fair election i.e. adult franchise where transparency must prevail. Any

government, if it is democratic in the actual sense of the term, must be accountable to legislature body and parliamentary committees. The executive body of the government should be an organ, responsible for the fair execution of the laws related to the country's administration that will perform its assigned activities properly and also launch and carry out different programs as per passed budget, and ensure protection and security of life and property for all. Professor A. V. Dicey's classic book *The Law and the Constitution* embodies at least three distinct but kindred concepts, "One is absence of arbitrary power or supremacy of law, equality before law and constitution is the result of the ordinary law of land/individual rights" (2010) In view of Dicey's concepts, arbitrariness in exhibiting power by the parliamentary body disregarding the supremacy of law is detrimental to the establishment of good governance. In other words, the supremacy of law must reign in the country where arbitrariness is to be totally withdrawn. Again, it is universally acknowledged that the country should not discriminate among its citizens because all are equal in the eye of law irrespective of sex, caste, creed and religion, and this sense of equality eases the path for any government to emerge as a good democratic one. Any government in power should not forget that the Constitution of the country is for the public welfare and so it is the outcome of the law of land, and the fundamental human rights, connected with human values and ethical principles. All these are the preconditions for seeking good governance in the modern era.

7.2 International Monetary Fund (IMF)

The International Monetary Fund (IMF) declared in 1996 that "promoting good governance in all its aspects, including by ensuring the rule of law, improving the efficiency and accountability of the public sector, and tackling corruption, as essential elements of a framework within which economies can prosper." So, it can be said that the function of the legislature is to check all sorts of corruption, violence, terrorism, unethical activities, etc. that can easily thwart the onward progress in the socio-economic field of the country and bar the country to stand on its strong footing. The third important organ is the judiciary which must be independent and formed with honest and trained personnel who are morally and ethically superior. This body will ensure the proper application of law, giving out verdicts, employing conscience and integrity. The quick dispensation of justice is the watchword of this body.

VIII. GOOD GOVERNANCE AND CIVILIZATION

Civilization is a very great thing. Regarding civilization, philosopher Bertrand Russell says, "Civilization, in the most important sense, is a thing of the mind, not of material adjuncts to the physical side of living. It is a matter partly of knowledge, partly of emotion. "Knowledge means to be aware of himself, then to learn about the world and life, to master the chosen profession, to study and research all those branches of human learning that are essentially important for the development of human spirit. Thus, when a man acquires knowledge about the universe, he is partly civilized. Emotion means to learn about own culture, to cultivate good and amiable manners and behavior, to obey the laws of the country and endeavors are to be made to establish the rule of law. In whatever form the laws and legal rules exist in a country, these must be obeyed by the people of the society, because such allegiance to law is absolutely required for the sustainable development of the

country and the integration of the nation. “Where rule of law is strong, people uphold the law not out of fear but because they have a stake in its effectiveness.” So, it is the inevitable responsibility of a nation to uphold the rule of law, infusing into it that strength which signifies its effective participation. Therefore, it ultimately contributes to the making of civilization, promoting harmony which leads to the establishment of peace and order. So civilization does not at all mean the physical development of a man's worldly life. Love and fellow-feeling instead of wealth, can measure and evaluate the extent of betterment offered by civilization which also works to assuage the sufferings of humanity. It is the human heart that can engender goodness, so for gaining good governance, the development of soul is deemed the prime factor. On the other hand, it is the human notion that can practically take right steps at the right moment to execute the policies taken by the democratic government. Only then good governance may spread its wings to shower blessings on the peoples within and beyond the boundaries.

If the scenario is different from those of the stated above, then democracy will remain fragile and be always under the threat of constant violation of fundamental human rights, political and social rivalry, the absence of consensus and rule of law, economic insecurity and repetition of institutional corruption. If the country is being deprived of the outcome of the proper exploitation of natural resources and the people remain in the dark without having information about the taking of decisions and their implementation by the executive machinery, the good governance will remain far to seek. Rather an environment of frustration will be sitting deep in the heart of the people and a corroding disappointment will envelop the mind. These days human pollution is rampant across the world. So, unpatriotic feelings should be dispelled and polluted heart and soul should be corrected and purified. These affect the overall life-style of the citizens.

IX. OBSTACLES TO GOOD GOVERNANCE

In this modern era, particularly in a democratic country, ‘good governance’ is a very pleasant and palatable term. The present democratic form of government introduced in different countries is not considered pure democracy and it has its own discrepancy. The present-day democracy is not democracy in the actual sense of the term. The absence of constructive criticism is generally discerned. To quote from George Orwell’s famous book *Animal Farm*, “All animals are equal but some animals are more equal than others.” In this sense, equality at the present time undemocratic system of government suffers, because it is found here that all men are equal, but some are more equal than all other country people.

The non-participation of opposition party or parties is a regular feature which allows the party in power to provide opportunities to take decisions at their own sweet will. The land of a number of countries is more fertile than many of the countries of the world as Bangladesh is. Its fertility rate is very high. But, in Bangladesh good governance is yet to be established because of the irresistible corruption and fraudulent activities.

‘The hindrances of democracy in developed; developing and least developed countries cannot be measured in a same scale.’

In the present era, the progress of Science and Technology is indescribable. But a number of parties in power or governments show their apathetic attitude to use its beneficial outcome in their states. After the election the political leaders who are just going to govern the country grow regardless to fulfilling the demands of the country people. As a result, the new generation finds that their life is at stake.

Practice of nepotism and favoritism creates factions and frustrations among the citizens. For this, the total development of the country suffers. The major and significant principals of ethics and human values, essentially required for the gradual development of good governance in a country, are not properly cultivated and complied, rather these are neglected. As a result, all kinds of rights and public welfare are disregarded.

The main hindrance to the establishment of good governance is disobedience to rule of law, in whatever extent it might be. Non availability of freedom of judiciary engenders violence and other social problems. Failure of the team work of the political leaders and unfulfilling of their political commitments create a bar to the establishment of good governance and on account of this, sustainable development of the country suffers tremendously.

The post-colonial outlook of the people who steer the country and exercise executive authority is a great hindrance to good governance. The right person is not placed in the right place.

X. CONCLUSIONS & RECOMMENDATIONS

In the ultimate analysis, accountability, transparency, allegiance to law must be ensured to provide the people with proper security and restoration of self-esteem. Needless to say, proper respect to law and order of the country is to preserve self-esteem and this sense of attitude can only create the true path of democracy. Undoubtedly, law-abiding people are democratic. Side by side, the high ideals of public morality and fair play of honesty are the reality for good governance.

The gradual development of an open democratic culture, creation of opportunities on equal basis, equitable sharing of power and full representation of all classes of society in public affairs, proper respect for law ensures good governance. We should demonstrate zero tolerance to any incident begetting intolerance. So, a democratic person enjoying good governance is a person through other persons.

In view of the general people, the countries of the modern globe are too conscious and too powerful and, therefore, demand corruption free society, administration in its purest form, the improved moral and ethical conscience of the authorities exercising power and also of all kinds of responsible officials, and above all values and respect for legal laws, dispelling all sorts of taboos and finally shedding off the dirty attitude to encourage evil motives. Only then the modern world can enjoy the fruits of good governance. The specific recommendations of this study are outlined below.

1. Good governance needs good people. So, good, experienced and seasoned leaders and administrators are required at the government machinery, avoiding one-night politicians.
2. The efficient and skilled manpower should be employed to bring about a gradual increase in development.
3. Organizational capacity should be ensured.
4. The educational system should be revolutionized. Topics of lessons on graceful behavior, norms and manners along with ethical, moral and humane principles are to be introduced.
5. Patriotic feelings of the nation must be increased following relevant paths and ways.
6. The total image of the nation can be cited as an example.
7. Taking essential and effective steps so that humans cannot be polluted. Rather, the government in power should work for the establishment of peace, harmony and discipline in society and organizational environments.
8. A civilized man always cultivates a sense of patriotism and the last grain of pollution should be effaced from the heart.

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Impact of Industry-Academia Collaboration on Access to Knowledge and Research

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ABSTRACT

Collaboration between industry and academia is an essential aspect for nurturing innovation and improving the performance and effectiveness of research, particularly in the context of a more dynamic global environment where multiple factors are simultaneously at play. Collaborations are, therefore, a great source of enhancing the quality of research and strengthening their effectiveness. Ensuring the wide availability of research also indicates that a wider populace is able to access the knowledge developed by the literary work. By bridging the gap between theoretical research and real-world applications, such collaborations can improve educational quality, promote knowledge and technology transfer, and equip students for careers in the real world. This study tries to look into the nature of the relationship between industry-academia collaboration, access to knowledge, innovation and quality of research. This study identified that top tier research papers were linked to a higher extent of industry-academia collaboration whereas collaboration of industries with a distant university usually meant that the research was of high quality. The study also offers insights from some cases across industrialized nations, showcasing effective examples of industry-academia collaborations.

Keywords: Industry-Academia Collaboration, Access to Knowledge, Research Effectiveness, Publication Quality, Innovation, Distance of Publication, Proximity, STEM.

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I. INTRODUCTION

There is a big shift taking place in the arena of global development. Collaboration between industry and academics is a fundamental requirement to foster innovation and improve the performance and effectiveness of research in such a context. The trend toward collaborative research, in which researchers collaborate on an issue with industries where that issue is directly being experienced, offers fascinating opportunities for knowledge development and process improvement. Often times, the academia tends to incline towards theoretical concepts and models without any practical involvement. On the other hand, business practitioners sometimes engage in frequent trials and errors without having adequate informational support in the background. By engaging in a collaboration, they can utilize each other's expertise and capabilities and their synergistic efforts will lead to win-win situations. The academia can produce more realistic research papers while practitioners can incorporate theoretical concepts into their brand building efforts.

The goal of academic institutions is to provide educational opportunities for students and knowledge seekers. One of the ways that universities implement this goal is by producing research papers on various topics as the purpose of research is to build upon the past studies and find information pertaining to the gaps in the existing literature. This helps knowledge seekers and decision makers alike as they can get evidence-based information, depending on which, they can proceed along their relevant courses of action. However, to ensure that such research works are actually instrumental in achieving the goals, they need to meet certain quality standards and have to be effective in nature. This can be made sure when academicians and researchers collaborate with industry experts to incorporate relevant, timely, and high-quality content into their research and make it more fruitful for the community.

This collaboration is thus an element that is crucial for both academicians and practitioners as it opens the doors for improved research capability as well as better scope of innovation and economic growth (Misbauddin, 2022). Both parties can enjoy the benefits from the transfer of knowledge and shared use of research expertise and industry technology. Making the results of such collaborations available to the public, be it in the form of research papers or better products, will lead to greater access to knowledge. This triangular nature of relationship between the industry-academia collaboration, access to knowledge, and research effectiveness is exactly what this paper sheds light on. This is because, better comprehension of these concepts will enable researchers and industry professionals alike to solve problems and curate enhanced solutions for the mass population.

Multiple studies on the importance of industry-academia collaboration have been done before. But, there have not been many studies that try to examine the relationship between these collaborations, research effectiveness, and access to knowledge. In this era of digitization where data flows rapidly to and from dynamic systems, the need to understand the synergistic power of industry and academia and its impact on research quality and knowledge creation has become quite important. While the academia gains access to real-world problems, industries get to leverage high quality research insights from the academia. Although, the concepts of industry-academia collaboration and research

effectiveness can be subjective in nature, its impact can be measured quantitatively in a number of ways, depending on the focus of the study. Previous literature has delved into econometric analysis, regression analysis, frequency analysis, etc. to understand the effects of this collaboration. However, no other paper has made use of the Leiden ranking, published by the Leiden University. This ranking provides a composite overview of university performance, in terms of bibliometric factors like scientific impact, collaboration, open access publishing, and gender diversity, making it a highly suitable data source for investigating the relation between research effectiveness, location, and industry-academia collaboration.

This paper, therefore, provides a comprehensive overview of how the industry-academia collaborations, effectiveness of research, and access to knowledge are interrelated, proving to be a great asset for researchers and business practitioners alike.

II. OBJECTIVES

The broad objective of the research is to understand the relationship among industry-academia collaboration, access to knowledge, and effectiveness of research, for the joint development of academic institutions and industrial organizations. Specific objectives of this study are as follows:

- i. To identify the relationships between research publication quality and industry-academia collaborations;
- ii. To identify the association between proximity of universities with the industries they collaborate with;
- iii. To explore few case studies that have successfully implemented industry-academia collaboration and draw insights from them;
- iv. To uncover the barriers that hinder the smooth collaboration between industry and academia, thereby posing as obstacles to access to knowledge.

III. LITERATURE REVIEW

3.1 Importance of Industry-Academia Collaboration

Academia is used to describe the group of students, scholars, faculty, and researchers that are involved in higher education and research (Sen et al., 2015). Academia has the ability and the motivation to conduct thorough research, based on the access to previous literature and studies. The aim of academia is, therefore, to add to the existing body of research, enabling a greater access to knowledge for the knowledge seekers.

On the other hand, industry indicates any economic activity involved in the production of goods and services (Sen et al., 2015). Whereas researchers are the ones to formulate the policies and solutions needed to solve a problem, it is the industry practitioners who actually materialize those solutions to meet customers' demands.

In a practical world where implementation of knowledge and skills is important and is the deciding factor for individual and team productivity, university education, focusing only on theoretical knowledge, is not enough. Collaborations between universities and business organizations usually promote high level of learning outcomes and innovations due to the participation of newcomers. There are multiple quantitative studies that assessed the positive connection between university-industry collaboration and innovation at the micro or firm sphere (Webster & Etzkowitz, 1991; Webster, 1994). Innovation requires fresh perspective which often new learners can bring forward, a process that might be burdensome for professionals working in the same field for decades. In a knowledge and information-based economy, universities automatically become a crucial source for innovation and research contributing to the economic growth of individual countries. This process takes place through the supply of skilled human capital, delivery of knowledge into the economy, and producing different technological advances for different sectors (Etzkowitz et al., 2000, Florida & Cohen, 1999). Due to the process of developing novel ideas, universities often become the breeding grounds for entrepreneurship (Lazzeroni & Piccaluga, 2003). This trend can be seen worldwide as students and graduates of technology-based universities, along with business schools, are constantly coming up with new entrepreneurial ventures and solutions to different problems worldwide. The collaborations between universities and industries reflect a growing trend whose purpose is to improve technologies and the overall knowledge situation. Innovation and development of new products and values help firms capture greater business profits, either through increased sales (and higher market share) or through capturing higher value through pricing. University-industry collaborations lead to innovative product development, which results in greater sales growth in the market (Mindruta, 2013).

3.2 Advantages for Academic Institutions

Universities limit their potential and contribution if they strictly focus on theoretical teaching methods instead of enabling an environment that promotes creativity and research. The application of research in a commercial and industrial method yields financial benefit for the universities that aspire to be entrepreneurial hubs and contribute to the development of the national economy (Etzkowitz et al., 2000). How successful a university will become in innovation and entrepreneurship depends on the context and purpose of that university. Engineering and technological universities have a stronger focus on lab-based research while other faculties of the same university focus on different goals. Social science faculties often have greater focus on research and impacts of policy interventions. Business faculties focus more on overall economic and specific industrial implications. As a result, the innovation or the specific entrepreneurial expression of different universities depend on their resources related constraints, their capability, and the context they function in (Williams & Kitaev, 2005). The collaboration with industries consequently depends on the context and purpose of the universities. For engineering universities, collaborating with technologically advanced industry leaders is an important source for innovation and competitive advantage. For business schools, collaboration with corporates, investors, etc. is important for better exposure to industry realities for the students. This will result in a more advanced and prepared workforce who will be better aimed to become future industry leaders.

3.3 Advantages for Business Organizations

From the perspective of the industry players, collaboration with universities provide a competitive advantage for them as well, especially in the fields of Research and Development (R&D). The number of firms in developing countries having independent R&D facilities or competencies is very small compared to that of the developed nations (Motohashi & Yun, 2007). In order to achieve competitive advantage in present dynamic market, firms need to come up with innovative and creative solutions for their consumers. Industries that are falling behind in innovation usually lack efforts and investments in research and beneficial collaboration. R&D capacity has to be considerably high and significant especially for innovation in the fields of technology (Negassi, 2004). This capacity cannot be achieved only through external partnerships or by solely depending on external stakeholders. Even for firms having external connections with research and intellectual services, having internally weak R&D structure can hurt the innovativeness of the firm as they have to depend on the intellectual servings of outside stakeholders. Collaboration with universities that firms can treat and invest in as if their own can yield significant and important innovation outputs. The students and teachers can receive the fund and incentives for research and the firms can have critical solutions for their problems in order to develop new technologies or enhance existent ones, creating a win-win situation for both parties. In such situations, collaborative efforts for innovation strategies are prominent options in developing countries where firms have limited R&D capabilities (Kafouros et al., 2015). Industries make the practical use of knowledge and make innovations using the theoretical concepts. As a result, even if companies are the main stakeholders for making proper use of knowledge turning it into products and innovation, the true source of this knowledge is the universities and the research centers (Bai et al., 2020). The responsibility of universities and the academic arena is the spread and diffusion of knowledge into the practical world or the industries. Spreading of knowledge to industrial stakeholders is one of the core responsibilities of universities and research institutes (Eom & Lee, 2010).

3.4 Relationship between Industry-Academia Collaboration and Quality of Research

For academia and researchers working under universities or research facilities, industrial collaboration is an opportunity for growth. Teaming up with certain firms and corporates provides funds and research scopes that otherwise may not be available for the researchers under academia or specific research facilities. In fact, the relationship between research funding available and publications follows an inverted-U Curve. As public funding for research and the fraction of this funding for collaboration subsequently increase, the number and quality of joint publications also rise. But there is a threshold for this positive relation. When the fraction of the funding reaches more than 30-40% of the threshold point, the outputs for joint publications decline (Banal-Estañol et al., 2015). Oftentimes, the research demand for industries may not be of concern to the actual researchers if the spheres are severely disconnected. However, there is an incentive for researchers as collaboration with industries enhances the reputation of the researcher themselves (Moutinho et al., 2007; Smith & Powell, 2001). Researchers benefit from such collaborations both because their number of publications and the quality of their work may rise. There is a positive relationship between the collaboration of researchers with

industries and their overall publications (Agrawal & Henderson, 2002; Azoulay et al., 2007). But, the quality of these research collaborations depends significantly on the researchers themselves, including their preference, expertise, and interest matter for the process of research and their inclination toward ensuring robustness. The quality of the real outputs of such collaborative research therefore depends on the researchers and how they leverage the industrial collaboration along with their proactive and selectiveness (Callaert et al., 2015).

3.5 Relationship between Industry-Academia Collaboration and Distance of Publications

Some studies have been conducted to examine whether there is any relationship between the distance of the source of publication from the industry with which the collaboration takes place and the industry itself (Muscio, 2013; Garcia et al., 2018; Medeiros et al., 2021). The geographical proximity can reveal a lot of information about the universities conducting research. If universities are able to interact with industries located in distant areas, it can imply that they have increased visibility among the industry players which help them to attract such collaborations (Muscio, 2013). Laursen et al. (2010) stated that if firms are given the choice, they are more likely to prefer quality over geographical proximity of research institutes. This indicates that firms will at first go for local, top-tier universities for collaboration. In the absence of such universities, they will prefer collaborating with a second-best, non-local university implying that the quality is the utmost priority of firms. Tang et al. (2020) took a more detailed look into the relationship of university proximity and research quality with the performance of product innovation and found similar results. They discovered that collaborations with intra-regional and average-quality universities only led to incremental product innovations whereas those with cross-regional and high-quality universities resulted in radical product innovations.

Proximity or the distance of publication, therefore, seems to be an important factor that needs to be considered while studying the relation between industry-academia collaborations and research effectiveness. Based on the findings, it will be possible to better comprehend the types of universities which will be more preferable by industrial firms to be selected as collaboration partners.

3.6 Influence of Government on Industry-Academia Collaborations

The collaboration, however, does not only have two parties, namely the universities and the industrial employers. Another crucial party is the government. Although universities have significant autonomy over their curriculum and what is deemed to be important in their teaching structure, the overall university level education is required to follow the mandated national guidelines. These guidelines and policies affect the quality and intensity of the education outcomes as all universities are required to follow the jurisdictions of the governmental education regulations. This in turn, changes the philosophy and purpose of the universities over time. Thus, in order to promote innovation and make universities efficient in entrepreneurial ventures, government incentives and support can direct the educational sphere towards the right direction. Studies have shown that the collaboration among the three stakeholders, namely industries, academia, and

government, is a crucial aspect for the regional and national innovation system development (Etzkowitz et al., 2000; Motohashi, 2005; Gibbson et al., 2006). The support from government can take the form of subsidies and funding for collaboration, development of infrastructure required for effective partnerships, etc.

IV. METHODOLOGY

As the paper tries to uncover the relationship of industry-academia collaboration with the access to knowledge, innovation that ultimately affect the research effectiveness. This study used secondary data of Leiden Ranking³ from the Leiden University and deployed the quantitative technique of correlation analysis. The paper has also used insights from peer reviewed journals to understand the background of the concepts being studied in this research.

4.1 Data Collection

The data for correlation analysis is collected from the Leiden Ranking from the Leiden University which has multiple indicators for different countries and universities over the years. In order to understand if certain variables are related, correlations are run. These results however do not indicate any sort of causation. It only shows relation between variables that indicates possible benefits of collaboration. But the causation behind those benefits needs further identification and cannot be concluded from simple correlations.

4.2 Variable Identification

The variables used in the correlation analysis are tabulated below for better understanding:

P_top 1 =	top 1% of papers in that field
P_top 5 =	top 5% of papers in that field
P_top 10 =	top 10% of papers in that field
P_top 50 =	top 50% of papers in that field
P_industry_collab =	Percentage of industrial collaboration papers
Int_Ind =	Correlation between international and industrial collaboration
P_int_collab =	Percentage of international collaboration papers
P_short_dist_collab =	Papers collaborated within a short distance (<100 km) around the geographic location or between the address of the collaborators
P_long_dist_collab =	Papers collaborated in a greater distance (>5000 km) around the geographic location or between the addresses of the collaborators
Impact_P =	Percentile of papers being highly impactful

³<https://www.leidenranking.com/information/indicators>

V. ANALYSIS AND FINDINGS

The quality of paper is often reflected in the percentile the paper is considered to belong in. The Leiden Ranking data obtained from the website includes comprehensive data on the different fields of sciences. A simple correlation calculation, including all fields of sciences along with individual fields, shows that the impact factor of papers is highly correlated (0.896 to 0.992) with the top percentiles the papers belong to (Table 1). The correlation between industrial collaboration and number of impactful publications (0.860) is high. This might be an indication for the fact that industrial collaboration is related with impactful publications, but the causal direction cannot be established. Industrial collaboration may lead to more impactful publications, or publications having high impact potential are conducted through industrial collaborations. Similar results can be seen from the correlation between international publications and impactful ones (0.858). At the same time, the correlation between international and industrial collaborations (0.911) is high which means many of the collaborations belong to industrial level collaboration and they are also conducted over the borders.

**TABLE 1
CORRELATION ANALYSIS BETWEEN PAPER QUALITY AND
COLLABORATION WITH INDUSTRY**

	<i>P_int_collab</i>	<i>P_industry_collab</i>	<i>P_top1</i>	<i>P_top5</i>	<i>P_top10</i>	<i>P_top50</i>	<i>impact_P</i>
<i>P_int_collab</i>	1						
<i>P_industry_collab</i>	0.911795279	1					
<i>P_top1</i>	0.786722859	0.801889867	1				
<i>P_top5</i>	0.823208607	0.837764649	0.99188	1			
<i>P_top10</i>	0.838488412	0.85138606	0.98296	0.9978	1		
<i>P_top50</i>	0.861894786	0.867498119	0.9374	0.96871	0.98194	1	
<i>impact_P</i>	0.857689916	0.860293321	0.89617	0.93471	0.95344	0.992361523	1

It can be also seen that the correlation between the top percentile publications and industrial or international collaborations is significantly high as almost all correlations are above 0.70. This indicates that industrial or international collaborations result in publications that often take place in the top percentiles of specific fields.

From the correlation analysis below, it can be seen that the number of papers belonging to the top 1%, 5%, 10%, or even 50% in their respective fields are highly correlated with the distance of collaboration. Here, the correlation for short distance collaboration is always smaller than the correlation with the long-distance collaborations. This might be an indication for the fact that collaborations happening between far distant stakeholders are usually more rigorous and have higher quality outputs. Or this might reflect the fact that only high-quality research papers are worth collaborating with for the distant stakeholders.

TABLE 2
CORRELATION ANALYSIS BETWEEN PUBLICATION DISTANCE AND COLLABORATION WITH INDUSTRY

	<i>P_int_collab</i>	<i>P_industry_collab</i>	<i>P_short_dist_collab</i>	<i>P_long_dist_collab</i>	<i>P_top1</i>	<i>P_top5</i>	<i>P_top10</i>	<i>P_top50</i>	<i>impact_P</i>
<i>P_int_collab</i>	1								
<i>P_industry_collab</i>	0.91179528	1							
<i>P_short_dist_collab</i>	0.78880766	0.779175497	1						
<i>P_long_dist_collab</i>	0.96947701	0.917169986	0.777203968	1					
<i>P_top1</i>	0.78672286	0.801889867	0.627166798	0.811537664	1				
<i>P_top5</i>	0.82320861	0.837764649	0.681768027	0.84660419	0.991875986	1			
<i>P_top10</i>	0.83848841	0.85138606	0.708736293	0.859763565	0.982957649	0.99780431	1		
<i>P_top50</i>	0.86189479	0.867498119	0.775572513	0.876133251	0.937400044	0.96871478	0.98193776	1	
<i>impact_P</i>	0.85768992	0.860293321	0.804102863	0.86970348	0.896174168	0.93470844	0.95344124	0.99236152	1

Industrial collaboration as well as international collaborations are also highly correlated with the distance of collaboration. The correlation between international collaboration and short distance collaborations is 0.789 while the correlation with long distance collaboration is around 0.969 (Table 2). Both of the values indicate that the number of the international collaborations happening over longer distance is higher compared to collaborations happening within a shorter distance. Similar results can be seen in from the correlations of industrial collaboration with short and long distance. These may simply indicate that most of the international or industrial collaborations take place over long distanced parties. And the high correlation with long distance and top percentile publications show that these collaborations are often of high quality.

5.1 USA and China

The performance of collaborations differs significantly from country to country. The number of publications along with the quality often vary. A comparative situation can be seen between China and the USA (Zhou et al., 2016), in which both countries put significant emphasis on collaborations. Leiden Ranking, an annual university ranking, based on criteria such as impactful publications, number of collaborations, etc., provides a comparative scenario between China and the USA. The Chinese universities do not rank as high as their number of universities would suggest. For example, in 2014, the Leiden Ranking included 750 universities of which, only 83 were from China. Yet, around this time, China was considered to be the second highest internationally publishing country (Zhou & Leydesoff, 2008; Institute of Scientific and Technical Information of China, (2015). Even from the perspective of the density of universities, some Chinese and American states have the same number of universities present. For example, Texas and Beijing hold the same and the highest number of universities totaling up to 14. The distribution of number of universities differs among the two countries as well. Beijing has 5 more universities in the Leiden ranking compared to Nanjing whereas for the USA, the highest number of universities on the ranking is for Texas which is ahead of the second highest positioned region, California, by only 1. The overall number of publications for highest ranking Chinese universities is significantly lower than that of the US universities. The American universities have a 1.6 times higher publication productivity compared to the Chinese ones. In fact, the highest publication producer among the Chinese universities is the Zhejiang University which has an equivalent number of publications as the University of California at Davis which is ranked at 19th among the US universities.

If collaborated publications are considered in terms of publications with industries, the scenario changes for some universities and their ranking as the leading universities. Not all universities who collaborate for publications have collaborations with industries and this case is specifically more prominent for Chinese universities. Among the top 10 rated Chinese universities for collaborative research publications, 4 of them drop out of the list if the productivity for publication in collaboration with industries is considered. For the American universities, only 2 of the top 10 collaborative publications universities drop out of the list if industry collaborated publications is considered. Thus, even if universities are collaborating for research and publications, the situation differs from country to country in case of industry related collaborations.

5.2 Huawei's Collaboration with Academia⁴

Huawei is known for their information and communication (ICT) technologies that range from personal use to industrial utilization. The field of information technology is at the frontier for collaborative research as requirements for innovation is constant worldwide. Huawei embodies this necessity and has collaborated with a total of 300+ universities and 900+ research institutes and companies ranging all over the world. Huawei Innovation Research Program (HIRP) is the collaboration effort that has covered all these 300 universities from 20 countries. Huawei's Seeds for the Future Program has collaborated with 280+ universities from around 96 countries. Huawei emphasizes the need for academic research and theoretical knowledge development as this can directly yield solutions to problems faced in the industry. The HIRP Exploratory category only collaborates in an invitation-only basis as a form of quality management. William Xu, Huawei Fellow and Chair of Huawei's Scientist Advisory Committee, shared a speech in December 2023 at the World University Leadership Summit in Shenzhen that highlighted this notion of the company that they initiate collaboration with high-performing research entities. Xu mentioned in his speech that industries should take the first step and initiate open collaborations with universities in order to solve industry bottlenecks. The invitation-only collaboration upholds this sentiment as Huawei itself reaches out to universities for partnerships. However, in order to promote free and welcoming dialogue among the research community, HIRP Open conducts 2 rounds of open call for proposals and has a platform for online submissions all over the year, at any time. HIRP Flagship also functions in an invitation-only basis which conducts collaboration in fields that are important for both academia and industry and offers long-term contract-based awards.

To understand Huawei's commitment to collaboration for effective research, the timeline of their collaboration programs should be viewed. In 2004, the company started Huawei Science and Technology fund which mainly focused on China's mainland for the development in the telecoms industry. Then HIRP was introduced in 2010 which expanded outside with a focus on Europe and mainly wanted to improve the ICT industry. Later on, HIRP was divided into 2 programs namely HIRP Open and HIRP Flagship to accommodate both open proposals and specific long-term collaborations. This took place in 2014 and Huawei garnered 360+ proposals claiming greater global recognition. HIRP Exploratory was introduced last in 2016, and this program collaborated with multiple

⁴ <https://www.huawei.com/en/news/2023/12/world-class-achievements>

Noble laureates, Fields Medal winners. Currently, Huawei is funding 1,200+ projects worldwide in collaboration with all their partner universities, research institutes, etc.

5.3 Huawei Seeds for the Future Program

This is a long-term Corporate Social Responsibility (CSR) program for Huawei which focuses on the skill enhancement and learning of the college students in partnered countries. As a result, it directly works to prepare the future industry workers from their academic phase. This program has served 25,000+ students around the 96 countries covered under this initiative. It focuses on increasing the transfer of knowledge in order to make students well-versed in the concepts and understandings of the telecommunication technologies. It helps universities develop talents in the field of ICT and build capacity for the locals of different countries and enhance their participation in this sector. This program was launched in Thailand in 2008 and even received endorsements from multiple state authorities and governments.

In order to make the programs successful, Huawei acknowledges the contribution and the role of the government which aligns with the literature review that revealed governments to be an important contributor. The 3-dimensional collaboration including government, universities, and industries can make any such efforts highly successful. Governments can focus on the development of the ICT industry and training the talents in order to make this sector grow and advance. They can promote programs offered by Huawei to universities, out of which, some selected universities can also become potential candidates for collaborations. Government officials can endorse the programs as well in order to appeal to potential universities. For universities, ensuring the program is fruitful requires making it popular among the students and driving their interests. Universities need to encourage them to partake in Huawei's programs despite of their academic schedules and support the selection of certain candidates for the purpose. On Huawei's side, the funding and facilitation of the program, including lab-based training, classroom teachings, selection of candidates, offering accommodation and transportation, etc. along with a study tour ticket to China, are important aspects that will make the entire journey exciting, knowledge and skill intensive, and worthwhile for the students.

5.4 Microsoft's Collaboration with Universities⁵

Microsoft initiated a program in the April of 2019 which aimed to reduce the skill gap persistent between the academic arena and the industries. The collaboration aims to enhance technical skills especially in the fields of computer science, artificial intelligence, data science, and cyber security that often lack skilled workforce worldwide. The courses offered by Microsoft does not only enable a substantial complementary source for classroom learning; it is also a cost-effective method for preparing the students of technology for modern workforce. The courses offer industry credentials for students and workers who have already entered the workforce and a chance for students to gain college

⁵ <https://news.microsoft.com/2019/04/11/colleges-and-universities-team-up-with-microsoft-to-address-the-technical-skills-gap-by-building-global-talent-pipelines-for-ai-data-science-computer-science-and-cybersecurity/>

credits that directly work as a testament of the level of skills for the new industry entrants. Some of the colleges and universities Microsoft has collaborated include high ranking institutes such as Purdue, London School of Economics and Political Sciences, University of London, etc.

London School of Economics and Political Sciences has integrated data science related knowledge and skill development programs in the curriculum of their freshman year students. Bellevue College hosts courses on data science, cyber security, big data, AI, and artificial intelligence courses based on the Microsoft program and adapts a blended and flex learning model. In order to promote the popularity of these Microsoft courses, Staffordshire University included these courses as a module for their “Staffordshire Award” employability program. Purdue University has taken a more academic credential-enhancing approach and provides a literal full degree upon the completion of Microsoft technical skills program. These degrees encompass the fields of cyber security, data science, AI, etc. University of London enhanced their new data science masters’ degree by incorporating Microsoft Professional Program in Data Science into the course curriculum. These collaborations highlight the academic rigor and enhancement possible if knowledge and classroom teachings are curated in accordance with industry requirements.

Recently in March 2024, The University of Sydney and Microsoft have collaborated for the development of Australia’s AI capabilities and the collaboration will be built on the understanding of each-others’ present capacities⁶. Under this collaboration, The University of Sydney will be benefitted in terms of development of academic contents and opportunities. Utilizing generative AI, it can curate learning materials that help to make the short courses more effective and rigorous along with bridging the skill gap prevalent in Australia in relevant fields. Students will have the opportunity to work with Microsoft closely as a part of their internship, scholarship, or PhD project. Another support this collaboration provides is through accelerating research and technological solutions by leveraging AI to support the innovation across fields. This synergistic effort includes publishing of research papers that discuss the challenges imposed by AI along with taking initiatives for entrepreneurs that work with the specified technology. The collaboration also holds networking events among researchers, thought leaders, and scholars for the sharing of ideas, insights, and the future of artificial intelligence. The utilization of AI will span from academic arena to operational efficiencies for the university to streamline information service processes for the students along with all levels of staff members.

Over the years, the two entities have showed significant success in innovations that benefit the people in general. Dr. Omid Kavehei has been working under this collaboration to develop technology that can predict seizures before the symptoms start appearing for epilepsy patients. He is from the faculty of engineering and this innovation received the support of AI for Accessibility grant under Microsoft.

⁶ <https://www.sydney.edu.au/news-opinion/news/2024/03/18/microsoft-and-the-university-of-sydney-agree-to-collaborate-on-ai-capability.html>

VI. BARRIERS TO INDUSTRY ACADEMIA COLLABORATIONS

Industry and the academia have a relationship that can be considered to be that between a producer and a consumer. The academic arena produces graduates and the industry receives the output. The problem occurs as the feedback that the industries provide regarding the quality of the graduates are often ignored by the academic arena. This happens due to the distance maintained between the two sides. Universities do not pay attention to the requirements of particular organizations from a perspective of self-serving bias. One of the core reasons why the feedback loop does not work is that there is no platform for discussion that allows constructive criticisms on both sides. As a result, one of the core barriers is the lack of platform availability and the tolerance for discussion in the path of effective industry academia collaboration. The educational system focusing on theoretical rigor over industry requirement results in a gap between the necessary skill levels of the students at work and their expertise that grow from years of academic pressure. If the curriculum does not include industry related knowledge, practical work experience, etc., then majority of the students will fall behind in the prospect of availing industry relevant skills.

Government definitely has to play an important role in order to promote collaborations and incentivize both industries and universities. For industries, incentives can come in the form of tax breaks, tariff benefits, protection from competitions, etc. For the universities, the incentivization may come in the form of donations, funding, governance guidance, etc. In order to support innovation system in the local context, regional policy makers put emphasize on the spread of knowledge between the two possible collaborating parties namely academia and industry (Morisson & Pattinson, 2020). Another issue can be the incentivization and motivation of the industry leaders to collaborate with academic arena. The output of conducting teaching sessions for students at universities often do not seem attractive for industry leaders who are already highly productive and lack the leisure or time to contribute to academic arena. As a result, industry academia collaboration that focuses on in-person or online teachings may face a scarcity. In such cases, government mandated incentivization of industry personnel should be created and collaborations should maintain a structured approach where all parties can easily find what is in it for them for the effort they put.

IX. CONCLUSIONS

The literature depicted the productivity and benefits of industry-academia collaboration and the correlation analysis tests this relation in context of research effectiveness, measured through publication quality and proximity to industry. The correlation between publication quality and collaboration reflect that both industrial and institutional collaborations result in high quality publications. Also, if an industry collaborates with an academic institution that is geographically far away, there is a higher chance that the research is more effective and relevant. From the correlation analysis, it can be understood that if utilized properly, industry-academic collaboration can greatly improve the research effectiveness, leading to a better access to knowledge for the mass population.

To relate it with the real world, the comparative discussions on USA and China were done and they revealed that research effectiveness explains how ranking does not represent real scenario of publications and considering collaborative publications can often change the scenario. The case studies on certain industrial collaborations show how industrial efforts yield great results for both the academic and the industrial parties, and create better avenues of knowledge creation. Government regulations provide an important contextual third-party support which often shapes the structure and purpose of such collaborations. The paper, in overall, does not establish any causation, rather discusses relations. There are not enough examples from developing countries as well as from outside STEM fields, which need further explorations.

VII. LIMITATIONS

The main limitation of the study is that no causation can be established from the simple technique of relation determination through correlation analysis. In order to establish causation, other analyses need to be conducted as there can be factors that affect all the variables that correlate. The scope of benefits for both parties cannot be quantitatively assessed from the discussion as correlation does not provide actual causation values. At the same time, the examples provided do not capture the contextual complexities of different collaborations that affect the successful outcomes.

There are not enough local examples to learn from for the developing countries. In fact, most of the correlations and examples that can be found are from somewhat developed countries. The incentive, governance, etc. for developing countries may yield unexpected results. The examples do not cover all possible fields of collaboration. Most of the available studies focus on STEM fields on which this paper draws examples on and other fields are not considered sufficiently. In order to focus on other fields, relevant real-life case studies need to be conducted.

VIII. SCOPE FOR FUTURE RESEARCH

The study has made use of simple data analysis techniques like correlation analysis that only indicate whether an association exists between the industry-academia collaboration, research effectiveness, and access to knowledge. But whether collaboration impacts the effectiveness of research or the vice versa is the case cannot be determined from this study. Future researchers can use regression analysis or confirmatory factor analysis to better understand the impact of industry-academia collaboration on research effectiveness and access to knowledge. In the future, researchers can examine the extent of government support in facilitating the relation between industry-academic collaboration, effectiveness of research, and access to knowledge. The findings from this study can help prepare use cases for developing countries to see how well the theoretical findings match with the real-world applications there. Researchers can also try to explore the importance of industry-academia correlation for business fields involving management, finance, human resource, marketing, and other similar functions.

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Selection of Fast-Food Items by the Young Consumers in Bangladesh

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ABSTRACT

Fast food is a high growing industry of Bangladesh. Due to the changes of tastes and preferences of the young people of Bangladesh, they often prefer fast food at their meals. This tendency of taking fast food is higher in the big cities of Bangladesh. People who prefer these foods are primarily young and college or university students. A good number of small entrepreneurs have already been developed in the urban areas of Bangladesh to meet the needs of these customers. Hence, this paper aims at identifying the factors concerning the selection of fast-food items by the young consumers of Bangladesh. This study was conducted among the young people of Bangladesh who usually eat fast food from the nearby the places where they study or work in urban areas. To conduct the study, 318 young people were interviewed with a structured questionnaire. Both descriptive and inferential statistics were used to analyze the data. Multivariate Analysis techniques such as, Factor Analysis was conducted to identify the selection factors concerning the preferred fast-food items by the young consumers of Bangladesh. Multiple Regression analysis was run to identify the relationships between the selection factors and the overall selection of fast food by the young people of Bangladesh. Results show that the young consumers give most importance on the modern service appliances used by the service providers, reputation of the shops, new food items and group discount, fresh ingredients and nearness, quick delivery and cholesterol free food, and efficient management and acceptable price of the items. This study suggests that the small fast-food entrepreneurs of Bangladesh should focus on the nearness, cost and discount of the items, and quality of the food served, service quality and reputation of the shops to improve the attraction of the young people towards the fast food sold in their shops in Bangladesh.

Keywords: Fast Food Consumers, Small Fast-Food Entrepreneurs, Easy Access, Cost and Quality, Service Quality.

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I. BACKGROUND

Fast food has become popular in recent days in Bangladesh with the effect of the tastes and preferences of the developed countries of the world. Many people, specifically the young people are now consuming various types of fast foods every day, as these are convenient, time saving tasty and relatively less expensive. The global expansion of fast-food consumption has changed the competitive environment of Bangladesh. The growth of the market and the increase in the number of fast-food shops has also encouraged young consumers to pay more attention to the fast-food products in urban areas of Bangladesh.

The fast-food culture began its journey in Bangladesh at early nineties when the first fast food shop started its journey in the Baily Road of Dhaka (Islam & Ullah 2010). Although, the local fast-food entrepreneurs were the pioneer in the fast-food industry, several international brands started to operate through the medium of franchise. In 2000, Pizza Hut and KFC, the first international brands in Bangladesh, were brought by Transom Foods Limited. Both of the shops became so popular that the outlets were opened in the second major city of the country like Chittagong. Besides Pizza Hut and KFC, some leading names in this industry are; Helvetia, Swiss, A&W, Western Grill, BFC, Chicken King, FFC, Shawarma House, Pizza Inn, Pizza and Shawarma, etc. Today, it is difficult to calculate the total number of fast-food shops in Bangladesh. Besides the large branded shops, there are thousands of shops spread around not only the capital city but also in the other cities of the country. These shops are serving millions of busy city dwellers every day. It is estimated that there are 105 fast food outlets in the food court of the Dhaka's Bashundhara City Shopping Complex alone (Bhuiyan, 2010). Thus, fast food shops have become a multi-billion-taka industry in Bangladesh. The fast-food shop industry worth around Tk. 8.0 million of sales only in the capital city of Bangladesh every day, which puts the gross revenue of these fast-food retailers at Tk. 3.0 billion annually (Bhuiyan, 2010). The size of the industry has become up to Tk. 1000 crore and it is still growing (Farhana, 2011). Even increase in the consumption of chicken and potatoes also indicate the growing demand of fast food in Bangladesh (Bhuiyan, 2010; Bouis and Scott, 1996). Even, Helvetia, another leading local fast-food chain, transom also is planning to open many outlets around the country's suburbs through franchises (Bhuiyan, 2010).

Fast food industry is concerned with the tastes and preferences of the people. The food-taking habit has been changing very fast over last decade among the young people of the urban areas of Bangladesh especially in the capital city of Bangladesh (Lalnunthara, R., & Kumar, J. N., 2018). The reasons could be attributed by the increased impact of the developed countries through social media, increased awareness, development of information technology, and expansion of television channels in Bangladesh. Shop industry is one of the developing sectors of Bangladesh, which is concerned with the tastes, habits and preferences of the urban people. The dining practice especially in ready-made fast-food segment has been diversifying very rapidly in recent days among the people of Dhaka, Bangladesh.

The primary characteristics of fast food are ready made in nature and easy to eat. Fast foods are mostly readily available, use to take and easy to consume as meal. According to Bender and Bender (1993) "general term used for a limited menu of foods

that lend themselves to production-line techniques; suppliers tend to specialize in products such as, hamburgers, pizzas, chicken, or sandwiches". The fast-food products are distinguished from others in function of the following characteristics - being low priced, served quickly, usually eaten with the hands, easily packaged, and having a short shelf life. The major reasons of the differences between the fast food and other foods are (i) the standardized menu and consistent quality minimizes time need to be spent obtaining product information (Jekanowski, Binkley & Eales 2001) and (ii) consumers can combine mealtime with time engaged in other activities such as, shopping, work, or traveling (Jekanowski, Binkley & Eales, 1997). Consuming fast foods has become a recent trend among upper society, teenagers and young people have increased and the fast food has won the taste of these groups. These are served as helpful purpose in official and private meeting, working people at lunch time and tiffin of students (Ahmed, Hossain, Malek & Begum, 2008). Thus, eating at fast food shops not only gives consumers to satisfy their hunger, but need for convenience, pleasure, entertainment, time saving, social interaction and the mood transformation but also consumers experience excitement, pleasure and a sense of personal well-being (Park, 2004). Examples of the most prominent fast-food items include burger, pizza, fried chicken, hamburger and sandwich (Islam & Ullah 2010). Most of the local fast-food shops serve several local, semi-local cuisines, i.e., singara, somucha, chicken/vegetable roll, meat bun, meat/vegetable patties, noodles, etc. along with tea, coffee, juices, and different beverages. Different other food items also can be included according to Akku Choudhury, Executive Director of transom Foods Limited. According to Akku, "fast food as the term for fastest life style of modern society, we have general idea that fast food means MacDonald or Italian Dishes, but it can be local dishes and menus even Biryani/Chicken Curry, if it is served quickly and saved time for taking" (Farhana 2011). Thus, it can be concluded that the fast-food shops should be quick service provider with readymade food items. That's why fast-food shops are also known as Quick Service Shops (QSRs) and fast foods are often regarded as Food Away from Home (FAFH) (Islam & Ullah 2010).

Fast food is an important item of the young people of Bangladesh as it is readymade in nature and easy to eat. The official characterization of young in Bangladesh refers to persons between ages 18-35¹³. The term "Fast food" was recognized in a dictionary by Merriam-Webster in 1951. According to Merriam-Webster, fast food is the term given to food that can be prepared and served very quickly. Generally, any meal with low preparation time can be considered as fast food. However, typically the term refers to the foods sold in a shop with low preparation time and served to the customer in a packaged form for take-away. Fast foods are mostly designed for ready availability, use and consumption. Fast foods are different from convenient ready-to-eat-on-the-go confectionary items i.e. cakes, biscuits, breads etc. snack items such as, potato chips, candies, peas etc. and the fruit items. Examples of most prominent fast-food items include burger, pizza, fried chicken, hamburger and sandwich. Fast food shops are also known as Quick Service Shops (QSR's) and fast foods are often termed as Food Away from Home (FAFH).

The habit of taking fast food varies from society to society. In Bangladesh, the habit of taking fast food is changing very fast. People who are living in the cities have high tendency to consume fast food compared to the people living in the rural areas. The reason for the change is the time and other factors. They do not have much time to prepare food at their home. As society develops, the economic activities also expand. Therefore, people become busy and that discourages them to prepare food at their home. As such, the only alternative is to consume food that is prepared by others and preferably light in nature. However, in selecting fast food, a number of factors are considered by the urban people of Bangladesh (Appendix 1.1).

II. OBJECTIVES

The broad objective of this study is to identify the factors that influence fast food selection of the young people especially university students who are living in Dhaka City. The specific objectives are:

1. To identify the fast consumption trends in Bangladesh by the young people of Bangladesh;
2. To identify the factors that influence the selection of fast food by the university students in Bangladesh;
3. To suggest some policy measures to the growing SME entrepreneurs in the fast-food sector of Bangladesh.

III. METHODOLOGY

This section describes the respondents' selection procedures, questionnaire design, determination of sample size, data collection, analytical tools and test of reliability, etc.

This study used survey method using questionnaire as the main instrument. The questionnaire use of a five-point Likert scale consisted of strongly disagree, disagree, neutral, agree and strongly agree denoted by 1, 2, 3, 4 & 5 respectively. A well-known statistical package SPSS (Statistical Package for Social Sciences) version 16.0 was used to analyze the data. All questionnaires were distributed and collected by hand also online method. Researchers also used face-to-face conversation method for the university's students in their class timings.

3.1 Questionnaire Design

The structured questionnaire was developed through literature review. Responses to all the statements in the questionnaire were measured on a five-point scale ranging from 1 to 5 with 1 indicating strongly disagree and 5 indicating strongly agree. One of the relative advantages of using this scale is its suitability for the applications of multifarious statistical tools used in marketing and social research study (Malhotra, 1999). The collected data were statistically analyzed to get the useful information. Cronbach's Alpha of the test was found 0.976, which is higher than 0.70 acceptable limits. The reliability statistics show that the internal consistency of the questionnaire is under the acceptable limit (Nunnally, 1978) (Table 1).

TABLE 1
RELIABILITY STATISTICS

Cronbach's Alpha	N of Items
0.976	37

3.2 Sample of the study

There are 108 private universities with more than 3.50 lac students in Bangladesh. This study randomly selected seven private Universities of Bangladesh. The selected universities are Northern University Bangladesh, North South University, East West University, University of Dhaka, Jagannath University, United International University, and Uttara University.

3.3 Demographic Characteristics of the Respondents

Table 2 shows that the majority of the respondents are male. Among them, 171 respondents are male and 147 of them are female.

TABLE 2
GENDER DIFFERENCE OF THE RESPONDENTS

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	171	53.8	53.8	53.8
Female	147	46.2	46.2	100.0
Total	318	100.0	100.0	

Table 3 shows that the age of majority of the respondents are at the age between 18-22 years followed by 22-26 years, 26 - 30 years, 30-34 years and 34-and above years.

TABLE 3
AGE DISTRIBUTION OF THE RESPONDENTS

Age	Frequency	Percent	Valid Percent	Cumulative Percent
18-22 Years	122	38.4	38.4	38.4
22-26 Years	121	38.1	38.1	76.4
26-30 Years	37	11.6	11.6	88.1
30-34 Years	25	7.9	7.9	95.9
34 and Above	13	4.1	4.1	100.0
Total	318	100.0	100.0	

Among 318 respondents, most of the respondents are Unmarried which is 280 and the rest 38 respondents were married (Table 4).

TABLE 4
MARITAL STATUS OF THE RESPONDENTS

Marital Status	Frequency	Percent	Valid Percent	Cumulative Percent
Unmarried	280	88.1	88.1	88.1
Married	38	11.9	11.9	100.0
Total	318	100.0	100.0	

3.4 Selection of Respondents

Among 318 respondents, the maximum 55 responses came from East West University, 50 responses from Northern University Bangladesh, 50 responses from Jagannath University, 45 responses from United International University, 43 responses from Uttara University, 40 responses from North South University, and 35 responses from University of Dhaka.

TABLE 5
DISTRIBUTION OF RESPONDENTS

Sl. No.	Name of the University	Number of Respondents Interviewed
1.	Northern University Bangladesh	50
2.	North South University	40
3.	East West University	55
4.	University of Dhaka	35
5.	Jagannath University	50
6.	United International University	45
7.	Uttara University	43
	Total	318

The respondents of this study were selected from the private and government universities of Bangladesh. The details of the respondents 'affiliations are outlined above (Table 5).

3.5 Sample Design and Determination of Sample Size

It was found in literature that there are about 853,267 university students in Bangladesh. Among them 454,530 are in public universities and 398,737 are private universities (Dhar, et al., 2020). The sample size of this study was determined by using the following formula suggested by Yamane (1967).

$$n = \frac{N}{1 + N(e)^2}$$

Where, n is the sample size, N is the population size, and e is the level of precision. For this study, level of precision is presumed as 0.06(Six percent) and the population size is more than hundred thousand. Putting these values in the above equation, the required number of sample size becomes approximately 277. This study interviewed 318 students who are the students of public and private universities of Bangladesh. This

figure is well above the critical sample size of 200 for employing multivariate analysis (Hair et al., 1998). Convenience Sampling Method was used to draw the sampling units (Malhotra, 2007).

3.6 Data Collection & Analysis

Data were collected from both primary and secondary sources. Primary data were used for identification of the selection factors of young fast-food consumers in Bangladesh. The survey was conducted among the university students of Bangladesh. The survey was conducted in 2022. The interviewers were properly trained on the items included in the questionnaire for data collection before commencing the interview. Along with descriptive statistics⁴, inferential statistical⁵ techniques such as, Factor Analysis and Multiple Regression Analysis were used to analyze the data. A Principal Component Analysis (PCA) with an Orthogonal Rotation (Varimax)⁶ using the SPSS (Statistical Package for Social Sciences) was performed on the survey data. Multiple Regression Analysis⁷ such as, Multiple Regression was conducted by using SPSS to identify the relationships between the dependent and independent variables and the significant factors.

⁴ Descriptive statistics includes statistical procedures that we use to describe the population we are studying. The data could be collected from either a sample or a population, but the results help us organize and describe data. Descriptive statistics can only be used to describe the group that is being studying. That is, the results cannot be generalized to any larger group.

⁵ Inferential statistics is concerned with making predictions or inferences about a population from observations and analyses of a sample. That is, we can take the results of an analysis using a sample and can generalize it to the larger population that the sample represents.

⁶ Varimax rotation is an orthogonal rotation of the factor axes to maximize the variance of the squared loadings of a factor (column) on all the variables (rows) in a factor matrix, which has the effect of differentiating the original variables by extracted factor. Each factor will tend to have either large or small loadings of any particular variable. A varimax solution yields results which make it as easy as possible to identify each variable with a single factor. This is the most common rotation option.

⁷ In statistics, regression analysis is a statistical process for estimating the relationships among variables. It includes many techniques for modelling and analysing several variables, when the focus is on the relationship between a dependent variable and one or more independent variables. More specifically, regression analysis helps one understand how the typical value of the dependent variable (or 'Criterion Variable') changes when any one of the independent variables is varied, while the other independent variables are held fixed.

IV. ANALYSIS AND INTERPRETATIONS

The results of the analysis of data collected from the young fast-food consumers have been discussed under the sections of results of factor analysis and results of multiple regression analysis.

4.1 Results of Factor Analysis

The results of factor analysis show that the commonalities of the variables concerning the selection of fast food by the young in Bangladesh are very high indicating the variables are important in this area of study (Appendix 4.1 Commonalities).Table 5 shows the fast-food selection factors of the young people of Bangladesh. It shows that factors such as, modern service appliances that suits my preferences, reputation of the shops, new food items and group discount, fresh ingredients and nearby the consumers, quick service and cholesterol free food, and efficient management and acceptable price of the items are the critical influencing factors to the young people in selecting fast food items in Bangladesh. The variance of factor named modern service appliances that suits the preferences of the consumers is the highest (20.26%) followed by reputation of the shops, new food items and group discount (2.56%), fresh ingredients and nearby the consumers (2.03%), quick service and cholesterol free food (1.44%), and efficient management and acceptable price of the food items (1.06%). The total variance of the data set is 73.90% indicates that major portion of the data set is included in the analysis.

**TABLE 6
TOTAL VARIANCE EXPLAINED**

Components	Initial Eigenvalues		
	Eigenvalues	Percent of Variance	Cumulative Percentage
1. Modern Service Appliances that Suits my Preferences	20.255	54.743	54.743
2. Reputation of the Shops, New Food Items and Group Discount	2.559	6.915	61.659
3. Fresh Ingredients and Nearby the Consumers	2.028	5.481	67.140
4. Quick Service and Cholesterol Free Food	1.442	3.896	71.036
5. Efficient Management and Acceptable Price of the Items	1.061	2.866	73.902

The results of exploratory factor analysis show that all the influencing factors concerning the selection of fast food in Bangladesh have high factor loadings indicating the factors constituted by the variables are important in this study (Table 6).

TABLE 7
ROTATED COMPONENT MATRIX

Variables	Component/Factor				
	1	2	3	4	5
<i>Factor :1 Modern Service Appliances that Suits my Preferences</i>					
VAR-34 I prefer the fast-food shop that has new and modern service appliances.	.807				
VAR-26 I consider the lighting, decoration etc. of the fast-food shops before revisiting them.	.807				
VAR-25 I avoid the tasty fast-food items that do not suite my stomach.	.772				
VAR-33 I prefer the fast-food shop that offers additional services to me.	.772				
VAR-36 I prefer the fast-food shop that takes cash and I can quickly pay the bill.	.755				
VAR-28 I prefer the fast-food similarity of taste with my previous experience	.755				
VAR-23 I consider the food values of the fast-food items I regularly consume.	.704				
VAR-31 I do not like to go to a fast-food shop where the environment is not decent.	.695				
VAR-30 I prefer the fast-food shop where there are varieties of items to eat.	.538				
VAR-29 I prefer the fast-food shop-offering self-service.	.520				
VAR-37 I prefer the fast-food shop that is friendly in nature to me.	.520				

Variables	Component/Factor				
	1	2	3	4	5
Factor 2: Reputation of the Shops, New Food Items and Group Discount					
VAR-21 I go to the fast-food shops that offer group discounts.		.793			
VAR-19 I am willing to try new fast-food items only from well-reputed fast-food shops.		.769			
VAR-17 I prefer items from well-known fast-food shops to little-known fast-food shops.		.744			
VAR-18 Even though I do not like the food; I like to go to the well-reputed fast-food shops.		.738			
VAR-22 I consume the fast-food items that my friends like but I do not.		.692			
VAR-20 I will buy any fast food from well-reputed fast-food shops.		.684			
VAR-15 My favorite fast-food item purchased from any fast-food shop offers me the same tastes		.679			
VAR-16 I do not consume my favorite fast-food item if it does not taste right to me.		.646			
VAR-13 I prefer the fast-food shops that are located in the busiest areas of Dhaka city		.588			
VAR-14 My favorite fast-food item offers a unique taste to me		.515			
Factor 3: Fresh Ingredients and Nearby the Consumers					
VAR-8 I prefer the fast-food shops that use fresh ingredients every day			.748		
VAR-10 I prefer the fast-food shops that are close to my university			.642		
VAR-11 I prefer the fast-food shops that are easily accessible from anywhere in Dhaka city			.625		
VAR-6 Clean packaging of the fast food is important to me			.612		
VAR-7 The service people present in the fast-food shop is important to me			.609		
VAR-12 I prefer the fast-food shops that offer privacy			.591		

VAR-9 I avoid fast food shops that have past records of using hazardous materials in their products			.582	
VAR-5 Fast food outlets with clean hygiene records are more preferred by me			.495	
Factor 4: Quick Service and Cholesterol Free Food				
VAR-32 I prefer the fast-food shop that gives quick services to its customers			.737	
VAR-24 I avoid the fast-food items that carry the fattest and cholesterol			.737	
VAR-27 I prefer the fast-food shops with self service			.647	
VAR-35 I prefer the fast-food shop that has outdoor facility			.647	
Factor 5: Efficient Management and Acceptable Price of the Items				
VAR-2 I like the fast-food shops that manage the long queues efficiently				.848
VAR-3 Price of mine favorite fast food is acceptable to me				.839
VAR-1 Quick delivery of the item I order in a fast-food shop is important to me				.792
VAR-4 Costlier fast foods offer better quality				.768

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 8 iterations.

4.2 Results of Regression Analysis

Model summary shows that the Adjusted R-Square value of the model is 62.80% meaning that the model is acceptable (Table 8).

TABLE 8
MODEL SUMMARY

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.796 ^a	.634	.628	.39998

a. Predictors: (Constant), REGR factor score 5 for analysis 1, REGR factor score 4 for analysis 1, REGR factor score 3 for analysis 1, REGR factor score 2 for analysis 1, REGR factor score 1 for analysis 1

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b. Dependent Variable: VAR-38

This study identified five factors related to the selection of fast food by the young people of Bangladesh such as, modern service appliances that suit the preferences, reputation of the shops, new food items and group discount, fresh ingredients and nearby the consumers, quick service and cholesterol free food, and efficient management and acceptable price of the items. Individual selection factor like modern service appliances that suits my preferences, reputation of the shops, new food items and group discount, fresh ingredients and nearby the consumers, quick service and cholesterol free food, and efficient management and acceptable price of the items are found significant factors for the selection of fast food by the young people especially university students of Bangladesh (Table 9). ANOVA shows that all the five factors together significantly related to the overall selection of fast-food items by the young people of Bangladesh.

TABLE 9
ANALYSIS OF VARIANCE (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	86.194	5	17.239	107.753	.000 ^a
	Residual	49.755	311	.160		
	Total	135.950	316			

a. Predictors: (Constant), REGR factor score 5 for analysis 1, REGR factor score 4 for analysis 1, REGR factor score 3 for analysis 1, REGR factor score 2 for analysis 1, REGR factor score 1 for analysis 1

b. Dependent Variable: VAR-38

In statistical models, a residual is the difference between the observed value and the mean value that the model predicts for that observation. Residual values are especially useful in regression and ANOVA procedures because they indicate the extent to which a model accounts for the variation in the observed data. In this study, the difference between an observed value of the response variable and the value of the response variable predicted from the regression line is appropriate (Table 10).

TABLE 10
COEFFICIENTS

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	4.013	.022		178.615	.000
1. Modern Service Appliances that Suits my Preferences	.353	.023	.538	15.671	.000*
2. Reputation of the Shops, New Food Items and Group Discount	.224	.023	.342	9.958	.000*
3. Fresh Ingredients and Nearby the Consumers	.240	.023	.365	10.647	.000*
4. Quick Service and Cholesterol Free Food	.173	.023	.264	7.687	.000*
5. Efficient Management and Acceptable Price of the Items	.105	.023	.159	4.645	.000*

Dependent Variable: VAR-38

** Significant*

V. CONCLUSIONS AND RECOMMENDATIONS

This study was initiated to identify the significant selection factors of fast-food items by the young people especially university students of Dhaka city. Results show that the communalities of the variables concerning the selection of fast food by the young in Bangladesh are very high indicating the variables are important in this area of study. This study identified that there are five factors that influence the selection of fast food items by the young people of Bangladesh such as, (i) modern service appliances that suits my preferences, (ii) reputation of the shops, new food items and group discount, (iii) fresh ingredients and nearby the consumers, (iv) quick service and cholesterol free food, and (v) efficient management and acceptable price of the items are the critical influencing factors to the young people in selecting fast food items in Bangladesh. ANOVA shows that all the five factors together are significantly related to the overall selection of fast-food items by the young people of Bangladesh. Individual selection factors like modern service appliances that suits my preferences, reputation of the shops, new food items and group discount, fresh ingredients and nearby the consumers, quick service and cholesterol free food, and efficient management and acceptable price of the items have also been found significant factors for the selection of fast food by the young people especially university students of Bangladesh. However, there is an ample scope to conduct further study on the university students in this regard by including the socioeconomic factors of the respondents like income and the family background and that may conclude with different results in future.

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APPENDICES
APPENDIX 1.1 LITERATURE REVIEW

Author Name	Research Particulars	Fast Food Selection Factors
Nipun <i>et al.</i> , (2017).	The aim of the present study was to examine the preference, prevalence and pattern of fast-food consumption among the students. The prevalence of fast-food consumption among those students was 98.5%, and 43.3% of their pocket money was spent on its purchase. The important factors for the preference of fast food include good taste, easy accessibility, increased convenience, and pocket friendly in nature.	Good taste, easily accessible, Increased convenience, Pocket friendly in nature.
(Islam, N. (2010).	This paper aimed at identifying the preference factors of fast-food consumers living in Dhaka city. This study was conducted among the university students who usually eat fast food at their leisure time. Results show that the consumers give most importance on brand reputation of the food item followed by nearness to receive and accessibility, similarity of taste with previous experience, cost and quality of the food, discount and taste, cleanliness and hygiene, salesmanship and decoration, fat and cholesterol level, and self-service factors.	Brand reputation, Nearness to receive, Accessibility, Similarity of taste with previous experience, Cost and quality of the food, Discount and taste, Cleanliness and hygiene, Salesmanship and decoration fat and cholesterol level Self-service.
Tabassum and Rahman,	The study was an attempt to find out the differences in consumers’ attitude towards selective fast-food shops in Bangladesh. To	Quality, Variation location, Price, Environment,

(2012).	fulfill this objective, the study explores the most frequent salient beliefs of consumers regarding the fast-food shops in Bangladesh, which are quality, price, quick service, and environment of the shops. Based on the salient beliefs, multi attribute attitude model has been developed and tested in four shops; these are Pizza Hut, KFC, Helvetia, and Western Grill, which are found as most visited fast-food shops according to the consumers. The result explores that consumers have the most favorable attitude towards Pizza Hut and the least favorable attitude towards Helvetia. Significant differences are found among these four shops in terms of belief evaluations about quality, price, quick service, and environment.	Quick service
Blešić <i>et al.</i> , (2018).	This study investigated factors influencing students' choice of fast-food shops. The study was conducted at University of Novi Sad. The results show that the most important influences on this choice are Food Quality, Nearness and Accessibility and Hygienic factors, primarily cleanliness of the shop, kitchen, and service personnel. Differences in fast food choice factors were found regarding the gender of respondents.	Food Quality, Nearness and Accessibility, Hygienic factors, Primarily cleanliness of the shop Kitchen and service personnel.
Goon, (2014).	The objective of this study was to evaluate fast food consumption and prevalence of obesity among university students. This study provides evidence of increasing trend in obesity among university students consuming fast foods regularly. A combined initiative from family, universities, public health experts and government is much needed to tackle this public health problem.	Trend in obesity among university students
Mustafa and Al-Rifat, (2019).	The objective of the study is to identify the determinants that influence customers' selection of Dhaka city shops. Eating at a shop has an impact on the outdoor dining industry in Dhaka, which varies in tastes and preferences of the city dwellers. Hence, this study has been sketched to identify the factors influencing the selection of shops by the Dhaka city dwellers. Here, some independent variables were picked after reviewing relevant and related literatures of previous studies; and some have been nominated after interviewing the customers.	Quality, Core services, Additional service, Kid's facilities.

	Result shows that the factors such as quality customer perception about the shop; core services; additional service and kid's facilities in shops are noteworthy for selecting shops by Dhaka dwellers for dining at the shops	
Rahman and Sultana(2008).	The purpose of this paper was to identify the key factors that young consumers use to select fast-food shops in Dhaka city. Factor analysis (Principal Component Analysis) has been used as the analytical tool in order to determine these key factors. The result of the factor analysis indicates that four factors determine the selection of fast-food shops in Dhaka city. These are service appliance factor, service expression factor, outdoor facility factor and indoor facility factor. The service appliance factor explains more than 21 percent variance and these four factors collectively explain near about 74 percent variance.	Service appliances factor, Service expression factor, Outdoor facility, Indoor facility
Akhter, (2019).	This paper aimed to analyze the attitude of the university students regarding fast food consumption in Dhaka city. The study reveals that the most obvious reason for taking fast food is for the sake of convenience. They also give importance to taste, price, food quality, atmosphere, payment method, service quality, location, and atmosphere of the shops that help the students to get pleasure and socialize with their classmates.	Taste, Price, Food quality atmosphere, Payment method, Service quality, Location
Islam, N. et.al, (2018).	This paper aimed at identifying the preference factors of fast-food consumers living in Dhaka city. This study was conducted among the university students who are used to take fast food at their leisure time. Results show that the consumers give most importance on brand reputation of the fast food followed by closeness and accessibility, similar taste of fast food, cost and quality relationship, discount & taste, clean and hygiene, salesmanship and decoration, fat & cholesterol, and self-service.	Closeness and accessibility, Similar taste of fast food, Cost and quality relationship, Discount & taste, Clean and hygiene, Salesmanship and decoration, Fat & cholesterol, Self-service.

Bipasha and Goon, (2014).	The research was to examine the preference, prevalence and pattern of fast-food consumption among the students. The important factors for the preference of fast food include good taste, easy accessibility, increased convenience, and pocket friendly in nature. Fifty four percent of the respondents skipped their breakfast due to a variety of reasons including class pressure and had fast food after finishing their classes, either from varsity canteens or other fast-food outlets.	Good taste, Easy accessibility, Increased convenience, Pocket friendly in nature.
Ashraf, M. A., Akhter, S., & Noor, S. I. (2014).	The main objective of the study is to identify the determinants that influence consumer satisfaction in fast food marketing in Bangladesh.	Food quality, service quality, food variety, outlet environment and convenient location.

APPENDIX 7.1
COMMUNALITIES OF THE VARIABLES

Var	Extraction	Commonalities
1.	Quick delivery of the item I order in a fast-food shop is important to me.	.707
2.	I like the fast-food shops that manage the long queues efficiently.	.758
3.	Price of mine favorite fast food is acceptable to me.	.743
4.	Costlier fast foods offer better quality.	.631
5.	Fast food outlets with clean hygiene records are more preferred by me.	.564
6.	Clean packaging of the fast food is important to me.	.703
7.	The service people present in the fast food shop is important to me.	.682
8.	I prefer the fast-food shops that use fresh ingredients every day.	.733
9.	I avoid fast food shops that have past records of using hazardous materials in their products.	.666
10.	I prefer the fast-food shops that are close to my university.	.711
11.	I prefer the fast-food shops that are easily accessible from anywhere in Dhaka city.	.675
12.	I prefer the fast-food shops that offer privacy.	.649
13.	I prefer the fast-food shops that are located in the busiest areas of Dhaka city.	.624
14.	My favorite fast-food item offers a unique taste to me.	.631
15.	My favorite fast-food item purchased from any fast-food shop offers me the same tastes.	.735

16.	I do not consume my favorite fast-food item if it does not taste right to me.	.654
17.	I prefer items from well-known fast-food shops to little-known fast-food shops.	.748
18.	Even though I do not like the food, I like to go to the well-reputed fast-food shops.	.803
19.	I am willing to try new fast-food items only from well-reputed fast-food shops.	.788
20.	I will buy any fast food from well-reputed fast-food shops.	.699
21.	I go to the fast-food shops that offer group discounts.	.775
22.	I consume the fast-food items that my friends like but I do not.	.737
23.	I consider the food values of the fast-food items I regularly consume.	.723
24.	I avoid the fast-food items that carry the fattest and cholesterol.	.838
25.	I avoid the tasty fast food items that do not suite my stomach.	.843
26.	I consider the lighting, decoration etc. of the fast-food shops before revisiting them.	.847
27.	I prefer the fast-food shops with self service	.830
28.	I prefer the fast-food similarity of taste with my previous experience	.824
29.	I prefer the fast-food shop-offering self-service.	.731
30.	I prefer the fast-food shop where there are varieties of items to eat.	.634
31.	I do not like to go to a fast-food shop where the environment is not decent.	.741
32.	I prefer the fast-food shop that gives quick services to its customers.	.838
33.	I prefer the fast-food shop that offers additional services to me.	.843
34.	I prefer the fast-food shop that has new and modern service appliances.	.847
35.	I prefer the fast-food shop that has outdoor facility.	.830
36.	I prefer the fast-food shop that takes cash and I can quickly pay the bill.	.824
37.	I prefer the fast-food shop that is friendly in nature to me.	.731

Extraction Method: Principal Component Analysis.

Advertising, Features, Celebrity, and Memorialization

DR. BHARTI¹

ABSTRACT

Public awareness of a company's offerings is the primary goal of advertising. It raises awareness among consumers about the product, as well as its applications and the benefits it offers to them. The ideal product for consumers is one that satisfies their need for both low cost and high quality. Consumers are better informed about the variety of options available to them in terms of product quality, cost, benefits, and applications thanks to advertising. Consumers are better able to evaluate competing brands of identical products because to increased awareness brought on by advertising. The purpose of this study is to gain an understanding of the numerous aspects of advertising that are effective in persuading members of the population to make purchases. In addition to this, it concentrates on identifying the celebrity with the most influential presence in the advertisement who also has the most appealing profession in the case of advertising. Basic statistic tools have been used to analyses the data collected through random sampling techniques with the help of structured questionnaire. 500 respondents were taken into consideration for the conduction of present primary study. During the study, the population is giving strong and encouraging indications that TV advertising has a high and favorable influence on their purchasing preferences about FMCG.

Keywords: Advertisement, FMCG, TV Advertising, Celebrity, Remembrance.

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I. INTRODUCTION

Public awareness of a company's offerings is the primary goal of advertising. It raises awareness among consumers about the product, as well as its applications and the benefits it offers to them. The ideal product for consumers is one that satisfies their need for both low cost and high quality. Consumers are better informed about the variety of options available to them in terms of product quality, cost, benefits, and applications thanks to advertising. Consumers are better able to evaluate competing brands of identical products because to increased awareness brought on by advertising.

Advertising promotes goods. It raises consumer awareness of product usage and benefits. Consumers always demand high-quality, low-cost products. Advertisements inform consumers about a company's product's quality, price, benefits, and uses. Advertising lets consumers compare products from different companies. Advertisements are the primary message carrying vehicles and exert a great deal of influence in purchase decision making of the buyers in general and the influence is supposed to be still greater in the remote and low literacy rate areas.

II. LITERATURE REVIEW

Durante, K.M. et al (2016), the study further discussed about the persuasion appeal in advertisement in two different stages: Self Protection and Mate Acquisition. The three motives which were taken to perform are: control, follow the crowd and be unique. In first stage of self-protection, following the crowd is most preferable action and being unique is very rare. On the contrary, in the second stage of mate acquisition, being unique is the most preferable motive by the consumers and following the crowd is less followed by the consumers.

Patil, P.H. (2016), study explained the importance of FMCG as FMCG is the essential part of human beings' life as well as economy of any country. FMCG has strong access to the lifestyle and status of the country people. FMCG items can be divided into the categories of personal care, household care, food & beverages, spirits and tobacco and lighting.

Praveen K. Kopalle, et al., (2015) Study was conducted on two different brands with the help of factors like competition, advertising, pricing and new product launch. Study developed a model considering two competitors A and B duopoly launching new products. The said developed model was incorporated in the different three aspects;(i) the quality level produced by the producer, (ii) the quality level advertised by the firm through various methods of advertisement, (iii) quality expected by customers (may be perceived quality or experienced quality). The major findings out of this study are: First is that both the firms in competition had overstated their quality of the product through advertisement when the legal cost was low or absent which ultimately led to the customer's dissatisfaction. Even it was calculated from the collected data that overstatement of quality through advertisement appears high when the competition among the rivals is high. Another major finding of the study was regulations of advertising claims also impact the overstating of the advertisement. If regulations are exhausting the overstated advertisement,

then, it at least fulfills its basic objective of the advertisements which is truthfulness of the advertisement and can shift back the focus of competition to the price and quality rather than the overstated advertisements.

Burak Dindaroglu's (2018) study proposed an extension to the Model given by Anderson & Coate (2005) and explained that different types of advertisement carry different kinds of value for the consumers as well as for the producers. Study focuses over specialization of broadcasting market and found that customers enjoy the effects of advertisement when it pays additional compensation, as information as well as entertainment to the consumers.

J. Varaprasad Reddy (2006) in his study explained 'Role of Advertising in Creating Brand Personality' says that brand personality being important tool needs to be leveraged to achieve key objectives for existing & new brands. Consistency in any kind of idea presentation is also important, failing which intensity of brand traits or absence of it may happen. Other mix elements like distribution, pricing, promotion, and packaging (apart from advertising) should support and strengthen brand personality.

Different scholars have worked to check the influence of advertising over the audiences into the different aspects. Above few selected studies have been included. The purpose of this study is to gain an understanding of the numerous aspects of advertising that are effective in luring members of the population to make purchases. In addition to this, it concentrates on identifying the celebrity with the most influential presence in the advertisement who also has the most appealing career. The population as a whole is giving strong and encouraging indications that TV advertising has a high and favorable influence on their purchasing preferences with regard to FMCG.

III. OBJECTIVE AND METHODOLOGY

- i. **Objectives of the Study:** To know the influence of advertising, its appealing features and remembrance level.
- ii. **Data Collection:** Data for the present research was collected through a structured questionnaire. Data was collected from 500 respondents while using random sampling technique.
- iii. **Population:** Population for the study belongs to the low hill urban areas of Himachal Pradesh that includes districts; Una, Hamirpur, Bilaspur, Kangra & Solan.
- iv. **Research Instruments** – Tool used here is basic statistics along with percentage methods.

IV. DATA ANALYSIS AND FINDINGS

The reliability check is done for whole of the data items together. As to analyze the results for first objective, the Cronbach's Alpha is applied on 05 data items.

TABLE 1
RELIABILITY STATISTICS

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Items 'N'
0.879	0.877	05

Cronbach's Alpha value is 0.879 and Cronbach's Alpha based on Standardized items value is .877. The value 0.879 indicates the high level of internal consistency of the scale with this specific sample.

TABLE 2
DESCRIPTIVE ANALYSIS

Variable	Mean	Std. Error of Mean	Std. Deviation	Skewness	Kurtosis	Outlier
Like the most in TV Advertisement	3.52	0.05853	1.30886	-.338	-1.187	No
Celebrity belonging to the field most attractive in TV advertisement	2.81	0.06975	1.55957	.652	-0.530	Yes, 2
Celebrity Presence makes the advertisement	2.59	0.05315	1.18843	.284	-0.211	No
Remember the advertisement	2.52	0.06533	1.46072	.766	-0.406	No
Remembering advertisement during purchase	2.23	0.0422	0.9444	.210	-0.925	No

In Table 2, the basic descriptive analysis is given for the seven data items. For most liked in the T.V. advertisement, Mean is 3.5180, Std. Error of Mean is 0.05853, Standard Deviation is 1.30886, Skewness is -.338, Kurtosis is -1.187 and no outliers have been found in the data. For Celebrity belonging to the field most attractive in TV Advertisement Mean is 2.8140, Std. Error of Mean is 0.06975, Standard Deviation is 1.55957, Skewness is .652, Kurtosis is -0.530 and outlier is found in the two data entries out of 500 entries. For celebrity presence makes the advertisement, Mean is 2.5920, Std. Error of Mean is 0.05315, Standard Deviation is 1.18843, Skewness is .284, Kurtosis is -0.211 and no outliers have been found in the data set. For remember the advertisement, Mean is 2.5240, Std. Error of Mean is 0.06533, Standard Deviation is 1.46072, Skewness is .766, Kurtosis is -0.406 and no outliers have been found in the data. For remembering advertisement during purchase, Mean is 2.2320, Std. Error of Mean is 0.0422, Standard

Deviation is 0.9444, Skewness is .210, Kurtosis is -0.925 and no outliers have been found in the data set.

The respondents were further asked about their liking in the T.V. advertisement that is which feature influences their behavior the most. Table 3 indicates that maximum respondents favored Overall entertainment in the T.V. advertisement that is supported by 31.8% of the respondents. 23% of respondents liked the Concept/storyline of the T.V. advertisement most and it is followed by the liking of the respondents towards the Music in the T.V. advertisements with the support of 22% respondents. 16.8% of the respondents like the celebrities most that worked in the T.V. commercial and only 6.4% of the respondents like the graphics used in the T.V. advertisement most.

TABLE 3
DESCRIPTIVE ANALYSIS: LIKE THE MOST IN THE TV
ADVERTISEMENTS OF FMCG

	Frequency	Percent	Valid Percent	Cumulative Percent
Graphics	32	6.4	6.4	6.4
Music	110	22.0	22.0	28.4
Celebrity	84	16.8	16.8	45.2
Concept/Story line	115	23.0	23.0	68.2
Overall entertaining	159	31.8	31.8	100.0
Total	500	100.0	100.0	

Respondents were asked that celebrity belongs to which field is liked most in the advertisement of the FMCG products that the advertisement is influencing towards their buying behavior. Reference to the Table 4, there is very close competition in liking by the consumers among the T.V stars and Bollywood stars in the T.V. advertisements. 25% of the respondents found T.V. stars most attractive in the T.V. advertisements, closely followed by the liking of Bollywood stars with the support of 24% of the respondents. 22% of the respondents found sports persons most attractive in the T.V. advertisement. 13.6% of the respondents found models as most attractive in the T.V. advertisements, 5.5% of the respondents found the international celebrities as most attractive in the T.V. commercials of FMCG non-durable goods and 10% of the respondents chose the any other option as their response.

TABLE 4
TV ADVERTISEMENTS OF FMCG: CELEBRITY BELONGING TO THE
FIELD MOST ATTRACTIVE IN TV ADVERTISEMENT

	Frequency	Percent	Valid Percent	Cumulative Percent
Bollywood Stars	120	24.0	24.0	24.0
TV Stars	125	25.0	25.0	49.0
Sports Persons	110	22.0	22.0	71.0
Models	68	13.6	13.6	84.6
International celebrities	27	5.4	5.4	90.0
Any other	50	10.0	10.0	100.0
Total	500	100.0	100.0	

Respondents were also asked to respond on the presence of celebrity in the T.V. advertisements. From the Table 5 it is observed that majority of the respondents which is 41.6%, found the presence of celebrity in the advertisement as attractive. 25.2% found the presence of celebrity in the T.V. advertisement as interesting. 15.2% of the respondents found the presence of celebrity in the advertisement as convincing. 12.8% of the respondents found no effect of the presence of the celebrity in the advertisements and also there are 3.6% and 1.6% of the respondents that found the presence of the celebrity in the advertisement as pointless and dull respectively.

TABLE 5
PRESENCE OF CELEBRITY MAKES THE ADVERTISEMENT

	Frequency	Percent	Valid Percent	Cumulative Percent
Interesting	126	25.2	25.2	25.2
Convincing	76	15.2	15.2	40.4
Attractive	208	41.6	41.6	82.0
No effect	64	12.8	12.8	94.8
Pointless	18	3.6	3.6	98.4
Dull	8	1.6	1.6	100
Total	500	100.0	100.0	

Respondents were asked that how well they are able to remember the advertisements of FMCG items. Majority of the respondents responded in very positive manners towards the remembrance of advertisements. 31% of the respondents responded that they clearly remember the advertisement. 26.6% respondents said that they remember partial advertisement and they remember company and brand name but not the product or advertisement exactly. 19.4% remembered the product and company but not the advertisement. 10% respondents responded that they remember the punch line or jingle only that is used in the advertisement. 9% of the respondents remembered the advertisement but not the company or product and 4% respondents are there, that do not remember anything.

**TABLE 6
REMEMBER THE ADVERTISEMENT**

	Frequency	Percent	Valid Percent	Cumulative Percent
Remember Advertisements very clearly	155	31.0	31.0	31.0
Remember Company/brand not the product or Advertisement	133	26.6	26.6	57.6
Remember Company and product but not the Advertisement	97	19.4	19.4	77.0
Remember Advertisements but not the Company or product	45	9.0	9.0	86.0
Remember the punch line or jingle only	50	10.0	10.0	96.0
Don't remember anything.	20	4.0	4.0	100.0
Total	500	100.0	100.0	

Reference to Table 6, respondents further asked to elaborate whether they remember the advertisement or having product, brands already in their mind while going to buy FMCG non-durable items. The majority of the respondents responded positively in the case. 26% of the respondents responded that they are always clear about brand or product they are going to buy before buying it. 34.4% respondents stated that most of the times they are having product or brand in their mind before buying it. 30% of the respondents having clearer picture sometimes only and 9.6% responded that it is rarely happened. It shows clearly that the respondents are aware and decided well in time and before going to the market that what product or brand they want to purchase in case of FMCG non-durable goods.

**TABLE 7
REMEMBER ADVERTISEMENT OR HAVING PRODUCTS BRAND ALREADY IN YOUR MIND WHILE GOING TO BUY FMCG**

	Frequency	Percent	Valid Percent	Cumulative Percent
Always	130	26.0	26.0	26.0
Most of the times	172	34.4	34.4	60.4
Sometimes	150	30.0	30.0	90.4
Rarely	48	9.6	9.6	100.0
Total	500	100.0	100.0	

Respondents were asked to answer from the given options that in their family who is responsible for realize the need for FMCG non-durable items. Respondents were allowed to choose multiple options as their response. Table 7 shows that majority of the respondents that is 68% have chosen self, that they themselves realizes the need for FMCG in the family. 53% of the respondents favored that their parents realize the need for FMCG

in the family. 34% of the respondents said that their children realize the need for FMCG in the family. 28% said their spouse realizes the need for the FMCG in the family. 23% depend on the other sources for the realization of the need for the FMCG in the family and only 16% of the respondents said that their grandparents realize the need for FMCG in the family.

V. CONCLUSIONS

The study comes to the strong conclusion that the population of the region has strong influence by the advertisement when we talk about TV advertising or the traditional mode of advertising. Respondents liked the TV advertisement well. They found it entertaining along with knowledge providers. They like TV stars, Bollywood stars and sports personalities more in the TV advertisement. As the presence of the celebrity attracts them and they find advertisement very interesting and convincing.

It is observed that respondents remember the advertisement whenever they saw over TV and they are clear most of the time that which brand/product they want to purchase that too before purchasing.

VI. RECOMMENDATIONS

Marketers should focus on making TV advertisement, overall entertaining with good music and appealing storyline.

In case of selection of the celebrity in the advertisement, marketers should approach TV stars, Bollywood stars and sports personalities optionally.

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Talent Retention Strategies is New Age HR Challenge: A Perspective Study with Reference to Indian Information Technology Industry

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ABSTRACT

Employee retention is the process of keeping current employees happy and engaged so they want to stay with the company. It's not just about attracting talented employees; it's also about keeping them. There are many factors that can influence employee retention, including organizational culture, job satisfaction, and compensation. The objective of this study is to identify the organizational and individual factors that influence employee retention in the IT sector. The research type used in this study is Descriptive Research. In this study, primary data is collected from employees of Software Companies at Chennai through a structured questionnaire and secondary data was collected from magazines, journals and internet. The study used a convenience sampling method to select participants. Convenience sampling is a non-probability sampling method where the sample is drawn from a population that is convenient to the researcher. In this case, the researcher selected participants who were easily accessible, such as employees of software companies in Chennai, India. In this study various tools such as Simple Percentage Analysis and Chi square test are used with the sole aim of establishing factors related to employee retention in the software companies and interpretation will be followed. The results of the study revealed that most of the employees consider organizational culture and job satisfaction as the key factors that influence employee retention in the IT sector.

Keywords: Talent Retention, Job Satisfaction, Compensation, IT Industry.

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I. INTRODUCTION

In today's highly competitive business landscape, organizations across industries are grappling with the challenge of talent retention. In the rapidly evolving world of technology, the need to retain top-notch talent has become even more critical. This perspective study aims to explore talent retention strategies in the context of the Indian Information Technology (IT) industry, shedding light on the unique challenges faced by organizations operating in this sector.

With remarkable growth over the past few decades, the Indian IT industry has established itself as a frontrunner in software development, IT consulting, and outsourcing services on a global scale. Nonetheless, this expansion has led to intensified competition for skilled professionals, elevating talent retention to a paramount concern for organizations. This study explores the strategies implemented by companies to retain their talent pool and assesses the efficacy of these approaches in tackling the HR challenges encountered by the industry.

Renowned for its dynamic work environment, rapid technological progress, and incessant pursuit of innovation, the IT industry in India magnetizes highly skilled individuals who are motivated by the prospects of engaging in ground-breaking projects and advancing their careers. However, this industry also fosters an intensely competitive market, where professionals are persistently enticed by attractive offers from both domestic and international entities. As a result, organizations confront the dual challenge of not only attracting top-tier talent but also retaining them for the long term.

In response to this challenge, organizations have embraced diverse talent retention strategies. Among these strategies, the creation of a positive work culture and an enabling environment that nurtures employee engagement and satisfaction stand out. Companies are increasingly aware of the significance of work-life balance and, as a result, are providing flexible work arrangements, wellness programs, and initiatives that prioritize employee well-being. Furthermore, organizations are investing in continuous learning and development programs to bolster the skills and competencies of their workforce, allowing them to remain at the forefront of an ever-evolving industry.

Facilitating career growth and advancement is another crucial element in talent retention. In the IT industry, which thrives on innovation, professionals are attracted to organizations that provide them with a platform for continuous learning, meaningful contributions, and personal development. To address this, companies are establishing strong performance management systems, mentoring programs, and succession planning initiatives to identify and nurture employees with high potential. These endeavors not only empower individuals but also serve as a testament to the organization's dedication to their long-term career progression.

Acknowledging the significance of employee recognition and rewards, organizations are embracing inventive approaches to acknowledge and express appreciation for their top performers. In addition to monetary compensation, companies are implementing tailored recognition programs, hosting events to appreciate employees, and

establishing platforms for peer-to-peer acknowledgment. These initiatives not only uplift employee morale but also foster a sense of camaraderie and loyalty within the workforce. Furthermore, talent retention strategies in the Indian IT industry have experienced a transformation with a focus on fostering diversity and inclusion. Organizations are increasingly aware of the advantages of a diverse workforce and are actively promoting gender equality, implementing inclusive policies, and providing opportunities for individuals from diverse backgrounds. These efforts not only contribute to attracting a broader talent pool but also cultivate a sense of belonging and stimulate innovation through the inclusion of various perspectives.

The Indian IT industry is currently facing a major HR challenge in talent retention. To tackle this issue, organizations are adopting various strategies to create a positive work environment, provide growth opportunities, acknowledge employee achievements, and promote diversity and inclusion. Although these strategies have demonstrated potential, the industry needs to continuously adjust and refine its approaches to retain highly skilled professionals in the midst of growing competition. By nurturing and retaining talented individuals, companies can establish a sustainable workforce that fuels innovation, facilitates growth, and achieves success in the ever-changing landscape of the Indian IT industry.

II. TALENT RETENTION – THE NEED OF THE HOUR

When the economy is doing well, it has a positive impact on the job market. This leads to more employment options, which can lead to high turnover rates. As organizations face rapidly changing and complex business environments, their employees may feel uncertain about the future. The rules of the game are constantly changing, and management's goals and priorities may change frequently. This can put a lot of pressure on employees, which can lead to increased stress, demoralization, absenteeism, and decreased productivity. All of these factors can affect employee retention rates. Since people are the most valuable assets of an organization, losing them can be costly.

Remarkably, numerous companies show little commitment to reducing employee turnover or investigating the reasons behind employees' departures. They often fail to utilize any resources to understand why employees leave. Retaining talented individuals has become increasingly challenging for these companies. While attracting top talent is one aspect, retaining them presents another formidable obstacle. Employee retention may seem straightforward in theory, but achieving it can prove difficult. A crucial step in the right direction is understanding and fulfilling employees' wants and needs. Managers must recognize and embrace their responsibility for managing factors within their control to retain their most valued employees. Intelligent employees always grasp the significance of retaining exceptional talent. Therefore, talent retention holds immense importance in any organization.

However, the availability of opportunities for top performers, as well as those who are second or third best, is abundant. Retaining valuable employees and effectively addressing attrition challenges has never been more crucial for companies. In an

intensely competitive landscape where HR managers actively recruit from one another, organizations must either hold their employees tightly or risk losing them to rival companies. Gone are the days when employees would stay with an employer for years due to limited alternatives. Now, opportunities are plentiful. It is a well-established fact that retaining key employees plays a pivotal role in the long-term viability and triumph of any organization. The three essential elements of retention can be summarized as follows: Respect, which entails valuing individuals, holding them in high regard, and treating them with special consideration. Recognition, which involves giving special notice, attention, and clear acknowledgment of employees' contributions. Rewards, which encompass additional incentives beyond the basic elements of respect and recognition, making it worthwhile for individuals to work diligently, care about their work, and go above and beyond their assigned duties.

The productivity of employees is frequently tied directly to various factors, including the delivery of high-quality work, customer satisfaction, and increased product sales. It also has indirect implications for the overall image of a company, as well as the satisfaction of colleagues and reporting staff, effective succession planning, and the accumulation of valuable organizational knowledge and learning. Employee retention assumes significant importance due to the organizational implications it carries, such as the investment of time and resources in training, the expenses associated with candidate searches, and other related costs. Consequently, the failure to retain a key employee proves to be a costly endeavor for any organization.

III. BENEFITS OF TALENT RETENTION

The process of employee retention will benefit an organization in the following ways:

1. Employee turnover results in a loss of time and resources as the company goes through the process of hiring and training a new employee, often leading to unnoticed direct losses, with no guarantee of the same level of efficiency from the replacement.
2. Employee turnover comes at a significant cost to companies, with expenses including hiring costs, training expenses, and productivity loss, often estimated by industry experts to be around 25% of the average employee salary.
3. The departure of an employee results in the loss of valuable company knowledge, including insights about customers, ongoing projects, and historical information, which can sometimes be shared with competitors. This loss represents a missed opportunity as significant time and resources have been invested in the employee with the expectation of future returns that are not realized upon their departure.
4. Employee turnover disrupts customer service by severing the relationships built by employees, potentially resulting in the loss of valuable customers and clients who were drawn to the company through those connections.
5. Employee turnover sets off a chain reaction, burdening co-workers with additional responsibilities, fostering unspoken negativity among remaining staff, while lower attrition rates preserve the company's goodwill and attract potential employees.

IV. PROBLEM STATEMENT

The Indian Information Technology (IT) industry is currently facing a pressing HR challenge concerning talent retention strategies. With increasing competition and evolving workplace dynamics, organizations operating in this industry must address the issue of retaining skilled professionals effectively. This study aims to gain a comprehensive perspective on the talent retention strategies implemented by companies in the Indian IT sector. By examining the current approaches and their impact on the workforce, the study seeks to identify the key challenges and opportunities associated with talent retention. The findings will contribute to the understanding of how organizations can enhance their HR practices to retain top talent and create a sustainable workforce in the rapidly changing landscape of the Indian IT industry.

The Indian IT industry, known for its rapid growth and technological advancements, faces significant challenges in retaining skilled professionals. As the demand for IT talent continues to rise, organizations must develop effective strategies to attract and retain the best employees. This study aims to address the need for comprehensive research on talent retention strategies specifically within the Indian IT industry. By conducting a thorough examination of the current practices and their impact on talent retention, the study will shed light on the challenges and opportunities organizations face in retaining top talent. It will provide valuable insights into the factors that influence employee satisfaction, engagement, and commitment, ultimately affecting their decision to stay with an organization. Understanding the unique dynamics of the Indian IT industry is crucial for formulating effective talent retention strategies. This study will analyze the existing approaches implemented by companies and assess their effectiveness in creating a positive work culture, fostering growth and advancement opportunities, recognizing employee contributions, and promoting diversity and inclusion. The findings of this study will offer practical recommendations to organizations in the Indian IT industry, enabling them to enhance their HR practices and address the talent retention challenge effectively. By building a sustainable workforce of skilled professionals, organizations can drive innovation, promote growth, and achieve long-term success in the dynamic landscape of the Indian IT industry.

V. RESEARCH OBJECTIVES

- i. To examine the current talent retention strategies employed by organizations in the Indian IT industry.
- ii. To analyze the impact of existing talent retention strategies on employee satisfaction, engagement, and commitment within the Indian IT industry.
- iii. To identify the key challenges and opportunities associated with talent retention in the Indian IT industry.
- iv. To explore the factors that influence employee decision-making regarding staying with or leaving an organization in the Indian IT industry.

VI. REVIEW OF LITERATURE

Talent retention is crucial for organizations as it directly impacts their competitiveness, productivity, and long-term success. High turnover rates can lead to increased recruitment costs, loss of institutional knowledge, and disruption in project execution (Smith, J., & Johnson, A. 2019). Research studies have consistently emphasized the need for effective talent retention strategies to retain valuable employees in the highly competitive IT industry. Employee Retention is an ability of employee to keep employee on their payroll for over a period of time. It is an important priority for every organization to retain employee because higher cost of employee turnover, non-availability of candidates, competitive market (Charong Chow, 2019). Employee turnover is the greatest challenge around the globe. Mentoring is a technique can be incorporated along with the leadership style. The focus of mentoring can improve the personal and professional relational of employee (Keith McIlvane, 2011).

Corporate Culture is an important part of any organization. The culture is an intangible system which builds the bonding, trust and environment among employees. The work culture includes communication, challenging job, proactive approach, team-spirit, leadership, peer-relation, co-operation and coordination. The favorable work culture encourages workforce to retain themselves in organization. There are several strategies in retaining the employees like including financial incentives, career development programs, work-life balance initiatives, and supportive organizational culture. It examines the effectiveness of these strategies and discusses the importance of aligning retention efforts with the needs and expectations of employees (Meera Alagaraja, Tammy D. Allen, 2002). Organizations need to implement evidence-based strategies to retain talent successfully. These strategies should focus on creating a positive work environment, providing opportunities for development and growth, recognizing and rewarding employees, and promoting work-life balance (David G. Allen et.al, 2010). Effective human resource management practices, including those related to employee retention, have a positive impact on organizational performance. Organizations should invest in practices such as selective hiring, training and development programs, and performance-based rewards to enhance employee retention (B Becker, 1996). Organizations should prioritize building a positive and supportive work culture, fostering effective communication, and providing opportunities for employees to contribute meaningfully to the organization's goals (Wayne F. Cascio, 2013).

To effectively manage employee retention, organizations must delve into the unfolding process of turnover, comprehending its intricate dynamics. By proactively identifying and diligently addressing the underlying factors that trigger withdrawal states, organizations can strategically deploy targeted retention strategies, thus fortifying their defenses against the perils of voluntary turnover. This proactive approach enables them to create an environment that nurtures engagement, fosters loyalty, and cultivates a sense of belonging among their valued workforce. Consequently, employees are more likely to find fulfilment in their roles, leading to enhanced job satisfaction, heightened organizational commitment, and ultimately, a reduced propensity for voluntary attrition (Benjamin C, 2006). These statements highlight the importance of creating a positive work environment,

investing in employees' development, recognizing their contributions, and addressing factors that contribute to turnover in order to effectively retain talent within organizations.

Employee retention is vital for organizations as it ensures customer satisfaction, maintains organizational knowledge, promotes effective succession planning, and fosters a satisfied staff. Losing employees not only means losing valuable talent but also loyal customers and clients associated with those employees. Organizations face significant losses when trained employees choose to leave. Hence, implementing an effective employee retention strategy becomes essential to manage and preserve this valuable organizational asset. Despite the growing importance of employee retention, there is still a need to address the needs of human resource managers and provide them with appropriate strategies and solutions to effectively retain talented and valued employees, thus mitigating the challenges associated with high turnover. This study examines the impact of employee induction, training and development, job satisfaction, compensation, performance management, and management and leadership on employee retention to address this research gap.

VII. RESEARCH METHODOLOGY

This study utilized a descriptive research methodology. The data collection involved an online questionnaire administered to employees working in software companies located in Chennai. Secondary data was gathered from various sources such as magazines, journals, and the internet. A convenient sampling technique, a form of non-probability sampling, was employed to select a sample size of 120 participants. This approach involved selecting readily available respondents. To analyze the collected data and extract valuable insights, statistical techniques including the Chi-Square Test, ANOVA, and other relevant tools were utilized.

VIII. RESULTS

8.1 Marital Status and Job Satisfaction

Significant Difference between Marital Status of Respondents and Level of Job Satisfaction With Respect To Work Life Balance (Table 1, Table 2 & Table 3).

Null Hypothesis H0: There is no significant difference between Marital Status and Level of Job Satisfaction with respect to work life balance.

TABLE 1
OBSERVED DISTRIBUTION OF RESPONDENTS BASED ON MARITAL STATUS

Marital Status	VG	G	M	L	VL	Total
Married	4	10	7	2	-	23
Single	6	36	33	16	6	97
Total	10	46	40	18	6	120

VG: Very Great Extent, *G:* Great extent, *M:* Moderate extent, *L:* Less Extent, *VL:* Very less extent

TABLE 2
EXPECTED DISTRIBUTION OF RESPONDENTS BASED ON MARITAL STATUS

Marital Status	VG	G	M	L	VL	Total
Married	1.92	8.82	7.67	3.45	1.15	23
Single	8.08	37.18	32.33	14.55	4.85	97
Total	10	46	40	18	6	120

VG: Very Great Extent, G: Great extent, M, Moderate extent, L: Less Extent, VL: Very less extent

Table Value: Degree of freedom $(r-1)(c-1) = (2-1) * (5-1) = 4$ @ 95% confidence level or 5% level of significance Table value=9.49

TABLE 3
RESULT OF CHI-SQUARE TEST BASED ON MARITAL STATUS

Table value	9.49
Calculated value	5.24
Degree of freedom df	4.00

Since the calculated value is less than the table value, H_0 is accepted and H_1 is rejected.

Inference: From the Chi Square test, it is concluded that there is no significant difference between marital status and Level of Job Satisfaction with respect to work life balance.

8.2 Designation and Job Satisfaction

Significant Difference between Designation of Respondents and Satisfaction Level of Performance Management System with Respect to Reward Policy (Table 4, Table 5, & Table 6).

Null Hypothesis H_0 : There is no significant difference between designation of respondents and satisfaction level of performance management system with respect to reward policy.

TABLE 4
OBSERVED DISTRIBUTION OF RESPONDENTS BASED ON DESIGNATION

Designation	VG	G	M	L	VL	Total
Analyst	12	0	8	4	0	24
Associate	7	5	15	4	1	32
Others	9	0	19	0	12	40
Project Manager	0	1	1	0	0	2
Senior Associate	0	11	0	3	4	18
Technology Specialist	1	1	0	2	0	4
Total	29	18	43	13	17	120

VG: Very Great Extent, G: Great extent, M, Moderate extent, L: Less Extent, VL: Very less extent

TABLE 5
OBSERVED DISTRIBUTION OF RESPONDENTS BASED ON DESIGNATION

Designation	VG	G	M	L	VL	Total
Analyst	5.8	3.6	8.6	2.6	3.4	24
Associate	7.73	4.8	11.47	3.47	4.53	32
Others	9.67	6	14.33	4.33	5.67	40
Project Manager	0.48	0.3	0.72	0.22	0.28	2
Senior Associate	4.35	2.7	6.45	1.95	2.55	18
Technology Specialist	0.97	0.6	1.43	0.43	0.57	4
Total	29	18	43	13	17	120

VGA: Very Great Extent, G: Great extent, M, Moderate extent, L: Less Extent, VL: Very less extent

Table Value: Degree of freedom (r-1) (c-1) = (6-1) *(5-1)=20@ 95% confidence level or 5% level of significance Table value=31.41

TABLE 6
RESULT OF CHI-SQUARE TEST BASED ON DESIGNATION

Table value	31.41
Calculated value	85.77
df	20.00

Rejecting the null hypothesis (H0) and accepting the alternative hypothesis (H1) is supported by the comparison of the calculated value, which exceeds the table value.

Inference: From the Chi Square test, it is concluded that there is significant difference between designation of respondents and satisfaction level of performance management system with respect to reward policy.

IX. DISCUSSIONS

The majority of the respondents (72%) in this study were male, while the remaining 28% were female. Among the participants, 75% were between the age group of 21-25, and 81% were single. In terms of education, 52% of the respondents had completed their undergraduate degree, and less than 72% had less than 3 years of work experience. Around 48% of the participants earned below Rs.30,000 per month. Regarding the initial employment experience, a significant portion of the respondents agreed that they were provided with a comprehensive list of duties and responsibilities (32%) and company structure, vision, and mission (29%). They also felt that the information provided on their first day helped them settle into the job and understand the policies, practices, and procedures to follow. When it comes to safety measures and training, approximately 27.5% of the respondents agreed to a moderate extent that they were aware of safety measures and emergency contacts. Around 34.2% agreed to a moderate extent that they received training during their employment, which empowered them in their job performance.

In terms of career growth and advancement, 33.3% of the participants agreed to a moderate extent that they were reimbursed for courses, certifications, and attending seminars or conferences. However, only 28.3% agreed to a lesser extent that they were provided with career growth opportunities and domain learning exposure seemed comparatively low. Performance appraisal and recognition were also considered.

The majority (35%) agreed to a great extent that their employer reviewed their achievement of targets within the year, and 33.9% agreed to a great extent that they went through performance appraisal interviews based on targets. Furthermore, 48.4% of the respondents agreed to a very great extent or great extent that they were rewarded for their performance and satisfied with the reward policies followed. The effectiveness of performance management tools in achieving individual and organizational goals was recognized by 30.6% of the respondents who agreed to a great extent. However, only 30% agreed to a moderate extent that they were provided with allowances, bonuses, monetary rewards, and other benefits, and were aware of the details of their fixed and variable pay.

Regarding job satisfaction, 32.5% agreed to a lesser extent that they liked their job title and role provided. However, most respondents (34.2%) agreed to a moderate extent that their job had clear objectives, day-to-day responsibilities, and targets. Approximately 36.7% agreed to a moderate extent that their job made good use of their skills and abilities, but they felt a lack of encouragement in their workplace.

In terms of work-life balance, 33.3% of the respondents agreed to a moderate extent, and 33.9% agreed to a great extent that management provided freedom to plan and schedule work. However, only 27% felt that employees were involved in decision making. Building good relationships with the boss and encouragement towards teamwork were rated highly, with 31.1% agreeing to a great extent. Additionally, 23.33% of the respondents considered job satisfaction as the most influential factor for staying with their current employer.

From the study it is identified that majority of the employees agree to argenteite that they were taken through a comprehensive induction program. Most employees have been trained and developed in their job to a moderate extent. Many found the performance management too line their organization to be useful in improving their overall job performance, achieving their individual goals as well the organizational goal to a great extent. Majority of the respondents find their compensation package competitive and equitable to a moderate extent. Most of the respondents liked their job title, role and experienced job satisfaction to a moderate extent. Many respondents have worked undergo leadership and liked their supervisors to a great extent.

Overall, on an average majority of the respondents have rated job satisfaction as the factor most influencing their stay with the current employer. The next factor influencing their stay with the current organization was found to be management and leadership skills, third was considered to be compensation, some chose training and development, others considered performance management system while very few voted for employee induction which was the least influencing factor when compared to all other talent retention strategies. Therefore, the management should take necessary actions to

improve the employee induction program and also the performance management system which will be suitable for the employees. The organization can impart certain practices that boost employee to perform well and sustaining them in the organization by providing various welfare measures and implementing retention strategies.

X. CONCLUSIONS AND RECOMMENDATIONS

Employee retention significantly impacts organizational success and employee performance. This study reveals that effective retention strategies positively influence both employee retention and performance. Retaining talented individuals is crucial for sustained business operations. The study explores factors influencing employee decisions to stay or leave an organization. Key factors for employee retention include compensation, work schedule flexibility, and work-life balance, while inadequate compensation, inequality, lack of growth opportunities, and benefits contribute to employee attrition. Implementing strategies like flexible working hours, employee rewards, and career development programs can enhance satisfaction and retention. Recognizing employees as valuable assets, organizations must prioritize talent retention for positive outcomes. The study emphasizes HR factors such as selection, remuneration, recognition, training, career development, challenging opportunities, leadership behavior, company culture, and work environment, which impact organizational commitment and long-term retention. Factors like age, gender, education, and industry also influence organizational commitment and retention.

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Impact of Productivity and Profitability in the Small Holder Dairy Firms: Application of Cobb-Douglas Production Function

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ABSTRACT

The study analyzed profitability and productivity of dairy firm milk production from a survey of sixty respondents (Dairy farmers) in Pabna region. Responsible factors that affect dairy milk production were identified using the Cobb-Douglas production function. The findings unveil that significant coefficients of variables exhibit positive impact on the dairy milk production. It is possible for dairy farmers to enjoy sufficient profits from milk production since earned gross return and net return were TK. 16430.10 and TK 4654.48 respectively against the total cost of production Tk. 11775.62 per cross breed cow per month. Average production of milk per cow was 10 liters. The estimated Benefit Cost Ratio (BCR) was 1.39 that is dairy farmers earned Tk. 1.39 investing one taka in dairy farming. The prime object of the study is to examine the impact of productivity and profitability in the Small Holder Dairy Firms regarding nutrition, revenue creation, and employment selected areas of Pabna district. A pre-tested questionnaire was used to collect primary data from fifteen villages in the Pabna Sadar, Chat mohar, and Bhangura Upazilas of the Pabna District. In this research, tabular and statistical methods were also employed. Cobb-Douglas production function was used to identify eight significant components that affect milk output. Furthermore, our study demonstrates that an overwhelming proportion of the Dairy farmers has expressed satisfaction toward for uplifting their living-standard on economic indicators. Dairy farming might be a profitable business if the appropriate government and public-private program corrective measures could be implemented. This would help the nation overcome issues with low income, unemployment, malnutrition, and its unfavorable balance of payments.

Keywords: Productivity, Profitability, Dairy Firms, Benefit Cost Ratio (BCR), BBS, AI, BLRI Cobb-Douglas Production Function, DLS.

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I. INTRODUCTION

1.1 Background of the Study

The economy of Bangladesh is mainly based on agriculture, which is a predominant sector with about 60 percent of arable land (BBS, 2017a). It plays central role in accelerating the economic growth and development (Alam et al., 2009). A productive, safe and environment friendly agricultural system is a prerequisite for ensuring long-term period food security for citizens. Agriculture has been given the highest priority to ensure food security in Bangladesh (Bhuiyan and Karim, 1999). The Seventh Five Year Plan-2015 and National Agriculture Policy-2018 have been taken by the government for the overall development of agriculture sector (MoA, 2018; PC, 2015). Over the last few years, food production is on an increase (Mohajan, 2018). Food grains production stood at around 388.14 lakh metric tons (MT) (BBS, 2017a). The agricultural sector (crops, animal farming, forests and fishing) contributes 14.74 percent to the country's GDP, provides employment to about 41 percent of the labor force, according to Quarterly Labor Force Survey 2015-16 (BBS, 2017b). GDP from Agriculture in Bangladesh increased to 10117.30 BDT Million in 2017 from 9922.80 BDT Million in 2016 (BBS, 2017a). Dairy is the most important livestock sub-sector in Bangladesh's economy since it provides both nutrition and income for farm families as well as rural and urban non-farm jobs (Uddin et al., 2011). Unfortunately, about half of the country's population remains beneath the accepted poverty threshold. Consequently, they are deprived of the basic calorie intake, 2122 kcal per day per person (MoF, 2018). Dairy sector can appear as a promising horizon in this aspect. The contribution of the animal-farming sub-sector to GDP was 1.60 percent in 2017 (BBS, 2017a). Though the share of this sub-sector in GDP is not sizeable to date, it makes remarkable contribution towards meeting the requirements of daily essential animal protein for human consumption, reduction of poverty, cultivation of land, as well as production and export of leather and leather goods. A number of initiatives have been taken for sector-wise development of livestock (Uddin et al., 2011). Since dairying is a profitable enterprise (Hafeez and Rahman, 2014), it directly enhanced the household income providing high value outputs from low value inputs besides acting as wealth for future investment (Siddiky, 2017).

According to the estimate of the (DoF, 2017), the population of livestock rose to 647.45 lakh in 2017 while GDP growth rate of livestock was 3.32% with a volume Tk. 35567 crores in GDP at current price. Additionally, the share of livestock in agricultural GDP was 14.31% along with the contribution to direct and partial employment 20% and 50% respectively (DLS, 2017). Around 50% of arable land was occupied for livestock rearing. The contribution (25%) of livestock and poultry in fuel supply is not negligible at all (DoF, 2017). About 47.6% of total labor force is engaged in this sector, Livestock sector contributes 1.78% of GDP out of the 16.33% contribution of the agriculture sector in the economy. In the 2020-21 fiscal year, the production of fresh milk in the country was 11.9 million tons and the demand was 15.4 million tons, as per data provided by the Department of Livestock Services (DLS). June 14, 2022.

Dairying in Bangladesh has been practiced for a long time at small scale. Some noticeable developments have also taken place in Breed improvement. *In Bangladesh cross-breeding of local cows with Holstein Friesian, Jersey, Australian, Sahiwal, etc. are*

often seen in the rural areas. These cross breeds are found as higher in terms of milk and meat production. Milk is considered as an ideal and a complete food for the people of the whole world. There is no more complete food that milk yet known to mankind. Bangladesh there are some milk pocket areas where Dairy farming has been traditionally an important and major component of farming system. These areas are particularly located in *Pabna, Sirajgonj, Manikganj, Munsiganj, Faridpur, Madaripur, Kishorganj, Rangpur and Tangail District.* (Goni M.D., Miah A.G. et al.) The production of fresh milk in the country was 11.9 million tons and the demand was 15.4 million tons, as per data provided by DLS. Milk production in Bangladesh is very low in comparison with top ten milk producers. Although India is the 2nd largest milk producer, it's not in the list top 10 milk exporting countries. (Source: Journal of Agriculture and Food Research, Volume 4, June 2021).

1.2 Problem Statement

In Bangladesh Dairy is the most important livestock product produced by smallholder crop livestock farmers. According to FAO (2007), total production of cow milk in the country increased from 60.92 tons in 2013-14 to 94.6 tons in 2017-18. An increase of only 2.51% However, current national production is inadequate to meet consumption demand. Therefore, about 38 percent of the total consumption of milk is imported, mainly in the form of powder milk. The income elasticity of demand for milk was estimated to be 1.62 compared to 1.19 for meat and eggs in 1995-96.

Over the decades, livestock population had slower growth rate because of high mortality rate, rearing and housing difficulties, slaughtering of good quality of young animals in large numbers in different festivals and unplanned slaughtering for meat throughout the year. As a result, there exists an acute shortage of animal protein and intake of milk and meat in the daily diet. The production, demand, availability and deficits of milk, meats are shown in Table 1.

TABLE 1
TOTAL PRODUCTION, DEMAND, AVAILABILITY AND DEFICITS OF MILK, MEAT 2019-2020

Particulars	Demand	Production	Deficiency	Availability
Milk	150.29 Lake Metric Ton (250 ml/day/head)	94.06 Lake Metric Ton	56.23 Lake Metric Ton	158.19 (ml/day/head)
Meat	72.14 Lake Metric Ton (120 gm/day/head)	72.60 Lake Metric Ton	Surplus 0.46 Lake Metric Ton	122.10 (gm/day/head)

**Estimated population of the country: 16 cores 47 lakes on 1 July, 2020 (P) Source: BBS*

Therefore, development of this sub-sector may be considered as an important strategy for poverty alleviation which is a major objective of the Government of Bangladesh. But there is lack of information about the Dairy farming in Bangladesh.

So, the study tries to find out the following research questions:

1. What is the amount of income and employment creating in this Dairy sector?
2. What is the Productivity of cross breed cows and items of cost items?
3. What is the Profitability of cross breed cows rearing?
4. What are the Problems relating to raising Dairy cows and their probable solutions?
5. What are the livelihood patterns of Cross Breed Dairy Cows Farmers?
6. What are the Socio-economic characteristics of the cross-breed Dairy Cow owner?

II. OBJECTIVES OF THE STUDY

The broad objective of the study is to elucidate the Productivity and Profitability of small holder Dairy Farms. The study has the following specific objectives:

1. To measure Productivity of milk production of Dairy Farms;
2. To calculate Profitability of milk production and to assess the livelihood pattern of the Dairy farmers;
3. To measure the relevant factors affecting Milk production of Dairy Farms;
4. To identify the Problems related to rearing of Dairy cows and to make policy recommendations for better economic performance.

The analysis of data is performed by using SPSS Software & Microsoft Excel simple Tabular Analysis, descriptive statistics, graphical method, Cobb-Douglas Production Function, and different econometric tools. Some Secondary Data is also used for achieving stated objectives.

III. JUSTIFICATION OF THE STUDY

At present, remarkable numbers of Dairy farms have been established in the country. As a result, it will increase the local milk production and rural employment. It may also offer the scope of earning extra income of the farmers. At present, livestock is one of the most important sub-sectors in agriculture that the people will take the dairy cow rearing as a profession. The nutritional expert group of Bangladesh has recommended 300gm of milk for the children up to 18 years and 200gm for the adults and 315gm for the expected mothers per day for vegetarians. For non-vegetarians, the recommended rate per day is 200gm and 160gm for the children and adults, respectively. Moreover, the priority of milk in the diet is widely recognized and it has a very high elasticity of demand as compared to other food items (Jabbar and Raha. 1994).

In this regard, very few hard data are available for making any meaningful policy formulation and appropriate measures for overall development of dairy. No comprehensive economic study of this type was conducted previously. The Impact of Productivity and Profitability in the Small Holder Dairy Firms: Application of Cobb-Douglas Production Functioning Bangladesh is therefore, urgently needed to acquire the relevant information on Dairy population of Bangladesh which may help to form effective national planning for the development of this vital sub-sector.

IV. LITERATURE REVIEW

Finding from previous studies revealed the profitability of dairy cattle rearing for independent and contract farm (Begum et al., 2017). Although production of dairy milk in the country has been accelerating, the rate of increase is not sufficient to meet the striking demand (Shamsuddoha and Edwards, 2000). The production of milk per crossbreed cow was higher than that of local breeds (Alam et al., 1995). In supply chain of wholesale milk markets, the gains of sweet meat shops were comparatively higher than the other market actors (Mandal et al., 2008). There is a direct link between increasing income and reducing poverty since the increase in household income is a result of dairy support services implementation to a level above the poverty line (1.9 US\$/day equivalent to 147.96 BDT) (Uddin et al., 2017).

Very poor knowledge of farmers in cattle reproductive management was not unprecedented (Islam et al., 2016). Economic opportunities for planning interventions greatly increase farmers' compliance with an extension programmed (Shamsuddin et al., 2006). According to Das et al. (2016), farmers' unfamiliarity and scarcity of knowledge made them reluctant to adopt advanced machineries whereas modernization through partial mechanization can have a conspicuous contribution in dairy milk production in Bangladesh. Imperfect milk market was responsible for the construction of inefficient tax and tariff policies, which is good enough to halt the spontaneous growth of dairy sector (Jabbar, 2010).

To proclaim dairy farming as an attractive and profitable enterprise, rigorous research is necessary where extension services can have mentionable impacts (Shamsuddoha and Edwards, 2000). Fourteen structured industries have been operating dairy businesses in Bangladesh, including Milk vita, BRAC, and PRAN, which hold most of the market shares (Haque, 2009).

V. METHODOLOGY

Selection of the study area which is an important step largely depends on the objectives set for the study. The areas were purposively selected from three Upazila of Pabna district. The selected Upazilas were Pabna Sadar and Chatmohar and Bhangura. The study was conducted in fifteen villages namely: Malonchi, Kutipara, Sampur, Chakvobanipur Hamehitpur, Sadupara, Chorbhangura, Dilierpasa, Magura, Koira Jabarkol, Mirzapur, Katakhal, Nemaichora. It was not possible to make a farm level survey covering all the farms. Sixty sample farmers were selected randomly, based on the availability of which 20 from Pabna Sadar Upazila and were 20 Chatmohar, 20 were Bhangura. Data were collected by the researcher herself in the month January 2019. Direct interview method was followed to collect data from the respondents. Data entry was made in computer and analysis was done using the concerned software Microsoft Excel and statistical package of social science (SPSS). The following techniques were used for analyzing the data: 1) Tabular technique; and 2) Statistical technique.

5.1 Tabular Technique

Every respondent was considered as the unit for analysis. Collected data were compiled, classified, tabulated, calculated BCR and analyzed to find out the crude association of variables. In this study tabular technique was used to illustrate the whole picture of analysis.

5.2 Statistical Technique

The Cobb-Douglas production function is probably the most widely used form for fitting agricultural production data, because of its mathematical properties, ease of interpretation and computational simplicity (Heady and Dillion, 1969; Fuss and Mcfadden, 1978). Cobb Douglas production function model was used to determine the effects of key variables. To identify the most important variables in the production process of milk of Dairy farms, the following specification of the model was made:

$$Y_i = \alpha X_{1i}^{\beta_1} X_{2i}^{\beta_2} X_{3i}^{\beta_3} X_{4i}^{\beta_4} X_{5i}^{\beta_5} X_{6i}^{\beta_6} X_{7i}^{\beta_7} X_{8i}^{\beta_8} e^{U_i}$$

By taking log in both sides the Cobb-Douglas production function was transformed into the following logarithmic form because it could be solved by the Ordinary Least Square (OLS) method:

$$\ln Y_i = \ln \alpha + \beta_1 \ln X_{1i} + \beta_2 \ln X_{2i} + \beta_3 \ln X_{3i} + \beta_4 \ln X_{4i} + \beta_5 \ln X_{5i} + \beta_6 \ln X_{6i} + \beta_7 \ln X_{7i} + \beta_8 \ln X_{8i} + u_i$$

Here,

Y = Value of average milk yield per cross breed cow per month (Tk.);

X_1 = Cost of Green grass used per cow per month (Tk.);

X_2 = Cost of Paddy straw per cow per month (Tk.);

X_3 = Cost of Concentrate feed used per cow per month (Tk.);

X_4 = Veterinary cost used per cow per month (Tk.);

X_5 = Cost of labor used per cow per month (Tk.);

X_6 = Interest and Operating Cost;

X_7 = Electricity cost (Tk.);

X_8 = Housing cost (Tk.) \ln = Natural logarithm; e = Base of natural logarithm;

α = Constant/intercept $\beta_1, \beta_2, \dots, \beta_8$ = Production coefficients of the respective variables;

$i=1,2,3,\dots,n(n=60)$, U_i = Error term.

5.3 Principal Characteristics of the Model

The F-Values were used to measure the goodness of fit for different types of input. The co-efficient of multiple determinations indicated the total variations of output explained by the independent variables included in the model.

VI. SOCIO-ECONOMIC CHARACTERISTICS OF DAIRY FARMERS

Socioeconomic characteristics mainly illustrate the wide ranges of interrelated social attributes of the farmers and their family members which largely influence their economic activities, living condition and decision-making process.

6.1 Family Size and Age Composition

The farm households selected for the study were three Upazilas and were expected to possess similar attributes in respect of socioeconomic variables. The key family persons were father, mother, husband, wife, brother, sister, children etc.

6.2 Education Levels of the Respondent's Dairy Farmers

Dairy rearing is a skill-based enterprise and it requires a good education to manage the enterprise in a well-turned manner (Table 2).

TABLE 2
EDUCATION LEVEL OF CROSS BREED REARING FARMERS

Education Level	Cross Breed Rearing Farmers	
	Numbers	Percentage (%)
Illiterate	5	8.34
Primary	10	16.67
Secondary	25	41.67
Higher Secondary	14	23.34
Graduation & above	6	6.67
Total	60	100.00

Source: Filed Survey, January 2019

6.3 Land Ownership of the Dairy Farmers

Land holdings of the sample farmers may be classified into several categories such as homestead area, owned cultivable land, rented-in land, and rented-out land, area under pond and pasture land. Farm size of a farmer means the total amount land properties the farmer holds. Average land holding = Homestead area + Owned cultivable land + Rented/mortgaged/leased-in + Area under pond + Pasture land - Rented/mortgaged/leased-out land.

6.4 Livestock Population of Dairy Farmers

Table 3 shows that average livestock population of cross breed rearing per farmers were 8 milch cow where there were 6 calves. 1 number of bull and 53.34% were milch cow 40% were calf and 6.67% were Bull Per milch cow average value is 1,30,000 TK, per calf 42000 Tk, per bull 1,80000 Tk respectively in January 2019.

TABLE 3
TOTAL NUMBER OF COW AND ITS VALUE

Types of animals	Cross breed rearing farmers number of cow & it values		
	Average Number of cows	Percentage	Average Value (Tk.) Per cow
Milch cow	8	53.34%	1,30000.00
Calf	6	40.00%	42000.00
Bull	1	6.67%	1,80000.00
Total	15	100.00	3,52000.00

Source: Filed Survey, January 2019

6.5 Occupational Status of Dairy Farmers

Our agriculture is vast and the farmers have a lot of opportunity to engage themselves in various activities of farming. Main and subsidiary occupation of the sample Dairy farmers is given in table. The table also shows that about 85% and 60% and 10% of the family members of the cross breed raising farms were engaged in Dairy Farming, agriculture and others, respectively (Table 4). Most of the family members were involved in multiple occupations and assisted works of other members. Here, agriculture as an occupation meant involvement of members in crop, poultry, dairy rising.

TABLE 4
CROSS BREED REARING FARMERS OCCUPATION

Occupation	Cross breed rearing farmers occupation	
	Main out of sixty respondents	Subsidiary out of sixty respondents
Dairy farming	85%	15%
Agriculture	60%	40%
Other	10%	90%

Source: Filed Survey, January 2019

6.6 Milk Production Trend in Bangladesh

Bangladesh, feed items for dairy cattle are mainly derived from crop residues, cereal by-products, shrubs, fodder trees and grasses growing in wayside, embankment and char areas. Table 5 expressed the milk productions trend in Bangladesh which depends on the availability of green grass. Generally, farmers graze dairy cattle in fields, cultivated fallow lands, road sides, embankments, etc. where there are little vegetation and other farming.

TABLE 5
MILK PRODUCTION TREND IN BANGLADESH

Years	Milk Production in lakh Metric Ton	Growth rate %
2012	50.70	
2013	60.92	16.77
2014	69.70	12.59
2015	72.75	4.19
2016	92.83	21.63
2017	95.15	2.43
2018	98.34	3.24

Source: DLS Livestock Economy, 2018

Table 5 shows that milk production trend in 2012 was 50.7 lac metric ton, 2013 was 60.92 lac metric tons and gradually increases this trend and 2018 was 98.34 lac metric ton. The growth rate of milk production also Fluctuate in 2013 was 16.77% to 21.63 % in 2016 respectively.

6.7 Average Daily Milk Production Trend in Pabna Sadar Area

Data focused on Dairy cow were collected from three Upazila in Pabna district with a pretested survey questionnaire. Pabna Sadar is one of them. The area was preferred because of the resemblance to the objectives of the study. Milk yield period per cross breed cow show in the Table 6.

TABLE 6
MILK YIELD PERIOD IN PABNA SADAR AREAS

Milking Period	Per-cross breed cow (liters)	Average 5 cross breed cow (liters)	Average 10 cross breed cow(liters)
Before Lactation	7.50	30.00	50.00
Lactation	15.00	60.00	120.00
During Insemination	6.00	25.00	50.00
Average	9.50	38.34	73.33

Table 6 shows that average daily milk production trend in before lactation is 7.5 liters per cross breed cow. Lactation period average daily milk production trend in 15 liters per cross breed cow and also during insemination period milk yield trend in 6 liters and average milk yield trend is 9.5 liters per cross breed cow in Pabna Sadar areas.

6.8 Average Daily Milk Production Trend in Chatmohar Area

Data focused on Dairy cow were collected from three Upazila in Pabna district with a pretested survey questionnaire Chatmohar area is one of them. Milk yield period per cross breed cow show in the Table 7.

TABLE 7
MILK YIELD PERIOD IN CHATMOHAR AREAS

Milk Period	Per-cross breed cow (liters)	Average 5 cross breed cow(liters)	Average 10 cross breed cow(liters)
Before Lactation	8.00	40.00	80.00
Lactation	12.00	60.00	120.00
During Insemination	6.00	30.00	60.00
Average	8.67	43.35	86.70

Table 7 shows that average daily milk production trend in before lactation is 8 liters per cross breed cow. Lactation period average daily milk production trend in 12 liters per cross breed cow and also during insemination period milk yield trend in 6 liters and average milk yield trend is 8.67 liters per cross breed cow in Chatmohar areas.

6.9 Average Daily Milk Production Trend in Bhangura Area

Data were collected from Bhangura Upazila. The availability of cross breed milk cows in these areas. The area was preferred because of the resemblance to the objectives of the study. Milk yield period per cross breed cow show in the Table 8.

TABLE 8
MILK YIELD PERIOD IN CHATMOHAR AREAS

Milk Period	Per-cross breed cow (liters)	Average 5 cross breed cow (liters)	Average 10 cross breed cow (liters)
Before Lactation	9.5	47.5	95
Lactation	16.0	80.0	160
During Insemination	4.5	22.5	45
Average	10.0	50.0	100

Table 8 shows that average daily milk production trend in before lactation is 9.5 liters per cross breed cow. Lactation period average daily milk production trend in 16 liters per cross breed cow and also during insemination period milk yield trend in 4.5 liters and average milk yield trend is 10 liters per cross breed cow in Bhangura area.

VIII. PROFITABILITY OF MILK PRODUCTION DAIRY FARMS

The purpose of this chapter is to calculate the costs and returns of milk production as well as to assess the livelihood pattern of the Dairy farmers. In this study, cost items included

feed, labor, housing, veterinary, electricity cost, and interest on operating and miscellaneous cost. The total cost per cow per day and per month was calculated for cross breed dairy farm in the study areas. The items of return consisted of return from milk, return from calf, value of cow-dung and return from other uses of dairy cattle.

**TABLE 9
TOTAL DAILY & MONTHLY COSTS AND RETURNS OF RAISING PER CROSS
BREED DAIRY COW**

Particulars	Cross breed dairy cows		
	Daily cost amount (Tk.)	Monthly cost amount (TK)	% of total
Costs			
Paddy straw	40	1200	10.19
Green grass	96	2880	24.45
Oilcake	60	1800	15.28
Wheat bran	52.5	1575	13.37
Rice bran/polish	64	1920	16.30
Salt	4.5	135	1.14
Other feed cost	20	600	5.09
Labor cost	30	900	7.64
Housing cost	0.52	15.62	0.13
Veterinary cost	5	150	1.27
Electricity Cost	1.67	50	0.42
Interest on operating cost	8.33	250	2.12
Miscellaneous cost	10	300	2.54
Total cost	392.57	11775.62	100.00
Returns			
Milk	450	13500	82.16
Cow-dung	10	300	2.3
Inventory change	87.67	2630.1	16.00
Other purposes	0.00	0.000	0.000
Total Return	547.67	16430.1	
**Net Return	155.10	4654.48	
BCR (Undiscounted)	1.39		

Benefit-cost ratio (BCR) is obtained when the benefit stream is divided by the cost. Milk production will be profitable when BCR is greater than one. Table 9 appears that the investment in the selected dairy farming were highly profitable since BCR per day per cow for cross breed dairy cow rearing. It is also found that BCR of 1.39 for cross breed dairy cow rearing.

IX. RESULTS AND DISCUSSIONS

Function is a relation (or mathematical function) specifying the maximum output that can be produced with given inputs for a given level of technology. It applies to a firm

or as an aggregate production function to the economy as a whole (Samuelson and Nordhaus, 1995).

Considering the effects of explanatory variables on yield of milk production, eight explanatory variables namely, green grass cost (X_1), Paddy straw cost (X_2), Concentrated feed cost (X_3), Veterinary Cost (X_4), Labor cost (X_5), Interest and Operating cost (X_6), Electricity Cost (X_7), Housing cost (X_8) were chosen as key independent factors to estimate the quantitative effect of inputs on yield of milk production. All these variables have been estimated as per cross breed cow per month of monetary values. However, some variables such as water cost, salt, molasses, etc. were excluded in the analysis due to paucity of reliable data.

To explore the input output relationships production function were fitted in all the locations of possible statistical forms, Cobb-Douglas production function, most popular in farm management analysis, was used as this algebraic model provides a compromise between (a) adequate fit of the date, (b) computation feasibility, and (c) sufficient degrees of freedom unused to allow for statistical testing.

To identify the most important variables in the production process of milk of Dairy farms, the following specification of the model was made:

$$Y_i = \alpha X_{1i}^{\beta_1} X_{2i}^{\beta_2} X_{3i}^{\beta_3} X_{4i}^{\beta_4} X_{5i}^{\beta_5} X_{6i}^{\beta_6} X_{7i}^{\beta_7} X_{8i}^{\beta_8} e^{U_i}$$

By taking log in both sides the Cobb-Douglas production function was transformed into the following logarithmic form because it could be solved by the Ordinary Least Square (OLS) method:

$$\ln Y_i = \ln \alpha + \beta_1 \ln X_{1i} + \beta_2 \ln X_{2i} + \beta_3 \ln X_{3i} + \beta_4 \ln X_{4i} + \beta_5 \ln X_{5i} + \beta_6 \ln X_{6i} + \beta_7 \ln X_{7i} + \beta_8 \ln X_{8i} + U_i$$

Here,

Y = Value of average milk yield per cross breed cow per month (Tk.);

X_1 = Cost of Green grass used per cow per month (Tk.);

X_2 = Cost of Paddy straw per cow per month (Tk.);

X_3 = Cost of Concentrate feed used per cow per month (Tk.);

X_4 = Veterinary cost used per cow per month (Tk.);

X_5 = Cost of labor used per cow per month (Tk.);

X_6 = Interest and Operating Cost;

X_7 = Electricity cost (Tk.);

X_8 = Housing cost (Tk.);

\ln = Natural logarithm;

e = Base of natural logarithm;

α = Constant/intercept;

$\beta_1, \beta_2, \dots, \beta_8$ = Production coefficients of the respective variables;

$i = 1, 2, 3, \dots, n$ ($n=60$);

U_i = Error term.

TABLE 10
ESTIMATED VALUES OF COEFFICIENTS AND RELATED STATISTICS OF
COBB-DOUGLAS PRODUCTION FUNCTION MODEL

Explanatory Variables			T -value	Sig.
	Value of Coefficients	Std. Error		
Intercept	4.033	7.598	7.598	
Green Grass cost (X ₁)	.185**	2.352	2.352	.000
Paddy straw cost (X ₂)	.107**	2.096	2.096	.023
Concentrated Feed cost (X ₃)	.135**	2.137	2.137	.041
Veterinary cost (X ₄)	.142*	4.022	4.022	.037
Human labor cost (X ₅)	-.024	-.365	-.365	.000
Interest and operating cost (X ₆)	.041	.547	.547	.717
Electricity cost (X ₇)	.142**	2.590	2.590	.587
Housing cost (X ₈)	.165*	2.805	2.805	.012
F-Value	41.296			.007
R ²	.866			
Adjusted R ²	.845			
	.893			

Note: * Significant at 1 percent level.

** Significant at 5 percent level.

Estimated Value of the Production Function Analysis

The estimated coefficients and related statistics of Cobb-Douglas production function of cross breed dairy cows are shown in Table 10. The interpretations of the results of the analysis are outlined below.

10.1 Green grass cost (X₁)

The regression coefficient of green grass for cross breed dairy cows was .185. it was positive and also statistically significant at 5 percent level of significance. It revealed that on an average, one percent increase in green grass cost, would significantly increase milk yield by .185 percent for cross breed dairy cows, holding other factors constant.

10.2 Paddy straw cost (X₂)

The regression coefficients of paddy straw cost were positive and also statistically significant at 5 percent level of significance (Table-1.10). The regression coefficients of paddy straw cost were .107 which implied that, other factors remaining the same, if amount of paddy straw cost was increased by 1 percent, then the milk yield of would be increased by .107 percent.

10.3 Concentrate feed cost (X_3)

It can be seen from Table 8.1 that regression coefficient of concentrate feed cost (X_3) was .135. It was positive and also statistically significant at 5 percent level. This indicated that an increase in one percent concentrate feed cost of remaining other factors constant, would result in an increase in the gross return of milk by .135 percent.

10.4 Veterinary cost (X_4)

In case of veterinary cost, the regression coefficient was 0.142 for cross breed dairy cows and also significant at 1 percent level of significance. It revealed that one percent increase in veterinary cost, on an average, would increase milk yield by 0.142 percent for cross breed dairy cows, holding other factors constant.

10.5 Human labor cost (X_5)

The regression coefficient of Human labor cost was found to be negative and insignificant for value of milk yield (Table 8.1). Co-efficient of human labor cost (X_5) was -.024. That means 1 percent increase in additional expenditure on human labor cost would decrease the yield of milk production .024 percent. The labor cost was negative because of the excessive use of this input perhaps due to easy availability of home supplied labor. These labors were not efficiently utilized.

10.6 Interest and Operating cost (X_6)

The regression coefficient of Interest and Operating cost was 0.041 for cross breed dairy cow. It was positive but statistically insignificant.

10.7 Electricity cost (X_7)

It can be seen from Table 1.10 that regression coefficient of electricity cost was .142. It was positive and also statistically significant at 5 percent level of significance.

10.8 Housing cost (X_8)

In case of housing cost, the regression coefficient was 0.165 for cross breed dairy cows and also significant at 1 percent level of significance. It revealed that one percent increase in housing cost, on an average, would increase milk yield by 0.165 percent for cross breed dairy cows, holding other factors constant.

10.9 Goodness of Fit (F-value)

The F-values of the equations were highly significant at 1 percent level implying that the equations were well fitted for explaining the variations in milk yield for cross breed dairy cows. The F-value (41.296) of the estimated production function was highly significant, which implies good fit of the model

10.10 Value of R^2 and Adjusted R^2

The coefficient of multiple determinations (adjusted R^2) was 0.845 percent for cross breed dairy cows. R^2 of 0.866 for cross breed cow implies that about 86.6 percent of the total variations of milk yield of cross breed dairy cows were explained by the explanatory variables included in the model. Remaining 13.4 percent were the effect of other variables which are not included in the model. The Durbin-Watson value was 2.311 that indicate there in no Autocorrelation of the model. The Variance inflation factor (VIF) and Tolerance value also revealed that there is no Multicollinearity of the model.

10.11 Returns to scale

The sum total of entire production coefficients (production elasticity) of the equations for cross breed dairy cows were .893. This indicated that the production functions exhibit decreasing returns to scale of milk production for cross breed dairy cow rearing.

Finally, the results of production function revealed that Paddy straw, green grass, concentrated feed, veterinary, housing, electricity cost are statistically significant and human labor, interest & operating cost are statistically insignificant to value of milk production.

X. CONCLUSIONS AND RECOMMENDATIONS

A noticeable change has also taken place in breed improvement. Cross breeding of local cows with Frisian, Jersey, Sahiwal, etc. are now a day seen in rural areas, these cross-breed cows are high yielded in terms of milk, meat and eggs. BCR per day per cow were Tk. 1.39 for cross breed dairy cow rearing. The employment patterns of the different enterprises have been classified by labor man- days employed in different activities.

10.1 Conclusions

Dairy farming is an economic activity involving investment for milk production and marketing. The study aimed to determine the profitability and factors affecting milk supply of dairy farmers. The calculated net profit and the benefit-cost ratio (BCR) indicate that dairy farming is a profitable business in Pabna District. Dairy farming is a profitable business although it has been facing problems in relation to the production and supply of milk. Dairy farming is considered as one of the important income generating activities to farmers. The study areas exhibited tremendous potentiality for dairy milk production. The result of this study indicated that dairy milk production was highly profitable and it would help to improve the socio-economic condition of dairy farmers in the study areas. Since dairy farming is a capital-intensive enterprise, it is difficult to increase milk production within short period due to scarcity of labor and lack of credit facility in Bangladesh. Farmers were relatively inefficient for being small and marginal. Additionally, lack of adequate space, training, education, political unrest made the problem more severe.

Dairy milk production can be a lucrative commercial enterprise through proper monitoring and intervention of Govt., which would play a dynamic role to achieve food

and nutritional security along with to alleviate poverty, raise income and stabilize balance of payment situation of this country. Declaration of conflicting interests: The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article. Funding: The authors received no financial support for the research, authorship and/or publication of this article.

10.2 Recommendations

In Bangladesh, national livestock policy should be formulated to help in increasing awareness among small Dairy producers about the remunerative market access through collective action. The following recommendations are made for Dairy sector development in the study area:

The government should make arrangement for leasing Khas lands to dairy farmers for fodder production wherever possible. Small scale dairying should be encouraged in Bangladesh to reduce poverty, enhance self-employment and for family feed security. Feed cost is high and emerging as a major threat to profitability in dairy farming. More efforts are needed to increase domestic production of animal feed and the government should ensure smooth supply of these inputs. Milk marketing facilities should be improved either by establishing milk processing plants. The Department of Livestock Services (DLS) should take steps to issue veterinary cards to the registered dairy farmers to ensure timely supply of veterinary services and medicines at reasonable cost.

The existing all Artificial Insemination (AI) services should be extended from the Upazila level to the union and village levels for improving the breed type. Moreover, facilities of (AI) centers and sub-centers should be improved. BLRI and NGOs should take steps to extend livestock programs. Technology related policies to improve the fodder production (CB-FPS) and breeding improvement (NL-BRP)

XI. LIMITATIONS OF THE STUDY

Although the present study provides some valuable information for policy makers, entrepreneurs, extension workers, researchers, the relevant officials of the government and non-government agencies, it suffers from the following limitations:

In Bangladesh, most of the Dairy farmers don't keep any records of their farm. As a result, the accuracy and reliability of data fully depend on their memories and sincerity. The researcher had to work with small size of samples due to limited time and funds. However, the data were analyzed quite exhaustively but a large sample might have strengthened the precisions of the findings.

In spite of the above limitations, some of the findings of the study may be useful in providing important information for decision makers but a word of caution should be kept in mind while considering the findings or result of the study for other areas of the country.

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Factors Influencing Green Financing Among the Bangladeshi Investors

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ABSTRACT

At present, the world is facing a lot of natural calamities such as floods, droughts, tsunami, scarcity of water, and the rising of sea level as the devastating impacts of the global climate change. This is the high time for developing countries like Bangladesh to response to these consequences in order to take necessary steps for long-term sustainability. For ensuring the sustainability, it is crucial to make green interventions and frameworks for future developments. Among the frameworks, green financing can play a vital role in real economy through sustainable economic growth because it has impacts on agriculture, business, environmental risk management etc. In this current paper, the authors tried to explore influential factors and analyze the investors' behavioral intention towards accepting of Green Financing among Bangladeshi investor. The findings of the current research will help the policy makers to achieve the sustainable developments goals (SDGs) for Bangladesh by 2030.

Keywords: Climate Change, Sustainability, Economic Growth, Green Financing.

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I. INTRODUCTION

In this century, climate change is one of the biggest global issues. Climate change issue is leading the global leaders to take actions promptly. Though green financing was traced first in the 1970s, the claim of the movement for sustainability didn't see the light of hope until 2015, with the initiative of Sustainable Development Goals and the Paris Agreement. In November 2021, 26th United Nations Climate Change Conference of the Parties (COP 26) was hosted by U.K. Financing is a main subject of COP 26 (Florencia & Morales, 2021).

At COP 26, political and industrial leaders discussed regarding new steps for the generation of power, investment in energy, and prevention of further threats to the world environment. Day three of COP 26 was called 'Finance Day', and negotiators encouraged green investment on that day. The day took the steering of delegates toward the increase of public and private investments for environment friendly projects, and the cause of financial organizations to do emissions assessment while investing. Ministers of finance, representatives of banks, and managers of investment focused on possible actions to the improvement of green finance. Jeff Bezos, owner of Amazon, and one of the richest men in the world announced to donate \$2bn for the improvement of degraded land. UN climate ambassador and banker Mark Carney announced additional support to the Glasgow Financial Alliance for Net Zero, a group of banks, where he is the chairperson. Now, Net Zero represents 40% (\$130tn) of total global assets. In a planned deal on day four at COP 26, there was an agreement among more than 20 countries including the US to close foreign investments in the projects of fossil fuel. At COP 26, Sheikh Hasina, Prime Minister of Bangladesh called rich countries to keep their promises to stop the emissions of green-house gases and to provide \$100 billion per annum to less wealthy nations to assist them to cope with climate change and to alleviate temperature rise (Welle, 2021). Sustainable financing has gained popularity in recent years as both banks and enterprises in Bangladesh have become increasingly keen to embrace the business model that protects the environment from pollution. In addition, Bangladesh Bank has taken several initiatives in order to expand the use of sustainable financing. Green financing is to increase the level of financial flows (from banking, micro-credit, insurance and investment) from the public, private and not-for-profit sectors to sustainable development priorities (www.unep.org).

The word "Green Financing" is becoming prominent and widely discussed concepts in the present time. Green finance is any structured financial activity that's been created to ensure a better environmental outcome (Fleming, 2020). The green financing concept is advanced in western nations and presently is practiced in most of the countries within the world. It demonstrates supporting environment-friendly and decreasing carbon impression from green financing exercises. Green financing considers all the social and natural components. It is also called moral financing. The objective of green investment is to guarantee the utilization of assets in favor of the environment and society (M. S. Islam & Das, 2013).

II. OBJECTIVES OF THE STUDY

Since Bangladesh is one of the world's most climate-vulnerable countries and is also aiming to achieve middle-income status by 2031 in a development nexus, this study assesses the perceptions of green financing among Bangladeshi investors (M. S. Islam & Das, 2013), (Welle, 2021). This is done through the analysis of investors' awareness, perceived risk, relative advantage, perceived trust and investment intention about green financing. The study also identifies policy proposals to create an enabling climate for green finance mainstreaming and green investment promotion (Li et al., 2023). In this current paper, the authors' main objective is to explore and analyze the investors' behavior towards Green Financing acceptance among Bangladeshi investors.

Since Bangladesh is one of the world's most climate-vulnerable countries and is also aiming to achieve middle-income status by 2031 in a development nexus, this study assesses the perceptions of green financing among Bangladeshi investors (Welle, 2021). This is done through the analysis of investors' awareness, perceived risk, relative advantage, perceived trust and investment intention about green financing. The study also identifies policy proposals to create an enabling climate for green finance mainstreaming and green investment promotion (Li et al., 2023).

III. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Prior literature has found that there is a negative and significant impact of financial constraints or perceived risk on green financing (Bae, Masud, Rashid, & Kim, 2022; Kumar & Yukita) proved that perceived risk of mobile banking significantly influences perceived usefulness and perceived usefulness influences behavioral intention, which means that perceived risk significantly affects green financing. (Ibe-enwo, Igbudu, Garanti, & Popoola, 2019) showed that bank loyalty is increased by green banking practices and so investment intention towards sustainable financing is also increased. This implies that perceived trust and investment in green financing are positively related. (Ali, Raza, Khamis, Puah, & Amin, 2021) concluded that relative advantage positively influences behavioral intention. The researchers also found that perceived risk negatively influences behavioral intention. (Jaradat, Moustafa, & Al-Mashaqba, 2018) showed that perceived risk positively affects relative advantage and relative advantage significantly and positively affects intention to use S-Government. (Jaradat et al., 2018; Mizanur & Sloan, 2017) conducted research and found that relative advantage and personal awareness are positively correlated with intention to use mobile. The authors also got that perceived risk is negatively correlated with intention.

3.1 Awareness

(Wambugu, 2018) reported that the factors which affected the attitudes towards financing included; Perceived trust, Relative advantage, increasing Awareness, high Penetration from crowded banking halls to unbanked & diverting customers. This has been inferred through the author to mean that, while embracing green financing, the main conducting forces are enhancing the operational performance, raising trust, awareness, and a time minimizing risk. (Garrido, 2020) mentioned that with the growing awareness of the

importance of environmental protection, more and more people are looking for ways to invest in companies that are working towards sustainable practices. Investing in green companies and sustainable stocks is not only good for the environment but can also be a source of steady, financially lucrative passive income. A recent study by the International Renewable Energy Agency (IRENA) found that every dollar invested in renewable energy brings three dollars or more in return or in the form of savings. Furthermore, these investments facilitate in creating more jobs than traditional investments. (Garrido, 2020) showed that the growing demand for sustainable investments has rapidly emerged in recent years. Increasing the awareness of investors along with a more active role from fund managers to deliver portfolios in a continuous attempt to do sustainable business, as well as to include new standards that reflect these changes. (Kiruthika, 2013) defined awareness as the type of social component which increases the consciousness among the people and generates confidence in the individual to face the problem thoughtfully. (Thanulingam & Gnanadesigan, 1996) defined awareness as the ability of consumers to recall more or less currently the various aspects of consumer movement and consumer rights and the respondents' clarity of understanding of the selected aspects. According to (Arul Murugan, 2000), awareness is the prerequisite for how to gain knowledge and to do adoption. (Ellahi, Jillani, & Zahid, 2021; Yu, Han, & Hu, 2016) found that the green banking awareness is dependent on age, gender, occupation of the individual and is influenced by traits of sustainable banking practice

Hypothesis (H1): Awareness has a positive impact on investors' behavioral intention towards green financing.

3.2 Perceived Risk

(Akturan & Tezcan, 2010) sought the impact of innovative characteristics on the intention of agent banking adoption. They investigated consumers' mobile banking adoption through an integration of the technology acceptance model (TAM) with work on perceived benefits and perceived risks. The research identified that risk does not affect the attitudes towards green financing intention. (Kesharwani & Singh Bisht, 2012) sought research on the effect of trust and perceived risk on banking adoption in India through an expansion of technology acceptance model. The study stated that perceived risk has an opposite effect on behavioral intention of banking adoption & trust has a positive effect on banking acceptance. Perceived risk has always been an important content for academic research and the concept were measured through different paradigms as developed by (Hussain, Ahmed, Jafar, Rabnawaz, & Jianzhou, 2017; Jeong & Jang, 2011; Martin, Mortimer, & Andrews, 2015; Tian, Zhang, Jiang, & Yang, 2022). Based on these, authors pay attention to perceived risk on green investment and make the following assumption.

Hypothesis (H2): Perceived Risk is negatively related to investors' attitude towards green financing.

3.3 Relative Advantage

Relative advantage (RA) was introduced by Rogers in his book of Diffusion of Innovations (Rogers & Shoemaker, 1971). Originally, RA was employed to capture the

relative superiority of an innovation (in a very broad sense) and was defined as “the degree to which an innovation is perceived as being better than the idea it supersedes” (Rogers 2003). Several researchers have suggested that relative advantage and perceived usefulness are interchangeable in studying IT adoption. For instance, (Karahanna, Agarwal, & Angst, 2006) asserted that “perceived usefulness in TAM is equivalent to Rogers’ relative advantage. Some other works includes (Sahin &Thompson, 2006).Based on the above discussions, authors pay attention to the following assumption.

Hypothesis (H3): Relative Advantage positively influences investors’ behavioral intention to obey green financing.

3.4. Perceived Trust

The trust has a strong causal impact on intention and conduct (Giampietri, Verneau, Del Giudice, Carfora, & Finco, 2018), (Nuttavuthisit & Thøgersen, 2017). Following the observation conducted via (Perrini, Castaldo, Misani, & Tencati, 2010) accepted as true providers amongst Italian consumers is extensively reliant on stores’ commitments to customer’s rights and their surroundings. Eagerness has an appreciably tremendous impact on a purchaser’s buying intention (Piri & Lotfizadeh, 2016) and has additionally been highlighted as a big predictor of behavioral aim (Sultan, et. al., 2018). As a result, the following hypothesis is evolved:

Hypothesis (H4): Perceived Trust has a positive effect on investors’ behavioral intention to adopt green financing.

IV. RESEARCH METHODOLOGY

Evaluation procedures will follow acceptable and reliable social science methods to ensure credibility, impartiality and the production of high-quality information and knowledge. To meet the requirements of all the goals of this evaluation research, a quantitative assessment, i.e. a survey with a questionnaire, will be applied. Hypotheses will be developed based on a detailed literature review. Furthermore, a conceptual framework will be created based on the literature review. According to (Babbie, 2010), quantitative methods emphasize the objective measurement and statistical, mathematical, or numerical analysis of data collected through public opinion polls, questionnaires, and surveys, or by manipulating preexisting statistical data using computational techniques. Quantitative research focuses on collecting numerical data and generalizing it across groups of people or explaining a certain phenomenon. (Steckler, McLeroy, Goodman, Bird, & McCormick, 1992) identifies that quantitative research generates factual, reliable outcome data that are usually generalizable to some larger population.(Bryman, 2016) argues that a quantitative research approach is research that emphasizes numbers and figures in data collection and analysis. A quantitative research approach can definitely be considered scientific. A quantitative research instrument can be applied generally or publicly because it has a clear objective and guidelines. The aim of this study is to identify the attitudes towards green financing among Bangladeshi investors using an exploratory and quantitative research design. Quantitative approaches can amplify these characteristics through a systematic data collection process. This research relies on primary data sources. In this research, data were

collected by questionnaire survey process. Twenty statements were set in the survey questionnaire following a five-point Likert Scale which incorporates Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), and Strongly Agree (5).

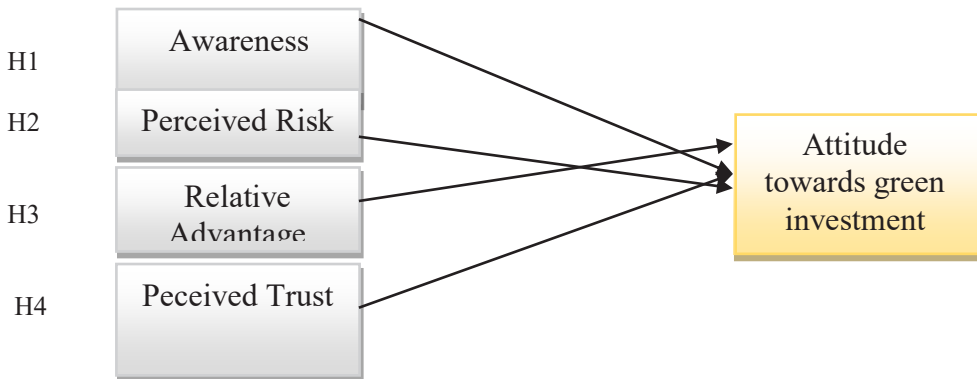
4.1 Population and Sampling Techniques

According to (Tabachnick & Fidell, 2007) proposed to apply a rule-of-thumb that $N \geq 50 + 8m$ (for the multiple correlations) and $N \geq 104 + m$ (for the partial correlation), where N is used for sample size and m is the number of independent variables. There are Four independent variables in this study, so according to this rule, the sample size (N) should be a minimum of $50 + 8 \times 4 = 82$. It has been recommended that qualitative studies require a minimum sample size of at least 12 to reach data saturation (Fugard & Potts, 2015; Guest, Bunce, & Johnson, 2006; M. E. Islam & Chowdhury, 2013). So, it is clear that the sample size is not fixed, it is debatable. The segment of the sample size used in this study is given in the Table 1.

TABLE 01
SAMPLE SIZE OF THE STUDY

Position	Target Sample Size	Total Sample Size
Organizations or companies	12 (6 banks + 6 others)	40
Private individuals	28 (20 current investors + 8 potential investors)	

FIGURE 1
THE CONCEPTUAL FRAMEWORK



V. ANALYSIS TECHNIQUES

Data analysis tools used in this research are SPSS and Smart-PLS. Descriptive analysis has been done by SPSS and factor analysis and loading have been done by Smart-PLS. There should be linear relation among the variables in factor analysis. Besides, there

must be a minimum moderate correlation among the variables so that there remains a difference between the numbers of factors and variables.

Suppose \mathbf{X} is the observable random variable with p , $\boldsymbol{\mu}$, and $\boldsymbol{\Sigma}$; where p represents components, $\boldsymbol{\mu}$ represents mean, and $\boldsymbol{\Sigma}$ represents covariance matrix. Here, \mathbf{X} depends on some common factors F_1, F_2, \dots, F_m , known as unobservable random variables and p specific factors $\varepsilon_1, \varepsilon_2, \dots, \varepsilon_m$ known as additional sources of variation.

The generalized model of factor analysis can be written as,

$$\begin{aligned} X_1 - \mu &= l_{11}F_1 + l_{12}F_2 + \dots + l_{1m}F_m + \varepsilon_1 \\ X_2 - \mu &= l_{21}F_1 + l_{22}F_2 + \dots + l_{2m}F_m + \varepsilon_2 \\ X_p - \mu &= l_{p1}F_1 + l_{p2}F_2 + \dots + l_{pm}F_m + \varepsilon_p \end{aligned}$$

The expression of the above equation system is $\mathbf{X} - \boldsymbol{\mu} = \mathbf{L}\mathbf{F} + \boldsymbol{\varepsilon}$. Here l_{ij} is the coefficient. It is the loading of i^{th} variable which is on the j^{th} factor. Thus \mathbf{L} is the indication of the factor loadings' matrix. ε_i is the specific factor. There is an association between ε_i and only X_i . X_i is the response of i^{th} variable. $X_1 - \mu_1, X_2 - \mu_2, \dots, X_p - \mu_p$ are p deviations. In terms of the unobservable random variables ($p+m$), F_1, F_2, \dots, F_m and $\varepsilon_1, \varepsilon_2, \dots, \varepsilon_m$ are the expressions of the p deviations (M. E. Islam & Chowdhury, 2013).

VI. ANALYSIS AND FINDINGS

6.1 Descriptive Analysis

Descriptive Analysis refers to the particulars of the demographic profile of the respondents. It would be processed in this section with the use of frequency distribution table and percentage of alignment questions about gender, age, and education.

6.2 Gender

On Table 2, the number of male respondents is higher, that is 23 (57.5%), than female respondents with a number of 5 (12.5%). And the rest are from responsible persons of the different organization 12 (30%).

TABLE 2
FREQUENCY AND PERCENTAGES OF THE RESPONDENTS' GENDER

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	23	57.5	57.5	57.5
	Female	5	12.5	12.5	70.0
	Organization	12	30.0	30.0	100.0
	Total	40	100.0	100.0	

6.3 Age

Table 3 shows the respondents' age where about 25% & 22.5% respondents were aged 21- 29 years & 30-39 years in the age group. The researcher found that 10% & 12.5% respondents were in the age group of 40-49 years & 50 &>50 years. The rest 12 respondents were organizations.

TABLE 3
FREQUENCY & PERCENTAGES OF THE RESPONDENTS' AGE

Age	Frequency	Percent	Valid Percent	Cumulative Percentage
21-29	10	25	25.0	25.0
30-39	9	22.5	22.5	47.5
40-49	4	10.0	10.0	57.5
50 &>50	5	12.5	12.5	70
Not Applicable	12	30.0	30.0	100
Total	40	100	100	

6.4 Education

About the level of education, Table 4 indicates that most of the respondents, 19 (47.5 percent) had the Master's degree, while the minority of the respondents, 9 (22.5 percent) had the undergraduate degree. And the rest 12 respondents were organizations.

TABLE 4
FREQUENCY AND PERCENTAGES OF THE RESPONDENTS' LEVEL OF EDUCATION

Educational level	Frequency	Percent	Valid Percent	Cumulative Percent
Master's Degree	19	47.5	47.5	47.5
Undergraduate Degree	9	22.5	22.5	70
Not Applicable	12	30	30	100
Total	40	100	100	

6.5 Investment Percentage

Table 5 indicates that only 13 (out of 40) respondents (32.5%) have invested in green financing and most of them have invested at a lower percentage. Other 27 respondents (67.5%) do not invest in green financing yet. So, it can be said that green financing is a potential sector for Bangladesh.

TABLE 5
FREQUENCY TABLE FOR INVESTMENT PERCENTAGE

	Frequency	Percent	Valid Percent	Cumulative Percent
	27	67.5	67.5	67.5
0.01%	1	2.5	2.5	70
1%	2	5.0	5	75
10%	1	2.5	2.5	77.5
100%	2	5	5	82.5
2%	1	2.5	2.5	85
20%	2	5	5	90
3%	1	2.5	2.5	92.5
4.68%	1	2.5	2.5	95
5%	1	2.5	2.5	97.5
70%	1	2.5	2.5	100
Total	40	100	100	

6.6 Frequency for Survey Questionnaire

Frequency of surveyed Questionnaire is given in Table 6.

TABLE 6
FREQUENCY TABLE FOR SURVEY QUESTIONNAIRE

Questions' Category	Questions used for Survey	SDA	DA	N	A	SA
Awareness	Having knowledge about the term 'Green'	–	1 (2.5%)	3 (7.5%)	20 (50%)	16 (40%)
	Familiar with Green Financing	–	1 (2.5%)	6 (15%)	16 (40%)	17 (42.5%)
	Familiar with the advantages of Green Financing	–	1 (2.5%)	5 (12.5%)	17 (42.5%)	17 (42.5%)
	Having knowledge about where to get information on Green Financing	–	1 (2.5%)	11 (27.5%)	20 (50%)	8 (20%)
	Security concerns prevent from Green Financing	12 (30%)	17 (42.5%)	11 (27.5%)	–	–
	Investment in green project is	10 (25%)	18 (45%)	11 (27.5%)	1 (2.5%)	–

Perceived Risk	risky					
	Afraid of getting less profit from Green Financing	12 (30%)	10 (25%)	16 (40%)	2 (5%)	–
	Company will be underestimated	7 (17.5%)	15 (37.5%)	17 (42.5%)	1 (2.5%)	–
	Green Financing will badly affect financial sector	19 (47.5%)	13 (32.5%)	7 (17.5%)	1 (2.5%)	–
Relative Advantage	Green Financing can include the investment, finance, technology, and development model for balancing the requirements of the world	–	–	4 (10%)	20 (50%)	16 (40%)
	Offering clean and green technologies with a positive impact	–	–	3 (7.5%)	19 (47.5%)	18 (45%)
	Using ecological approach for preserving the environment	–	–	3 (7.5%)	20 (50%)	17 (42.5%)
	Making global economy stronger and secured	–	–	6 (15%)	17 (42.5%)	17 (42.5%)
Perceived Trust	Green Financing is trustworthy	1 (2.5%)	2 (5%)	7 (17.5%)	15 (37.5%)	15 (37.5%)
	Green Financing serves the present and future interests of investors	1 (2.5%)	1 (2.5%)	7 (17.5%)	18 (45%)	13 (32.5%)
Perceived Trust	Green Financing has the ability to provides effective financing	1 (2.5%)	1 (2.5%)	8 (20%)	13 (32.5%)	17 (42.5%)
	Goodwill of green financed companies has important	1 (2.5%)	1 (2.5%)	8 (20%)	13 (32.5%)	17 (42.5%)

	influence on investment					
Behavioral Intention (Investment Intention)	Our society will invest for green financing in the near future	–	–	11 (27.5%)	18 (45%)	11 (27.5%)
	Determined to invest for green financing in short time	–	–	17 (42.5%)	16 (40%)	7 (17.5%)
	Have a plan to invest for green financing in short time	–	–	13 (32.5%)	13 (32.5%)	14 (35%)

Source: Surveyed by Authors

Table 6 shows that investor's behavioral intention towards green financing is influenced by awareness, perceived risk, relative advantage, and perceived trust. The table exhibits that the participants' consent differs from area to area. In case of awareness, relative advantage, and perceived trust, most of the participants have agreed with the statements because the agreement (agreed and strongly agreed) percentage is higher for each statement. That means awareness, relative advantage, and perceived trust have positive impacts on investors' investment intention towards green projects. Only in case of perceived risk, majority of the participants have disagreed with the statements because the disagreement (strongly disagreed and disagreed) percentage is higher for every statement in this area. That means perceived risk negatively influences investors' intention for green financing (M. E. Islam & Chowdhury, 2013).

6.7 Factor Analysis and Loading

Factor analysis is the aspect of accessing validity and reliability that is focused on statistics to calculate the relationship between various sub-factors and variables, identify the components that will be loaded upon by various factors and sub-factors and determine how accurate they are. Correlation coefficients between observed variables and latent common factors are called factor loading. Factor loadings are part of the outcome from factor analysis.

6.8 Construct Reliability

To determine the reliability level of each construct, the Cronbach's alpha (α) and composite reliability (CR) were assessed using SmartPLS software, while average variance extracted (AVE) was estimated to measure the convergent validity. The findings showed both α and CR values >0.70 , demonstrating the indicators are reliable, whereas AVE value >0.50 indicated the convergent validity reliably established [43, Hair et.al.2018]. Table 7 presents such outcomes.

TABLE 7
CONSTRUCT RELIABILITY

	Cronbach's Alpha	CR	AVE
AW	0.796	0.842	0.577
PR	0.755	0.837	0.510
RA	0.772	0.853	0.593
PT	0.912	0.935	0.784
BI	0.770	0.868	0.687

6.9 Discriminant Validity

The Heterotrait Monotrait (HTMT) ratio was showed for discriminant validity assessment. The HTMT value of <0.85 directs the acceptable level of discriminant validity between two reflective constructs (Table 8). In this study, this criterion was reliably identified.

TABLE 8
DISCRIMINANT VALIDITY (HTMT RATIO)

	AW	BI	PR	PT	RA
AW					
BI	0.281				
PR	0.388	0.492			
PT	0.139	0.251	0.132		
RA	0.423	0.776	0.401	0.432	

6.10 Outer Loadings

Outer loadings identify the indicators' reliability. The study results confirmed all the indicators are reliable with outer loadings value of ≥ 0.7 (Hair, Risher, Sarstedt, & Ringle, 2019). On another note, the range value of 0.50 to 0.60 of the outer loadings is still acceptable (Skelton, Nattress, & Dwyer, 2020). Thus, the indicators from awareness (AW-1, AW-3) and perceived risk (PR-1) are also accepted, as shown in Table 9.

Table 9
STRUCTURAL MODEL

Constructs	Items	Outer Loadings
AW	AW-1	0.619
	AW-2	0.919
	AW-3	0.669
	AW-4	0.794
PR	PR-1	0.559
	PR-2	0.755
	PR-3	0.804
	PR-4	0.707
	PR-5	0.722
RA	RA-1	0.709
	RA-2	0.777

	RA-3	0.797
	RA-4	0.793
PT	PT-1	0.879
	PT-2	0.775
	PT-3	0.955
	PT-4	0.922
BI	BI-1	0.772
	BI-2	0.883
	BI-3	0.828

In this research, partial least squares structural equation modeling (PLS-SEM) was used to analyze structural relationships among variables. In PLS-SEM, the findings indicated that behavioral intention could be positively but not significantly explained ($\beta = 0.2\%$) by the awareness. Thus, H1 (AW \rightarrow BI) was rejected. Besides, perceived risk brought a -22% variance to behavioral intention, while the relative advantage explained a 53% variance. Based on this, H2 (PR \rightarrow BI) and H3 (RA \rightarrow BI) were accepted. On the other hand, perceived trust directed 3.4% changes to behavioral intention. But this outcome did not adjust statistically with its significance level ($p > 0.05$). Therefore, H4 (PT \rightarrow BI) was not confirmed. Finally, all the independent variables (awareness, perceived risk, relative advantage, perceived trust) had brought 41.3% of the variance in the endogenous variable (behavioral intention). Table 10 represents all hypotheses' results and R^2 value.

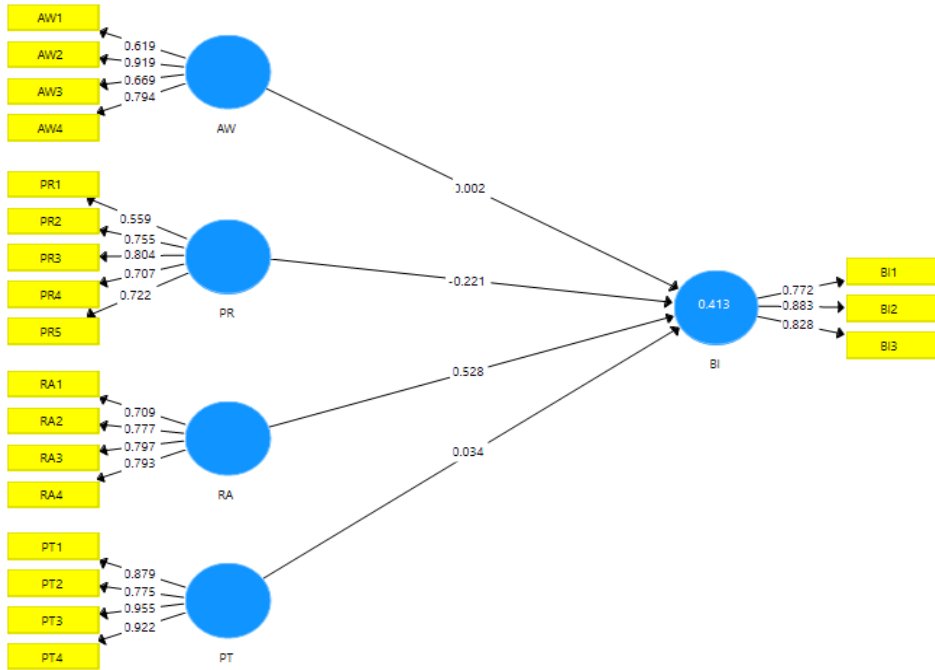
TABLE 10
HYPOTHESIS RESULTS

Hypotheses	β	T Statistics	P Values	Results	DV	R^2	Adjusted R^2
H1 AW \rightarrow BI	0.002	0.012	0.990	Rejected			
H2 PR \rightarrow BI	-0.221	2.268	0.008	Accepted	EE	0.413	0.346
H3 RA \rightarrow BI	0.528	3.142	0.002	Accepted			
H4 PT \rightarrow BI	0.034	0.180	0.857	Rejected			

The hypothesis (H1) stated that awareness increases individuals' behavioral intention to obey green financing. This result of the study is not significant which indicates that awareness is not the predictor of green financing acceptance. The hypothesis (H2) stated that perceived risk will have a negative impact on the purpose of adoption of green financing on behavioral intention. This result of the study is significant ($\beta = -0.221, p < 0.05$) which refers that risk is a predictor of green financing adoption. The hypothesis (H3) stated that there is a positive relationship between the relative advantage and the adoption of green financing. This result of the study is significant ($\beta = 0.528, p < 0.05$) which refers that relative advantage is a predictor of green financing adoption.

The hypothesis (H4) stated that there is a positive relationship between perceived trust and adoption of green financing. This result of the study is not significant which indicates that perceived trust is not a predictor of green financing adoption.

FIGURE 1
FACTOR ANALYSIS AND LOADING



Previous research studies focused almost entirely on green financing in advanced countries, with no studies found that discussed more advanced green financing applications available to investors in developing countries, nor was a study exploring the investors’ behavioral intention towards green financing acceptance in the Bangladesh context. These considerations have been discussed in this research. Awareness, Perceived Risk, Relative Advantage, and Perceived Trust affects the Bangladeshi Investors’ investment intention for green financing. Among these, Awareness, Relative Advantage, and Perceived Trust influences investors’ attitude positively and only perceived risk influences negatively.

VII. CONCLUSIONS

The purpose of the study was to identify Bangladeshi investors’ behavioral intention towards green financing. First test of reliability is used to test the result & Cronbach alpha. The findings showed both α and CR values >0.70 , demonstrating the indicators are reliable, whereas AVE value >0.50 indicated the convergent validity reliably established. Then, from discriminant validity test, the HTMT value of <0.85 directs the acceptable level of discriminant validity between two reflective constructs. Finally, the outer loading results confirmed all the indicators are reliable with outer loadings value of ≥ 0.7 or within the range of 0.50 to 0.60. From the hypothesis results, it can be told that awareness, relative advantage, and perceived trust have positive effect and perceived risk has negative effect on investors’ attitudes towards green financing. Besides, the hypothesis

test shows that perceived risk and relative advantage significantly influence investors' behavioral intention to accept green financing.

VIII. IMPLICATIONS OF THE RESEARCH FINDINGS, LIMITATIONS AND FUTURE DIRECTION OF THE CURRENT RESEARCH

The study's findings suggest that investor awareness, perception, knowledge and trust are critical determinants of green finance adoption. This points to the need to create awareness and support educational programs to increase investors' knowledge of green finance and its importance in achieving the Sustainable Development Goals. The study also highlights the importance of regulatory frameworks, policies and incentives to support green finance. These findings are consistent with SDG 13 on climate action, which aims to strengthen resilience and adaptive capacity to climate-related hazards and natural disasters. The study's findings also highlight the importance of social responsibility and ethical considerations among investors. This is in line with SDG 12 on responsible consumption and production, which aims to promote sustainable lifestyles and ethical business practices. In addition, the study highlights the importance of collaboration and partnership between different stakeholders to achieve the Sustainable Development Goals, in line with SDG 17 on Partnerships to Achieve the Goals.

In the point of practical implications, the findings of the study indicate that investors in Bangladesh are willing to invest in green projects if they have access to information, incentives and a supportive regulatory framework. This highlights the importance of creating awareness and educating investors about green finance and its benefits. The study also has significant practical implications for achieving the Sustainable Development Goals (SDGs). One of the key practical implications of this study is the need for policymakers to develop supportive regulatory frameworks that support green finance. This can include tax incentives, subsidies and other forms of financial support to motivate investors to invest in sustainable projects. Bangladesh can thus contribute to achieving SDGs by 2030. The authors find out some limitations during the conducting of this research such as this study is limited to Bangladesh, and as such, the findings may not be generalizable to other country. Sample size is small, there was limited access to information of the investors, the current research works did not considered or evaluated stakeholders satisfaction and finally the research did not highlighted the loyalty of investors towards green financing.

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Labor Exploitation of the Ready-Made Garments Sector in Bangladesh

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ABSTRACT

The aim of this paper is to evaluate the labor exploitation of Ready-Made Garments sector in Bangladesh and its Social Impact. "Exploiting labor" used as treating people unjustly in order to benefit financially from their labor. It is a wide concept since it is a truth that has to do with economics, morals, society, and politics. Bangladesh is a labor-intensive country. More than 58% of the 4 million or more textile workers in Bangladesh are women. However, in terms of growth and foreign exchange profits. Nevertheless, the value of labor in this industry is negligible. Our research focused on the economic labor exploitation in Bangladesh's ready-made Garment (RMG) sector. Real wages should be equal to the marginal output of labor in fully competitive labor markets without distortionary taxes and with profit-maximizing business practices. In this article, we look at the RMG business in Bangladesh and find a growing gap between actual compensation and labor's marginal output, which in reality shows how employees are exploited by the RMG industry. In terms of setting salaries and maintaining demand stability in the global garment industry, market forces are crucial. On the other hand, factory owners consider exploitation as a workable strategy for maximizing profits. As the article demonstrates, labor abundance undermines workers' ability to fight for their legal rights, which empowers factory owners. The study investigates how factory owners sway the market to increase their profitability in this setting. The socioeconomic situation of the RMG employees is also examined in the research. The working environment is not favorable in terms of the social and economic environment.

Keywords: Labor Exploitation, Ready-Made Garments, Profit Maximization, Economic Environment.

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I. INTRODUCTION

To take unfair advantage of someone is to exploit them. It involves taking advantage of someone else's vulnerability for one's personal gain. Unfair economic interaction is a common manifestation of concerns about exploitation. At least as far back as Aristotle, who claimed that a just transaction will reflect a type of reciprocity such that the values of the things transferred are proportional, attempts to define the criteria that determine whether an exchange is fair or unfair have been made (*Nicomachean Ethics*, Book V, Part V). Exploitation may be placed structurally. In the first scenario, unfairness is a characteristic of a discrete transaction involving two or more parties. In this sense, a ready-made garment factory that employs low-wage workers from underprivileged communities in developing nations may be considered exploitative. However, structural exploitation is also possible; it occurs when institutions or systems have "rules of the game" that unfairly favor one set of people at the expense of another. As we'll see later, Karl Marx thought that capitalism's political and economic institutions were exploitative in this way. Additionally, some modern feminists have claimed that the institution of conventional marriage is exploitative in that it preys on and strengthens harmful types of inequality between men and women. (Sample 2003: Ch. 4).

For a nation that dates back to the era of industrial progress, labor exploitation is a noteworthy issue. The issue is still there today and has taken on various forms. It is a global issue that affects every nation in the world, not just one particular nation or realm. Anyone who works may become a victim of exploitation. However, some groups of people are seen to be more susceptible to exploitation than others. The workforce in the ready-made garment industry is one group that is more vulnerable to exploitation. One of the biggest issues in least developed countries is unemployment. Bangladesh is a developing nation, and as such, a significant portion of its population lives in poverty. This fact serves as a powerful trump card for both foreign and domestic business owners. Due to the undervalued status of the impoverished laborer and the exploitation that results from their fundamentally unequal power relationships, these owners take unfair advantage of or treat them unfairly. Although Bangladesh's economy has been growing steadily, at some point it will settle and provide a number of problems for the country's primary economic growth. Currently, every product made in the garments industry is sold for incredibly low prices all around the world since labor costs are so low. Additionally, it is important to note that all of these factories are located in developing or impoverished nations. No developed country would want to work in the textile sector at this wage level. Therefore, it is undeniable that all inexpensive goods are the result of poor pay, which is also known as labor exploitation. LDC nations like Bangladesh. The extra labor is anticipated to be used by small family farms in rural areas as well as other unofficial businesses. Rapid developments had occurred in this situation during the past 20 years. One of these changes is the employment of women in the textile industry.

Since the 1980s, the RMG industry has been expanding quickly in the nation. Women now have a lot of employment opportunities thanks to the clothing industry, with an estimated rate of 70.8 percent. The total number of people working in this industry (Sobhan and Khundker, 2001). Discrimination in employment lowers the salaries of the disadvantaged group while raising wages for other groups. (Oaxaca and Ransom 1994).

Policy intervention is essential to lessen inhumane suffering in a Least Developing nation like Bangladesh where discrimination against vulnerable groups may intensify it. In industrialized countries, there is a wealth of literature on the topic, but it receives little, if any, attention. This is changing, though. Bangladesh is one of several developing nations with a knowledge gap on the scope and dimensions of prejudice. During the 1970s and 1980s, export-oriented industrialization became a significant factor in the industrialization plans of several Asian countries. The gender-related patterns of labor usage in export firms and their makeup have been shown to follow some universal regularities. (UN, 1995). The single largest contribution to foreign currency profits is the apparel industry. The availability of cheap labor, particularly female labor, in Bangladesh has drawn domestic and foreign businesspeople to create Ready Made Garments companies (RMG) because the sectors are labor-intensive. However, some aspects of gender-specific labor exploitation have also pushed businesses to hire a sizable number of female employees in the RMG industry. The goal of this study is to examine the issue of working conditions in the RMG sector while taking into account the economic element, rather than to criticize specific employers or damage the reputation of a particular sector of the Bangladeshi labor market (labor wage rate). In order to provide its conclusions, this research project will analyse data collecting that supports workers' rights. Especially the national labor laws of Bangladesh and the international convention on workers' rights.

II. OBJECTIVE OF THE STUDY

The main objective of the study is to find out and discuss Labor exploitation of Ready-Made Garments sector and its social impact. The following are the study's particular goals:

- i. To narrate the determinants of labor exploitation;
- ii. To analyze social impacts of exploited labor in Bangladesh;
- iii. To specify some particular policies to overcome the exploitation barriers from ready-made garments sector.

III. LITERATURE REVIEW

Labor exploitation is the abuse of employees for financial gain. The abuse may be overtly severe or much more covert. However, its effects on victims are catastrophic on all fronts—psychologically, physically, emotionally, and financially. According ILO (2012), “Contrary to unfair or unsafe working circumstances, forced labor is not those types of situations. There are several ways to tell when someone is being subjected to forced labor, including limits on their freedom of movement, the withholding of pay or identity documents, physical or sexual abuse, threats and intimidation, or being trapped in an unforgivable debt”.

S.S. Abser (2001), she examined that the majority of Bangladeshi garment producers do not believe that there is a link between productivity levels and labor standards. Many of them have developed a strong anti-trade union stance as a result of their economic goals, believing that trade unions will undermine Bangladesh's low-wage employment structure. Uddin Salah (2008), In light of wage discrimination based on

gender and barriers to a healthy work environment both inside and outside of industries, this article examines the current labor market and the position of women workers. The socioeconomic situation of women employed in export-oriented sectors like the apparel industry is also examined in the study.

Kabir Humayun (2022), the results showed that factors such as working hours, productivity goals, work pressure, and workplace harassment affect employees' health and wellbeing. Additionally, because RMG owners and foreign companies have a profit-first mentality, workers have not reaped the benefits of the newly enforced minimum wage because other circumstances have been altered to make up for the pay raise. As a result, workers were deprived of the true benefits of the recently implemented minimum wage and were forced to continue working in exploitative workplaces due to factory owners' profit-maximization mentality.

F. Begum (2010), she examined that many female workers complained about their jobs since they were paid little and inconsistently. Only 22 women were paid between 2700 and 3000 taka per month. In the factory, male coworkers sexually harass female employees. The majority of female garment workers struggle greatly with communication issues. Traveling across long distances can be mentally and physically taxing. Kaniz F (2015), outlined the pay scale, age group, gender, family life, and working hours of employees in Bangladesh's RMG industries. It is noteworthy that during the coming years, the living conditions of garment workers may alter.

Islam. K (2012), Examined that after paying for food and lodging, the majority of RMG employees earn less than the legal minimum wage of Tk. 1620.00 per month and have no money left over for savings. Despite the fact that double pay is offered for overtime hours, the majority of employees only receive a 20% raise. Additionally, the management abuses either verbally or physically close to half of the workforce.

Haque Mahmudul (2022), explored how the empowerment of its female workers in the RMG sector is affected by paid employment. To learn more about the lived experiences and perspectives of female garment workers, semi-structured interviews will be conducted in the field. The research's key results are that women who have access to jobs in this field have grown economically independent and powerful. He comes to the conclusion that having a paid job in the RMG industry significantly enhances the economic, social, and psychological empowerment of women who work in the ready-made clothing industry.

Kamruzzaman. (2018), The authors have firsthand knowledge of the fact that children nowadays are employed in a variety of fields for meagre pay, including agriculture, the service industry, industry, construction, domestic work, and transportation. They are required to work more than one shift each day, which is against the ILO's rules in this regard. They are discussing the various forms of workplace victimization, with physical violence, medical harm, financial exploitation, and sexual abuse topping the list.

3.1 Research Gap

- i. A prior inquiry discovered evidence of labor exploitation in the RMG industry. But the majority of these studies have focused on how women are exploited. However, in this study, we try to evaluate how exploitation as a whole affects society as a whole.
- ii. The majority of earlier cross-sectional research employed data at the county or district level. These studies, however, do not take into account the specific socioeconomic and demographic traits of labor that are likely to have an impact on socio economic and production
- iii. The results of those studies were not reliable due to a lack of statistical and diagnostic procedures.
- iv. No empirical research has been done on worker exploitation in the RMG industry as a whole. The socioeconomic effects of exploitation have not been studied.

IV. METHODOLOGY

4.1 Conceptual Framework

In this section, we'll examine two economists, Adam Smith (1823–1873) and Karl Marx (1818–1883), for their theories on labor exploitation (1723-1790).

4.2 According to Karl Marx

Karl Marx's theory of exploitation is by far the most influential one that has ever been put forth. According to Marx, workers in a capitalist society are exploited to the extent that they are compelled to sell their labor power to capitalists for less than the full value of the goods they produce with their labor. According to Marx, under capitalism, employees' labor is neither wholly voluntary nor solely for their own advantage. It is not genuinely voluntary because employees are compelled to sell their labor to capitalists in order to survive because they do not own the means of production. Workers also don't work totally for their own gain since capitalists exploit them by taking use of their position of power to keep some of the value that their labor produces for themselves.

4.3 According to Adam Smith

Karl Marx referred to the value added by workers who were not paid in wages as the source of profits, interest, and rent. Marx argued that the value of a good produced under capitalism is the total of the value of the goods that workers put into making that good and the value they add to the process. The workers are taken advantage of to the extent that this value-added is not entirely compensated to them. Marx, however, argues that capitalism is only viable when a source of returns on investment, or in other words, when workers are being exploited. The same was said by Adam Smith.

"As soon as stock has accumulated in the hands of particular persons, some of them will naturally employ it in setting to work industrious people, whom they will supply with materials and subsistence, in order to make a profit by the sale of their work, or by what their labour adds to the value of the materials... The value which the workmen add to

the materials, therefore, resolves itself in this case into two parts, of which one pays their wages, the other the profits of their employer upon the whole stock of materials and wages which he advanced." -- Adam Smith (1976, Book I, Chapter VI)

4.4 The Empirical Analysis

The methodology includes a systematic and theoretical analysis of the procedures used in a field of research. It also comprises a theoretical analysis of the body of practices and laws pertinent to a particular field of knowledge. "Research methodology" is a technique to examine the numerous stages that are commonly taken by researchers to methodically analyze their research problems, as well as the underlying reasoning, assumptions, and justifications. Whether the research is in the physical or social sciences, the phrases "research method" and "research methodology" simply refer to the research procedures or tools utilized for doing research. The methodology outlines the procedures used in the data collection, analysis, and empirical model development phases. Many different analytical tools were employed in this investigation. The descriptive statistics (mean, frequencies, standard deviation, and OLS regression) employed with the statistical program SPSS 16 and MS-Office to analyze the socioeconomic consequences of work were included in this. This chapter also includes a description of the explanatory and dependent variables used in the study, along with their connection. We also use the Cob-Douglas production function to analyze the study. Researching labor exploitation is difficult since the ready-made apparel sector lacks secondary statistics on spending, overall income, etc. People work hard to keep this information hidden from others. The responders, who are laborers in the ready-to-wear industry, once again have less education.

4.5 The Empirical Models

First, in order to determine the exploitation rate, we make the following assumption on the production function for the manufacturing sector:

$$Y_i = A_i K_i^\alpha L_i^{1-\alpha} \quad (1)$$

Here, Y_i represents the total value added in the manufacturing prepared, K_i represents the quantity of capital, and L_i represents the marginal product of labor, which is determined by $MPL = (1 - \alpha) Y_i / L_i$, we require a capital share estimate. We run the following regression equation to get such an estimate:

$$\text{Log}(Y_i) = \beta_0 + \beta_1 \text{Log}(k_i) + \beta_2 \text{Log}(L_i) + \epsilon_i \quad (2)$$

Here, ϵ_i is error term. By estimating equation (2) above, we can obtain an estimate for, where the estimated value of β_1 is $\beta_1 = 0.216$. Once we know the value of β_1 , it is simple to calculate the marginal product of labor, or MPL, which is equal to $(1 - \beta_1) Y_i / L_i$, and from there, the MPL-to-W ratio. The Pigouvian exploitation rate is known as this according to Persky and Tsang (1974). As a percentage difference between the marginal revenue output of labor and its wage, the Pigouvian exploitation of labor can be calculated (i.e., the income that labor receives for additional hours of work).

Secondly, in order to examine the determinants of exploitation of readymade garment sector labor the multiple regression model is used. The general form of model as follows:

$$Y = \alpha + \beta_1 S + \beta_2 A + \beta_3 ED + \beta_4 EX + \beta_5 U + \beta_6 L + \varepsilon$$

Where,

Y = Exploitation rate

α = constant term

$\beta_1 - \beta_6$ = Regression coefficient

S = sex of the respondents

A = Age of the respondents

ED = Education of the respondents

U = participation on trade union of the garments factory

L = Acknowledge about labor law

EX = years of experience

ε = error term

The above regression model shows that one unit change in “S” will change the “Y” by β_1 . The sign of the coefficient of this particular variable is expected to be positive, because it directly affects the exploitation rate.

V. THE ESTIMATING PROCEDURE

In a single equation linear regression model, a one-way cause-and-effect relationship is likely to be present. In the current study, there are six explanatory variables and one dependent variable (exploitation rate) (age of the respondents, sex of the respondents, education level of the respondents, experience of the respondents, participation in trade unions, and acknowledgement of labor law). The double log regression model's parameters are linear. Therefore, the ordinary least square (OLS) method is employed to determine the effects of explanatory variables on the dependent variable. Regressions were carried out using the well-known statistical program SPSS version 21. To analyze and present the data, research findings, and estimation results, tables, charts, graphs, and figures are employed.

5.1 Data and Sampling Design

The core data for this study came from a survey of the ready-made garment industry. The questionnaire included the labor at a ready-to-wear manufacturer. The sample size for the survey is 100 workers and 50 garment management records. Three main types of information were intended to be gathered by the questionnaire, including general information about the garment industry, such as the name of the industry, age, sex, education, the number of family members, and specifics about the worker's health. And to compile data on cost of living, savings, rent, sanitary system condition, and living standards. There is also some secondary data that has been offered by other journals, papers, books, and publications. The secondary data came from a variety of publications.

5.2 Selection of the Study Area

In order to get successful and fruitful outcomes, the subject area in the current study has been carefully chosen. When selecting the sample location, the researcher must take into account all the difficulties and constraints involved with the research project. In order to gather the data, 100 employees were randomly selected from these regions (Gazipur City Corporation). A few garment workers have reported experiencing exploitation. And we choose Gazipur city due to its industrial setting. There are several clothes businesses in this area as well as in our hometown. It would be more accurate to gather the information directly from the textile employees in the few wards (07, 42) that make up Gazipur City Corporation.

5.3 Percentage Distribution of Labor Exploitation

This paper reports the results of the econometric analysis. Regression analysis of Table 1 shows that in the 20% of ready-made garment industries and the 60% of garment industries that are exploited, the exploitation rate, which is the difference between labor productivity and wage rate, ranges from 0.86 to 1.00 and from 1.00 to 1.50, respectively. Finally, 10% of businesses making ready-made garment exhibit exploitation rates between 2.00 and 2.64, with the remaining 10% of the sector exhibiting rates between 1.50 and 2.00. According to the table, 80% of industries have an exploitation rate that ranges between 1.00 and 2.64. In other words, in a factory making ready-made garment, the marginal labor productivity or marginal product revenue is 1.01 to 2.6 times higher than the total labor share. As a result, there is a significant amount of labor exploitation occurring in the factories that make ready-made garments. This explains in detail why, after deducting their hourly or energy costs, workers in the ready-made garment sector earn wages that are at most 2.64 times less than the value of the manufacturing. The ready-made Garment industries, however, account for 60% of the exploitation rate between 1.00 and 1.50, as shown by the results. Therefore, we may say that the ready-made garment sector in Bangladesh is largely being abused.

TABLE 1
DISTRIBUTION OF LABOR EXPLOITATION

Exploitation rate	Percentage
0.86-1.00	20%
1.00-1.50	60%
1.50-2.00	10%
2.00-2.64	10%

Source: Authors' Own Calculations

Furthermore, the first row of the frequency table for the rate of exploitation shows that 20% or more of the ready-made garment sectors are probably not exploited. Indeed, this is indicating that either the labor share or the marginal productivity of work is equal because it looks that the marginal productivity of labor is between 0.86 and 1.00 times higher than the monthly wage rate. Since the duration of the data gathering was only planned to be one month, it's possible that some factories could suffer losses at any point or

that there wouldn't be any way to exploit them. Such factories will also never engage in any type of labor exploitation. As a result, 20% of industries do not submit any information regarding the rate of labor exploitation.

TABLE 2
DESCRIPTIVE STATISTICS OF EXPLOITATION RATE

	N	Minimum	Maximum	Mean	Std. Deviation
Exploitation rate	50	.8617	2.6434	1.3286760	.3942954

Source: Authors own Calculation

Table 2 shows average exploitation rate is 1.3286, which means that the total marginal productivity of labor in a factory that manufactures ready-made garments is 1.3286 times higher than the factory's whole labor share where the highest rate is 2.64 and the lowest frequency of exploitation is 0.86.

Under completely competitive labor markets without anticompetitive taxes and profit-maximizing company activities, real wages should be equal to the marginal product of labor (MPL). This analysis of the ready-made garment industries demonstrates a growing disparity between real wages and the marginal product of labor, which is almost 2.64 in this research and is referred to as labor exploitation.

TABLE 3
DETERMINANTS OF LABOR EXPLOITATION

Variables	Coefficients	Standard error	T-ratio
Constant	1.94	0.53	3.65
Age	+0.23	0.19	1.24
Sex	-0.03	0.01	2.05
Education	-0.19	0.06	2.98
Experience	-0.11	0.05	2.23
Trade union	-0.44	0.58	0.76
Labor law	-0.29	0.26	1.13

Source: Authors' Own Calculation

$$Y = 1.9 + 0.23 A - 0.03 S - 0.19 ED - 0.11 EX - 0.44 U - 0.29 L + \epsilon$$

Age, sex, education, experience, trade union, and labor legislation all have coefficients that are determinants of worker exploitation. These coefficients are: 0.23, -0.03, -0.19, -0.11, -0.44, -0.29. We can see that in this case, every coefficient is expressing a negative coefficient. In my investigation, negative coefficients are preferable for my outcome since they show that a change in one independent variable affects the exploitation rate. Additionally, the t statistics and standard errors for those variables are 3.65, 1.24, 2.05, 2.98, 2.23, 0.76, and 1.13, respectively. It is abundantly evident that the factors sex,

education, and experience are all statistically significant and other factors include statistically insignificant.

Since the regression model's positive intercept, or constant, is listed as 1.94, it can be considered autonomous even if none of the independent variables have any impact on the rate of labor exploitation. When all other variables have no effect on the rate of exploitation, or dependent variable in the mathematical sense, the respondents numerically have 1.94 units of exploitation.

The respondent's age is the first independent variable. The coefficient of age in this regression study on labor exploitation rate is 0.23, which implies that if other factors are held constant, age has a positive impact on labor exploitation. But at the 10% level, the variable is significant. The respondent's sex is the second factor. In this case, the regression analysis on the rate of labor exploitation displays a negative coefficient of -0.03, which indicates that, if other variables remain constant, the variable sex has a direct impact on labor exploitation, i.e., females are more exploited than males. At the 5% level, it is statistically significant.

The third variable in my study is education, and its coefficient is -0.19, which is negative. So that it interprets as the education level changed the exploitation rate is also getting changed. If the education level of labor increases, then the exploitation rate will decrease to 0.19 percent. This variable is significant at the level of 1%. So education has a great impact on exploitation.

The fourth variable is the experience of the respondent. Here, the regression analysis on the exploitation rate shows a negative coefficient of -0.11, which is negative and implies that if other variables remain unchanged, the variable experience has a direct impact on labor exploitation, that is, the change in experience in the ready-made garment industry or more skill will cause a change in the labor exploitation rate. If the experience level of labor increases, then the exploitation rate will decrease to 0.11 percent. It is statistically significant at the 5% level. So the experience has a great impact on exploitation.

The fifth independent variable is the respondent's membership in a trade union. In this regression analysis on exploitation rate, the coefficient is -0.44, which implies that if other variables remain unchanged, this variable has a positive impact. But the result shows that the data is statistically insignificant. As a result, participation in a trade union does not have as much of an impact on labor exploitation as things like education, experience, or sex.

The sixth variable is the acknowledgement of labor law. The table is showing that this variable is not significant like trade union. So, it does not have a greater impact on the dependent variable of labor exploitation. Socio economic condition and life standard of RMG labor: Additionally, the management abuses either verbally or physically close to half of the workforce.

TABLE 4
DESCRIPTIVE STATISTICS

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Family Member	100	1	9	3.74	1.587
Amount of Salary	100	5000	15000	9227.80	1935.704
Amount of Savings	100	0	40000	1642.00	4859.879
Amount of Loan	100	0	200000	1.37	29145.568
Amount of House Rent	100	1500	3200	2398.90	413.436
Cost Purpose of Health in Month	100	100	5000	1090.50	885.167
Cost Purpose of Education In Month	100	0	3000	757.00	949.881
Cost Purpose of Cloth in Month	100	100	2000	838.70	462.559
Cost Purpose of Food In Month	100	2500	15000	6985.00	2746.398
Sharing a Toilet	100	1	20	8.04	4.180
Sharing a Room	100	1	7	2.89	1.317
Sharing a Kitchen	100	1	5	2.44	.880

Table 4 shows that the average monthly wage for a laborer is TK. 9227.80, with the greatest monthly wage being TK. 15000 and the lowest TK. 5000. It has been noted that there is a 10,000-tk difference between the highest and lowest labor salary. It relies on factors including job history, gender, level of union activity, etc. The average labor savings at this extremely low wage level is approximately TK 1642, with the highest total labor savings of a labor being TK 40,000 and the lowest total labor savings being TK. It demonstrates that each worker's total current savings is at a very low level. And the average labor loan is TK 1.37, with the biggest and lowest loan amounts being TK 2,000 and 0 respectively. According to the table, a family's typical monthly labor costs for things like health care, education, clothing, and food are, respectively, roughly TK. 1090.50, 757, 838.70, and 6985. In this study, the sanitary system is a dummy variable. The data shows that the average sanitary system is 2.09, which is essentially a poor sanitary system. Of course, every latrine is used by 8.04 people on average, with the largest and lowest usages being 20 and 1 respectively. Additionally, the average calculation for sharing a kitchen and a room was 2.89 people and 2.44 families, respectively.

VI. LABOR LAW IN BANGLADESH IN THE RMG SECTOR

Bangladesh is one of the rising economic powers in the world, and the "RMG" sector is the major contributor to Bangladesh's exports. The RMG labor law is regulated by the Bangladesh Labor Act 2006 and the Bangladesh Labor Rules 2015.

The RMG industry in Bangladesh directly employs 4.2 million people. More than 75 percent of Bangladesh's overall revenues from exports come from the country's garment sector. Despite the sector's crucial importance in the economy of the country, Bangladeshi garment workers endure appalling working conditions in the factories, considerably below

the minimum wage, and little to no benefits. Female employees, who make up roughly 85% of the workforce in the garment industry, are paid even less than their male counterparts and are more likely to be mistreated. It is a fact that the Labor Act of Bangladesh of 2006, whose final revision entered into force in 2013, combines the revisions made to earlier statutes. With the assistance of numerous national and international organizations, it has been put into practice to improve worker rights and their general position, offering a safe workplace, fair compensation, and well-being.

6.1 The Minimum Wage

According to the Labor law in Bangladesh 2006 BLL (2006), the level of employment for each worker in Bangladesh determines the minimum pay. For instance, an entry-level employee is guaranteed a minimum monthly salary of Tk 1,663. Given the gap in salary levels and the rising cost of living, Bangladeshi law is being directly violated by the existing minimum wage. But on July 15, 2013, the Bangladeshi parliament passed amendments to the Labor Act that raised wages for garment workers in response to local and external criticism.

The country's minimum legal pay for garment workers is 8,000 tk monthly. Although the sum was increased by 2,700Tk per month in December, protesters contend that employees in Bangladesh require 16,000Tk to live comfortably. Employees frequently feel forced to work a lot of overtime since their pay is so poor.

6.2 Gender Discrimination

A clause in the 2006 Labor Law ensures that men and women are paid equally. The 1948 Universal Declaration of Human Rights (UDHR) also mentions the right to just and favorable compensation for equal effort in Articles 23(2) and 23(3). There is a salary gap as a result of two connected variables. Male garment employees are far more likely than female garment workers to work in typically higher-paying positions like quality control and floor supervisor, and men also make more money than female garment workers doing the same work.

6.3 Maternity Rights

Despite being legally required; most women are not given maternity leave. Women sometimes have to personally bargain with management for leave before and after giving birth. Some women are given a few weeks of paid leave, but others are forced to accept a lower salary or take unpaid time off. One of the most significant modifications made by the recently modified BLA 2013 Act, however, provides new mothers with cash advantages after giving birth. It used to be possible for a woman to take advantage of maternity leave for up to 8 weeks after giving birth even if she gave notice after the fact. However, it was not stated in this instance that the post-birth leave time would be compensated.

Most of the fundamental ILO labor standards, such as Convention No. 87 on "freedom of association" and Convention No. 98 on "the right to organize and bargain,"

have been ratified by Bangladesh. However, significant portions of the Labor Act continue to fall short of those requirements. According to a Human Rights Watch commentary titled "Bangladesh: Amended Labors Law Falls Short," several recent modifications merely address a few of the old law's problematic sections. For instance, the government wouldn't register a union until at least 30% of the employees in an enterprise, which may include many industries, joined it. Because a significant portion of Bangladesh's workforce is employed in export processing zones, employers will be allowed to fire union leaders for reasons that are purportedly unrelated to the union. Therefore, it would continue to be ineligible under the law to create unions.

6.4 Unsafe Condition

Sections 79–88 of Chapter VII of the Bangladesh Labor Act of 2006 guarantee specific particular safeguards for the employees' safety and health. This chapter states that any operations that are risky or bad for the workers' health should be disclosed. Employees have a right to knowledge about specific accidents and risky situations that may occur at their places of employment. Whereas despite this rule, there are several health and safety breaches in Bangladesh's garment factories.

6.5 Forced Overtime

The Forced Labor Convention of 1930 forbids forced labor across the world. Article 34 of the Bangladeshi Constitution forbids forced labor as well. However, many workers are compelled to work more hours per day than what is legally necessary in order to meet output requirements. At least 70% of Bangladeshi respondents stated that they are required to accomplish daily goals that are unreasonably high. To fulfill daily goals that are unattainable and make enough money to live on, more than half of the employees have worked seven days a week. In order to make up for missed wages, employees who do take a day off during the week maintain hours that are similar to a full seven-day work week.

VII. CONCLUSIONS AND RECOMMENDATIONS

Exploitation is a huge term. It cannot be measure in a single theory. It is not only an economical phenomenon but also social, moral, psychological too. Exploitation of workers in readymade garment factories in Bangladesh is an invisible problem which effects the victims adversely internally and externally and also affect the overall economic growth of Bangladesh. No sustainable development can be possible if the exploitation of labor remains in the country. I have been able to demonstrate that this economical phenomenon of exploitation is real through the experiences of the labor who work in readymade garment sector. Being a resident of industrial area who have notice that impact of labor exploitation, I believe that labor of RMG should not wait for the authorities to come and discover their problems; rather they should tell their problems with their own mouth in their own words. This research has fulfilled its aim by providing a platform for the voiceless labor workers to voice out their experiences in RMG.

It compared relative productivities and relative wages for various groups of workers and jointly estimated wages and output functions. This approach allows not only for assessing the marginal impact of demographic or other characteristics on wages, but also shows of the impact of these exploitation to the labor itself. The analysis found that wage differentials match productivity differentials for certain groups of workers, while for others they do not. The victims are not acquainted about the wage gap. But they can feel that something to them is not right.

Though Bangladesh has high foreign demand for its garments, it has to bring improvement in some areas like labor wages, business climate, trade logistics and skills of the workers. If the country can eliminate all limitations related to garment export, it can become world's number one largest exporter.

- i. Labor legislation should be understood by all workers. If people are aware of their rights, no one will abuse them at work.
- ii. Workers are the main contributor to our GDP, so the government must take the lead in protecting them.
- iii. Should increase the wage level so that they can continue to live well.
- iv. The government should keep an eye on the factories to ensure that all labor regulations are being followed.
- v. A worker welfare fund and a trustee board for the management of the participation fund should be formed in garment manufacturers.

An active labor union must exist in every factory that produces ready-made - garments. Additionally, each plant management system would answer to a union member. The rate of exploitation is always reduced by active unions.

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One Person Company (OPC) in Bangladesh and Its Legal Consequences under the Companies Act 1994

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ABSTRACT

This article discusses the newly introduced One Person Company in Bangladesh. In Bangladesh, the present law relating to companies is known as the Companies Act, 1994. The present Act is based on the Companies Act, 1913. The recent pandemic situation has made the Government of the People's Republic of Bangladesh take some initiatives which benefit both the country and the entrepreneurs. Previously, under the Companies Act, 1994, at least 2 (two) shareholders and 2 (two) directors were required for registering a private limited company. Internationally, the concept of OPC is very popular. In 2020 when the pandemic was going on, the Government of Bangladesh has also introduced the concept of One Person Company in Bangladesh Jurisprudence and such a company shall be termed as OPC. According to the Companies Act, OPC means and includes a company whose shareholder is a natural person. The newly amended section stipulates that "OPC" should be written at the end of the one-person company and also stipulates that the provision of this section will not apply in the case of Non-Governmental Organizations (NGO) and companies limited by guarantee. The newly amended section imposes restrictions on capital and stipulates the minimum paid up capital of such a company is BDT 2,500,000.00 (Twenty-Five Lac) only while the maximum is BDT 5,00,00,000.00 (Five Crore) only. Such a company must show an annual turnover of minimum BDT 1,00,00,000 (One Crore) only and maximum BDT 50,00,00,000.00 (Fifty Crore) only for the immediate previous fiscal year. Should the amounts of paid up capital and turnover exceed these brackets, the company shall have to be registered as a private or public limited company. These legal restrictions may restrain OPC's smooth functioning. As we know that the important features of the private company in Bangladesh have a separate legal entity and shareholders are not liable for the company's debts beyond the amount of share capital they have contributed. The recent amendment will allow many proprietorship concerns to easily convert many proprietorship concerns to easily convert their business into professional manner. This article suggested that imposes on capital restrictions should be reformulated for the expansion of OPC, and the corporate tax rate of the OPC needs to be reduced.

Keywords: OPC, Private Company, Shareholder, NGO, Proprietorship, Share Capital.

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I. INTRODUCTION

A one person company (OPC) is a relatively recent business structure in Bangladesh. There is just one stockholder in the business. In the event of the major shareholder's demise, there must be a nominee. The business will be given to the candidate upon death. Nowadays, the persons like to start business on large scale requiring huge investments which cannot be financed by the resources of a few persons. In such cases the formation of a company is the only choice. As a new form of business company entitles some features that are not existed in other type of business like partnership enterprises (Hannigan, 2018). It enjoys so many privileges and legal rights that ultimately show an independent and personal existence. In Bangladesh, the present law relating to companies is known as the Companies Act, 1994. The present Act is based on the Companies Act, 1913. The present Act came into force with effect from the 1st January 1995 which contains 404 sections and 12 schedules (Companies Act, 1994).

However, the Companies Act, 1994 has been amended twice in 2020 by the Parliament through the passing of companies Act (1st Amendment) 2020 (Act No VII of 2020) and Companies Act (2nd Amendment) 2020 (Act of XXIV of 2020) dated 25th February 2020 and 26th November 222 respectively. The amendments cover very important changes which are introduced in order to implement recommendations of World Bank Ease of Doing Business. The amendments include the abolition of common seal requirements, the introduction of 1 (One) person company, classification of share transfer registration process, digitalization of records, etc.

The expression 'Company Law' may be defined as a branch of law which exclusively deals with all matters relating to company (Al-Amin, 2021). The Companies Act 1994 is the law that governs incorporated domestic entities in Bangladesh. It is the main statute governing the creation, functioning and dissolutions of companies, the relationship of shareholders to a company, periodic disclosures and audit requirements, the functions of the Registrar of Joint Stock Companies and Firms (RJSC), the jurisdiction of the courts in relation to companies etc. (ICAB, 2020). The trace of origin of the term "company" will reveal the Latin word cum-meaning with, and pains-meaning bread; which jointly means taking bread together, a characteristic of the early company where business matters were used to be discussed during festive gatherings (Kahn, 1944). But today "company" is widely and commonly used for: a) joint stock companies-designed for profit, and b) statutory companies- for undertaking works for public utility. A company in ordinary non-technical sense however, means an association for attaining some common objectives, which may be with or without profit (ICAB, 2020).

A company is a voluntary association of persons formed to achieve some common objects, having (Rahman, 2022) a separate legal entity; b) independent and separate from its members; c) with a perpetual succession; d) with capital divisible into transfer shares. The recent pandemic situation has made the government take some initiatives which benefit both the country and the entrepreneurs. Bangladesh newly introduced One Person Company (OPC) in Bangladesh.

According to the Companies Act, OPC means and includes a company whose shareholder is a natural person. The recent amendment will allow many proprietorship concerns to easily convert many proprietorship concerns to easily convert their business into professional manner. This article suggested that imposes on capital restrictions should be reformulated for the expansion of OPC, and the corporate tax rate of the OPC needs to be reduced.

II. ONE-PERSON COMPANY (OPC)

The concept of One Person Company was first introduced in the United Kingdom in 2006. Later, it was also incorporated in the USA, Singapore, UAE, Pakistan, China, India etc. In 2020, one-person company was incorporated in Bangladesh under the Companies Act, 1994. Earlier, under the Companies Act, at least 2 (two) shareholders and 2 (two) directors were required for registering a private company. Internationally, the concept of one-person company (hereinafter OPC) is very popular. The government of Bangladesh has also introduced this concept of OPC in Bangladesh Jurisprudence and such a company shall be termed as OPC. OPC means and includes a company whose shareholder is a natural person (Companies Act, 1994). The concept of OPC will allow many proprietorship concerns to easily convert their business into a professionalism manner.

A sole proprietorship form of business might seem very similar to one-person companies because they both involve a single person owning the business, but they actually exists some differences between them (Cheffins, 1997). The main difference between the two is the nature of the liabilities they carry. Since an OPC is a separate legal entity distinguished from its promoter, it has its own assets and liabilities. The promoter is not personally liable to repay the debts of the company. On the other hand, sole proprietorships and their proprietors are the same persons. So, the law allows attachment and sale of promoter's own assets in case of non-fulfillment of the business' liabilities.

III. SALIENT FEATURES OF A ONE PERSON COMPANY

The OPC formed and registered under the Companies Act, 1994 has certain special features named as legal and common, which reveal the nature of an OPC are as follow-

- i. **Private Company:** A private limited company in Bangladesh is a separate legal entity and shareholders are not liable for the company's debts beyond the amount of share capital they have contributed. According to the Companies Act 1994, any person (foreign or local) above the age of 18 can register a company in Bangladesh. According to section 2(1) (b) (b) of the Companies Act says that a single person can form a company for any lawful purpose. It further describes OPCs as private companies.
- ii. **Single-Member:** As per the new Amendments, OPCs can have only one member or natural shareholder.

- iii. **Nominee:** A unique feature of OPCs that separates it from other kinds of companies is that the sole member of the company has to mention a nominee while registering the company. Therefore, a shareholder, which is not a natural person (i.e. a company), can select a nominee director on its behalf.
- iv. **No Perpetual Succession:** Since there is only one member in an OPC, his death will result in the nominee choosing or rejecting to become its sole member. This does not happen in other companies as they follow the concept of perpetual succession.
- v. **Minimum One Director:** Minimum two directors are mandatory for a private limited company. Directors can be either local or foreign nationals. Directors must be at least 18 years of age and must not be bankrupt or convicted for any offence in the past. The law requires that a director must own qualification shares stated in the Articles of Association but as per the new amendment OPCs need to have minimum one person (the member) as director.
- vi. **Paid-up Share Capital:** The Companies Act, 1994 has prescribed amount as minimum paid-up capital Tk. 25 (Twenty-five) lakh and maximum Tk. 5 (five) crore for OPCs.

IV. CONDITIONS FOR SETTING UP A ‘ONE PERSON COMPANY’

In order to establish a one-person company (OPC) one need to fulfill certain conditions. These conditions include –Paid up capital shall be at least 25 lakh and not more than 5 (Five) crore. That is, one cannot form OPC unless one has a capital of at least 25lakhs. The newly amended Act also mentioned that Annual turnover must be between Tk. 1crore to maximum Tk. 50crore. If the annual turnover exceeds, then one can convert to a private limited or public limited company subject to fulfillment of conditions. A natural person can only form a one-person company. The memorandum of the company must also mention the name of a nominee who will give his/her written consent to act in the absence (in case of death or incapacity) of the natural shareholder. According to section-11 (a) (c) of the Companies Act (2nd Amendment) 2020 stipulates that “OPC” should be written at the end of OPC. It is important to mention that the provision of this section shall not apply in case NGO and company limited by guarantee (Companies Act, 1994).

V. FORMATION OF ONE PERSON COMPANY (OPC) UNDER THE COMPANIES ACT, 1994

A natural person may, for any lawful purpose, form a one-person company, and if he so desires, may form a limited company by signing his name to the memorandum as an entrepreneur and taking other measures in accordance with the provisions of this Act relating to registration (s. 392 (b), 1994).

5.1 One Natural Person One OPC

A natural person can only form a one-person company (Section 392 (b), subsection 2 of the Companies Act, 1994). As per the new Amendments, OPCs can have only one member or natural shareholder.

5.2 The Memorandum Shall Contain a Nominee

The memorandum of a one-person company shall contain the name of a nominee, with the written consent of the nominee, who shall become the shareholder of the company in the event of the sole shareholder's death or incapacity or incapacity to manage the company (Section 392 (b), subsection 2 of the Companies Act, 1994). The law requires that a director must own qualification shares stated in the Articles of Association but as per the new amendment OPCs need to have minimum one person (the member) as director.

5.3 Written Consent of Nominee and Revocation

At the time of registration of a one person company, the written consent of the nominated person shall be recorded in its memorandum, articles of association and register (Section 392 (b), subsection 2 of the Companies Act, 1994). The person so nominated may withdraw his consent in the prescribed manner (Section 392 (b), subsection 2 of the Companies Act, 1994). If the person so nominated dies before the shareholder or becomes incapacitated or incapacitated for any other reason, any other person may be nominated in place of the person so nominated, with his consent (Section 392 (b), subsection 2 of the Companies Act, 1994).

A shareholder of a company may, if he thinks fit, nominate any other person in place of such nominee, with his consent (Section 392 (b), subsection 2 of the Companies Act, 1994). A change of nominee by a shareholder of an individual company shall be mentioned in the bye-laws and shall be intimated to the Registrar at the prescribed time and manner (Section 392 (b), subsection 2 of the Companies Act, 1994).

VI. REGISTRATION PROCEDURES OF OPC

One-Person Company (OPC) is registered under the Companies Act 1994. The regulatory body for company formation is the Registrar of the Joint Stock Companies and Firms (RJSC), which facilitates the formation of companies. The prerequisites for registering an OPC are as follows.

- i. National ID card or Passport (If the shareholder is a foreign national)
- ii. TIN certificate
- iii. Passport Size picture
- iv. Mobile number
- v. Email address &
- vi. Signature

Step-1 Documents Preparation

Prepare the Memorandum of Association (MoA) and Article of Association (AoA). The company to be incorporated must have its own Memorandum of Association and Articles of Association. Memorandum of Association and Articles of Association: RJSC requires that the object clause in the Memorandum of Association has to be within 400 words and 7 clauses.

Step-2 Name Clearance

To set up an OPC, the first step would be to obtain a name clearance for the proposed company name. In short, first, the intended person must decide on the desired company name and apply for name release on the RJSC server. Upon request, RJSC will receive a computer-generated receipt. Intended person must pay the RJSC the required name release and verification fees. RJSC will provide clearance certificates to prospective promoters. These name release documents serve as the basis for all subsequent company registration processes.

Step-3 Nominee

Any natural person may be nominated as a nominee with his written permission. The same paperwork needed to register the one-person company is also needed for the nominee. The nominee shall be the shareholder of the company if the sole shareholder dies or becomes incapable of running the company. The name of the nominee is required to be registered at the time of registration of the OPC. However, the nominee can withdraw his/her name as a nominee of any OPC. Again, changing the nominee is possible by the shareholder of the OPC by informing the Registrar about such change. The nominee is entitled to the same amount of dividend and other benefits as the deceased shareholder. Such benefits will be followed by similar liabilities of the earlier shareholder. Although there is restriction on a person in forming more than one OPC, a person can be nominee to innumerable OPCs who in the event of death of the sole shareholder may become shareholder of more than one company.

Step-4 Registration of One Person Company (OPC)

On the Registrar of Joint Stock Companies (RJSC) website, one will need to provide all the information, one will also need to upload Form IX and the Subscriber Page. When one has completed all the steps, you will be given a bank payment slip that you can use to pay the government fees and stamp duty.

Step-5 Obtaining as Incorporation Certificate

After completing the registration process, RJSC will provide digitally signed (i) Certificate of Incorporation; (ii) MOA and AOA, and (iii) Form XII. These documents will be sent to the email address registered to your RJSC account.

VII. SHARE CAPITAL OF OPC

The paid-up share capital shall be not less than 25 (Twenty Five) Lakh taka and not more than 5(Five) Crore taka (Section 392 (c), sub-section 1(ka) of the Companies Act, 1994). Annual turnover for the immediate preceding financial year is not less than 1 (One) Crore taka and not more than 50 (Fifty) Crore taka (Section 392 (c), sub-section 1(ka) of the Companies Act, 1994). If the paid-up share capital of a one-person company exceeds the amount specified in clause (a) of sub-section (1) and the annual turnover exceeds the amount specified in clause (b) of sub-section (1), subject to the fulfillment of the necessary conditions, a one person company can be converted into a private limited company or, as the case may be, a public limited company (Section 392 (c), sub-section 1(ka) of the Companies Act, 1994).

VIII. PROCEDURES TO BE FOLLOWED IN CASE OF INCORPORATION OF ONE PERSON COMPANY

The rules applicable to private limited companies shall, with necessary adaptations, apply to registration of one-person companies (Section 392 (d), sub-section 1(ka) of the Companies Act, 1994).

8.1 Director of OPC

The Minimum one director is mandatory. Directors can be either local or foreign. Directors must be at least 18 years of age and must not be bankrupt or convicted for any malpractice in the past. The law requires that a director must own qualification shares stated in the Articles of Association. A shareholder who is not a natural person (i.e. a company) can select a nominee director.

8.2 Appointment of Manager and Employees for OPC

A manager, company secretary and other employees may be appointed for the management of a one person company (Section 392 (e), subsection 2 of the Companies Act, 1994).

8.3 On- Person Company Meeting

As per section 392F, the Director of OPC will call at least one board of directors meeting in every half year. Amendment– As per section 392G, if any changes are made in the Memorandum and Article of Association of the OPC, the Company will notify about such changes to the Registrar of Joint Stock Company (RJSC).A director of an individual company shall hold at least one director's meeting in half a calendar year (Section 392 (f), of the Companies Act, 1994).

8.4 Amendment of Memorandum or Articles of Association of One-Person Company

If any change is made in the memorandum or articles of a one-person company, the Registrar shall be notified in the prescribed manner of such change and the provisions of

section 12 shall, with necessary adaptations, apply (Section 392 (g) of the Companies Act, 1994).

8.5 Transfer of Shares in an Individual Company

As per section 392H, all shares of the OPC can be transferred to any other individuals with natural beings subject to the provision of section 38. All shares in an one person company shall be transferable only to a natural person and the provisions of section 38 shall, with necessary adaptations, apply to the transfer of shares (Section 392 (h), of the Companies Act, 1994).

8.6 Balance Sheet of a One-Person Company

As per section 392I, in the case of OPC, within 160 days of the end of a financial year, its financial statements must be submitted to the Registrar. Each balance sheet consists of the profit and loss or income and expenditure and signed by the Director. Therefore, one person company, its financial statements must be attached to the Registrar within one hundred and eighty days of the end of the financial year (Section 392 (i), of the Companies Act, 1994). Every balance sheet and every profit and loss account or income and expenditure account shall be signed by the sole shareholder director of the company (Section 392 (i), of the Companies Act, 1994).

8.7 Audit of One Person Companies

The relevant provisions of this Act shall, with necessary adaptations, apply with respect to appointment of auditors and audit reports in one person companies (Section 392 (j), of the Companies Act, 1994).

8.8 Borrowing and Repayment by a One-Person Company

The provisions of Sections 159 to 175, mutatis mutandis, shall apply to the borrowing or repayment of loans from any bank or financial institution by a one-person company (Section 392 (k), of the Companies Act, 1994).

8.9 Voluntary Winding Up of One Person Company

In the case of voluntary winding up of a one person company the relevant provisions of this Act shall, with necessary adaptations, apply (Section 392 (i) of the Companies Act, 1994).

IX. NEWLY FORMED ONE PERSON COMPANY IN BANGLADESH

Bangladesh's company registrar has approved first three "One Person Company" under a new business –ownership model that is expected to lure investments from home and abroad. The new generation OPCs registered with the Registrar of Joint Stock Companies and Firms (RJSC) are- JR Aviation Services OPC, Boalia Services OPC, and Akkas Uddin Mollah OPC (Haroon, 2021).

JR Aviation Services OPC is the first entity incorporated as OPC in Bangladesh. Rajib Ahmed Bhuyan, the owner of JR Aviation Services OPC explains why and what for he opted for transmutation of his business proprietorship. The OPC system will better facilitate my business” he says (Haroon, 2021). The Office of the Registrar of Joint Stock Companies and Firms (RJSC) show that only 172 businesses have been registered as OPCs as of September 2022 – a very insignificant number when compared to the number of 12,500 newly-registered public and private limited companies (Karim, 2022).

X. ADVANTAGES OF OPC

A one-person corporation was introduced, which has improved the circumstances on which entrepreneurs can conduct business. The only way to assure that a business and its owner are distinct legal entities today is to incorporate the business (Davies, 2020). In this manner, the entrepreneur's liability is constrained to his firm stock. Additionally, converting from a sole proprietorship to a one-person corporation could help you expand your firm because banks may be more willing to grant credit facilities to businesses than to sole proprietors. An OPC seems perfect for small firms looking for the legal protection because it has a minimal statutory paid up capital requirement. In brief, flowing are the advantages of OPC.

10.1 Incorporation is Simple and Having Fewer Formalities

OPC can be incorporated easily because just one member and one nominee are required. Branding: One-person Company will have the opportunities to make positive branding even if operated by one person.

10.2 No Personal Clash in Case of Running

OPC gives a person to run a company individually. In many instances it is seen that because of personal ego and clash, a company fail to perform properly. Running a private company involves many legal issues. In particular, it is important to protect the interests of minority shareholders, as majority shareholders typically control the business. In some cases, litigation disrupts corporate activities.

10.3 Indefinite Succession

Even though the company is formed by one person, the law keeps the option for nominee as such it is possible for OPC to remain indefinite succession. The aspect of advantageous position of OPC is that the banker will be keener to give banking facilities to OPC.

10.4 Encouragement for Young Entrepreneur

To pursue the vision of becoming a sole proprietorship in Bangladesh, the Bangladesh government opened its doors to all. OPC offers all the advantages to entrepreneur as such young entrepreneur will be more encouraged.

10.5 Good Opportunities for Foreign Investors

It is expected that many foreign companies to start up as OPCs as they struggle to find the right people to set up new businesses in Bangladesh (The Financial Express report 2021). In the past many foreign companies have been unable to set up successful ventures in Bangladesh as there is no provision in the Company Law to set up an OPC.

XI. CHALLENGES OF OPC

The issue of high paid up capital may not attract a potential entrepreneur to be listed with the authorities. Minimum capital limit is considered the most upsetting features in OPC registration. The minimum paid up- capital for incorporating OPC should be kept open. Most countries have no minimum capital requirements. Countries such as India, Pakistan and Nepal have a minimum OPC capital requirement of Rs. 100,000 in their respective currencies (The daily report of Financial Express 2021). Banks are taking public money in that case high range of paid up capitals are required.

The issue of high corporate tax may not attract a potential entrepreneur to be listed with the authorities. The Government of Bangladesh has fixed the corporate tax 22.5 percent for the OPC (Haroon, 2021).

RJSC opened registration of OPC for the interested firms on 23 May 2021. So far, not a single company has applied for One Person Company (OPC) registration with RJSC (Registrar of Joint Stock Companies and Firms) a month and a half after the start of the entrepreneur registration process (The daily report of Financial Express 2021).

XII. ARTICLE'S OF THE COMPANY LIMITED BY SHARES IN CASE OF DEATH OF ONLY ONE MEMBER OF A OPC

According to Schedule-9 B 1(a) of the Companies Act, 1994 stipulates in case only one member of an OPC the person nominated by such member shall be recognized by the company as entitled to all of his shares. The company shall inform the Registrar about acquiring all shares by the nominated person due to the death of the only member. The Nominated person shall be entitled to divided and similar other rights and similarly liable like the only deceased member (Schedule-9 B 1(b) of the Companies Act, 1994). The nominated person after becoming member will nominate another person with his written consent who will be the member of the company after his death (Schedule-9 B 1(C) of the Companies Act, 1994).

Upon according consent by the only member to any proposed decision over any issue and on recording of that decision in the preserved minute's book, the same shall be treated as accepted (Schedule-9 B 2(A) of the Companies Act, 1994). The minute's book shall be signed by the only member and the date should be given Schedule-9 B 2(B) of the Companies Act, 1994). The said decision shall be effective from the date of signing the minutes by the only member Schedule-9 B 2(C) of the Companies Act, 1994).

XIII. LIMITATIONS OF OPC

In Bangladesh, one natural shareholder will not be permitted to operate more than one OPC (Section 392 b (2) of the Companies Act, 1994). In the case of capital limitation on OPC that the paid-up share capital of OPC is required to be at least 2.5 million taka and not more than 50 million taka. Such capital requirement provision has been widely criticized because the typical small and medium enterprises do not have such high amount of capital. India provides for an affordable amount of capital requirement to establish OPC. They ask that paid up capital will not be less than one hundred thousand Indian rupees and not more than five million Indian rupees. The government of Bangladesh can reconsider this provision and lower the ceiling for the paid-up capital between Tk.2 million and Tk.50 million.

In addition, the annual turnover of OPC needs to be at least 10 million taka and not more than 50 million taka for the immediately preceding financial year. If a person owns the paid-up share capital of a company exceeding the said amount and the annual turnover exceeding the amount mentioned, then subject to some conditions, OPC 'may be' converted into a private limited company or, a public limited company. While the Bangladeshi law on this point takes a soft law approach, the Indian law speaks on a 'shall' language and makes it mandatory for OPCs exceeding the limit to be converted to either private or public company. In addition, there is no sanction against an OPC in Bangladesh if it does not convert itself after exceeding the limits.

XIV. CONCLUSIONS AND RECOMMENDATIONS

The introduction of one-person company system will create a great interest in domestic and foreign investment by expanding the country's business and trade and creating an investment-friendly environment. OPC as a business vehicle has been introduced in Bangladesh as a major entrepreneurial boost. However, it also has the potential to be 'Frankenstein Incorporated'. The OPC was targeted at domestic entrepreneurs.

The challenges of OPC are high paid up capital and high corporate tax restrictions may restrain OPC's smooth functioning. Even though the amounts of paid up capital and turnover exceed these restrictions, the OPCs shall have to be registered as a private or public limited company. These legal restrictions may restrain OPC's smooth functioning. The fact that only 3 OPCs have been registered after one year of legal enactment is a testament to the challenges involved in an OPC. OPC is still a newborn venture, the best practices are yet to be developed. It remains to be seen how the gray areas in law will be put into practice.

This study suggests that imposes on capital restrictions should be reformulated for the expansion of OPC, and the corporate tax rate of the OPC needs to be reduced. If the challenges and difficulties are eradicated, then OPC will be the great tool for boosting investment in our country.

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Predictive Analysis on Start-Up Growth in North Zone with Reference to India

K. MARAN¹ & HARIKUMAR PALLATHADKA²

ABSTRACT

The study explores the significant growth of the start-up ecosystem in North India, particularly focusing on states and union territories such as Himachal Pradesh, Haryana, Punjab, Jammu and Kashmir, Uttar Pradesh, Uttarakhand, Delhi, Rajasthan, Chandigarh, and Chhattisgarh. The research highlights the essential role of start-ups in economic development, addressing social problems, and creating employment opportunities. Utilizing secondary data from government bulletins, economic reports, research articles, journals, and magazines, the study analyses the growth trajectory of start-ups from 2016 to 2022 and forecasts trends up to 2027. Findings indicate a dramatic increase in start-up numbers, from 170 in 2016 to 4561 in 2022, despite a temporary decline in 2022 due to reduced foreign investment confidence. The study predicts a resurgence, estimating 9909 start-ups by 2027, driven by supportive government policies and initiatives. Key challenges such as access to funding and regulatory complexities are also discussed, underscoring the need for continuous efforts to sustain and enhance the region's entrepreneurial ecosystem.

Key Words: Start-ups, Innovation, North India, Economic Development, Government Policies, Entrepreneurial Ecosystem, Trend Analysis.

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I. INTRODUCTION

A distinguishing characteristic of a start-up is its strong focus on innovation. Start-ups aim to innovate and introduce novel ideas that have the potential to revolutionise established industries or create entirely new ones. Start-ups, in contrast to typical businesses, are specifically created to identify and address unmet needs and pain spots instead of making little changes to existing products and services. A start-up serves as the fundamental framework for fostering the innovation and expertise necessary to discover social problems, address them effectively, and use the solutions for the betterment of communities. The key factors that drive success in every start-up are the presence of the right individuals, the appropriate concepts, and the right target market. These elements serve as potent catalysts for igniting companies in a highly competitive business landscape. Conducting research is a crucial step towards achieving success in a company. Therefore, the start-up team must engage in extensive market research to gather information about existing products and their technology. It is also vital to determine the actual demand for the product and conduct a cost analysis. In addition, market research is an essential component of a firm, requiring the team to analyse macro and micro level market analysis, trends, and future requirements (Maran, 2024).

The start-up ecosystem thrives on the drive and ambition of young individuals in industrialised nations. Their systems play a crucial role in fostering the growth of digital start-ups in China and India, which in turn contribute to the country's economy and jobs. Additionally, this ecosystem also has a positive impact on other developed and developing countries.

A start-up fosters additional avenues for individuals with expertise in design, problem-solving, and innovation to produce distinctive technologies, goods, and services that benefit society, thus contributing to the expansion of employment prospects for middle-class and skilled workers. When starting a new business, it is essential for the founder to possess specific qualities and attributes. These include a high tolerance for risk, the ability to bounce back from setbacks, self-discipline, creativity, open-mindedness, humility, critical thinking skills, the willingness to challenge others, strong interpersonal skills, moral integrity, and unwavering determination. These traits form the foundation for a start-up's success. In addition, the success of a business founder hinges on a blend of aptitudes, mentality, and opportune timing. Satish (2020) conducted a study that specifically examined the innovation and present viability of Indian SMEs. The study found that Small and Medium-scale Enterprises in developing nations have a tendency to remain small or decrease in size, in contrast to their counterparts in industrialised economies, which see significant growth. Small and medium-sized enterprises (SMEs) make a significant contribution to economic growth and consistently generate employment opportunities. Indian SMEs possess significant potential and are capable of competing with their overseas counterparts. However, it is apparent that they are falling behind in terms of

growth. Market demand drives these businesses more often than they produce unique products. Implementing innovative practices in small and medium-sized enterprises (SMEs) has the potential to significantly enhance the sector and elevate Indian SMEs to the same level as those in industrialised nations. In order to achieve success as a start-up, it is essential to have certain crucial elements in place. First and foremost, a robust founding team is important. Successful start-ups necessitate a broad spectrum of talents and expertise, and the founding team should consist of individuals who possess complementary abilities. In addition, it is crucial for the founding team to possess a strong enthusiasm for the product or service they are developing and demonstrate unwavering dedication to ensuring the venture's success.

II. START-UP GLANCE AT NORTH ZONE

The start-up ecosystem in North Indian states is experiencing substantial growth, characterized by a surge in entrepreneurship and innovation across various sectors. With the support of favorable government policies and initiatives, start-ups in technology, e-commerce, fintech, agritech, and manufacturing are flourishing. The establishment of incubation centers, co-working spaces, and accelerators has significantly improved the infrastructure necessary to nurture start-ups. Cities such as Delhi-NCR, Gurugram, Jaipur, and Lucknow have emerged as vibrant start-up hubs, attracting talent and investment. Despite this progress, challenges like access to funding and regulatory complexities remain, requiring ongoing efforts to sustain and enhance the region's entrepreneurial ecosystem. Overall, North India presents a promising landscape for start-ups, marked by dynamic growth and a supportive environment for innovation and business development.

III. REVIEW OF LITERATURE

Lounsbury (2018). Innovation and entrepreneurship lie at the heart of the modern economy. Yet, while scholars have long examined the economic drivers of innovation and entrepreneurship, less is known about the cultural forces that shape these dynamics. To the extent that the existing literature has considered how culture shapes innovation and entrepreneurship, it has been viewed as a constraining force that limited and hindered the creation of novelty. This is especially true for economic approaches to entrepreneurship and innovation. With this special issue, we highlight the central role of culture in entrepreneurial and innovative practice—what we refer to as cultural entrepreneurship—and advocate that scholars need to take a broader view of culture to emphasize the symbolic meaning systems that entrepreneurs use as tool kits to facilitate their pursuit of novelty. This article discusses how the articles of this special issue employ such contemporary approaches to culture, contributing to the development of an exciting scholarly agenda. By drawing on a variety of empirical settings and methodologies, these articles generate novel and provocative insights about cultural entrepreneurship. Leveraging these contributions, we highlight possible future paths and research questions.

Cohen et al (2019). The design of start-up accelerators. *Research Policy*, 48(7), 1781-1797. Accelerator programs have become crucial in entrepreneurial ecosystems, and although they share common features such as fixed-term, cohort-based programs, they exhibit significant variations. This study explores the relationship between these program variations and theories of firm-level entrepreneurial performance. By analysing the design and performance of start-ups attending accelerator programs, the study identifies the building blocks for future research in the field. These findings not only advance our understanding of accelerators but also contribute to our understanding of what new ventures need to succeed.

Maran and Harikumar (2024). Start-ups are often new enterprises that are still in the process of developing their products and conducting research on the market. India gained more than 1,300 active digital firms in the last year, bringing the country's total to somewhere between 25,000 and 27,000. India continues to have the third-largest tech start-up ecosystem in the world, after the United States and China. There is a pressing need for institutions to concentrate their efforts on the minds of young people in order to raise awareness of start-ups and the implications of start-ups for the expansion of the economy. The objectives of study to determine the rate of growth experienced by technology start-ups and to investigate the effects that new technology businesses have had on employment and the economies of India and China. This study has mostly concentrated on exploratory research and has made use of secondary data in order to determine the number of unicorn start-ups. In India the government initiating several schemes and policies for encouraging and promoting new start-up and innovators for sustaining the country economy in global market, like China government initiated various promotional schemes to increase more number of start-up in their country. Based on the analysis India start-ups are steeply increased and it's a proud moment which stood one of the third largest countries in global start-up index.

IV. PROBLEM STATEMENT

A Start-up is a crucial factor for any developing country, in this respect, India has initiated start-up programs in terms of key policies and encouraging youth minds to innovate technology and digital-based products for the world community. Various educational institutions and government industry promotions are constantly supporting new start-up promotions in India. The researcher has analysed north zone states in India namely Himachal Pradesh, Haryana, Punjab, Jammu and Kashmir, Uttar Pradesh, Uttarakhand, Delhi, Rajasthan, Chandigarh and Chhattisgarh. In the north zone in 2016, the number of start-ups was established only 170 which is gradually increased to 4561 in the year 2022. The progress of start-ups in various states and union territories, New Delhi start-up initiatives are very high followed by Uttar Pradesh during the study period. In this respect,

the researcher has attempted to analyse start-up growth in north zone states and union territories in India and also the importance of start-ups, the study has to be forecasted till 2027 which indicates the number of new start-up possibilities established in India with the state and central government policies schemes and support.

V. OBJECTIVES OF STUDY

1. To analyse the start-up growth rate of North Zone States in India.
2. To identify the start-up forecast in North Zone States in India.

VI. METHODOLOGY

Research methodology is a structured and scientific approach used to collect, analyse and interpret the data for the research problem. The researcher has adopted desk research techniques and used secondary data that is published information from government bulletins, departments for industry and promotions start-up etc. for the analyses purpose, the period of study used 7 years from 2016 to 2022, based on the data there searcher has predicted future trends and growth of start-up between 2023 and 2027 in the selected north zone states like Himachal Pradesh, Haryana, Punjab, Jammu and Kashmir, Uttar Pradesh, Uttarakhand, Delhi, Rajasthan, Chandigarh and Chhattisgarh. The researcher has applied regression statistical methods to forecast the feature trends and growth of start-ups in the study areas.

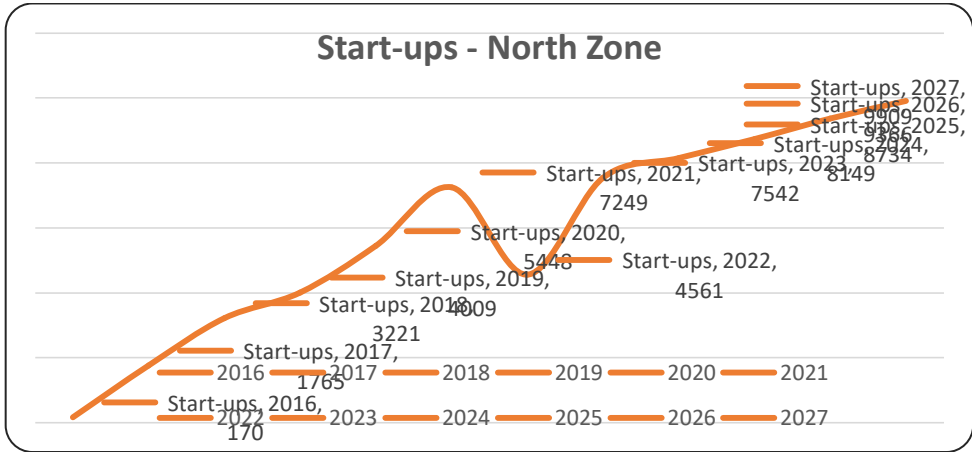
VII. RESULTS AND DISCUSSIONS

The data in Table 1 shows the start-up growth performance in the North zone. The start-up counts in the North Zone exhibited a significant upward trend during this period, starting with 170 start-ups in 2016 and increasing to 7249 in 2021, marking a substantial growth of 42 times. In 2022, there was a slight decline in the number of start-ups compared to the previous year, with the count dropping to 4561, indicating a decrease of approximately 37.09% from the previous year 2021. The forecasted numbers for the years 2023 to 2027 suggest a resurgence in start-up growth in the North Zone, with the number of start-ups expected to rise each year. By 2027, the projected number of start-ups is estimated to reach 9909, reflecting a forecasted increase of approximately 117.25% from the year 2022.

**TABLE 1
START-UP GROWTH PERFORMANCE IN THE NORTH ZONE OF
INDIA**

Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Start-ups	170	1765	3221	4009	5448	7249	4561	7542	8149	8734	9366	9909

FIGURE 1 START-UPS IN NORTH ZONE OF INDIA



The progress of start-ups in various states and union territories, New Delhi start-up initiatives are very high followed by Uttar Pradesh during the study period. In this respect, the researcher as attempted to analyse start-up growth in north zone states and union territories in India and also the importance of start-ups, the study has to be forecasted till 2027 which indicates the number of new start-up possibilities established in India with the state and central government policies schemes and support (Figure 1).

The Table 2 given above showcases the start-up growth for the North zone from 2016-2022 and the forecasted start-up numbers and growth from the year 2023-2027. In Chandigarh, the start-up ecosystem witnessed a surge from 9 start-ups in 2016 to 69 in 2021, showcasing an impressive annual growth rate of about 50.33%. However, 2022 saw a downturn with a decline of approximately 46.38%, dropping to 37 start-ups. Despite this setback, a forecast suggests a rebound with an anticipated growth rate of around 10.81% from 2022 to 2027, aiming to reach 82 start-ups by 2027.

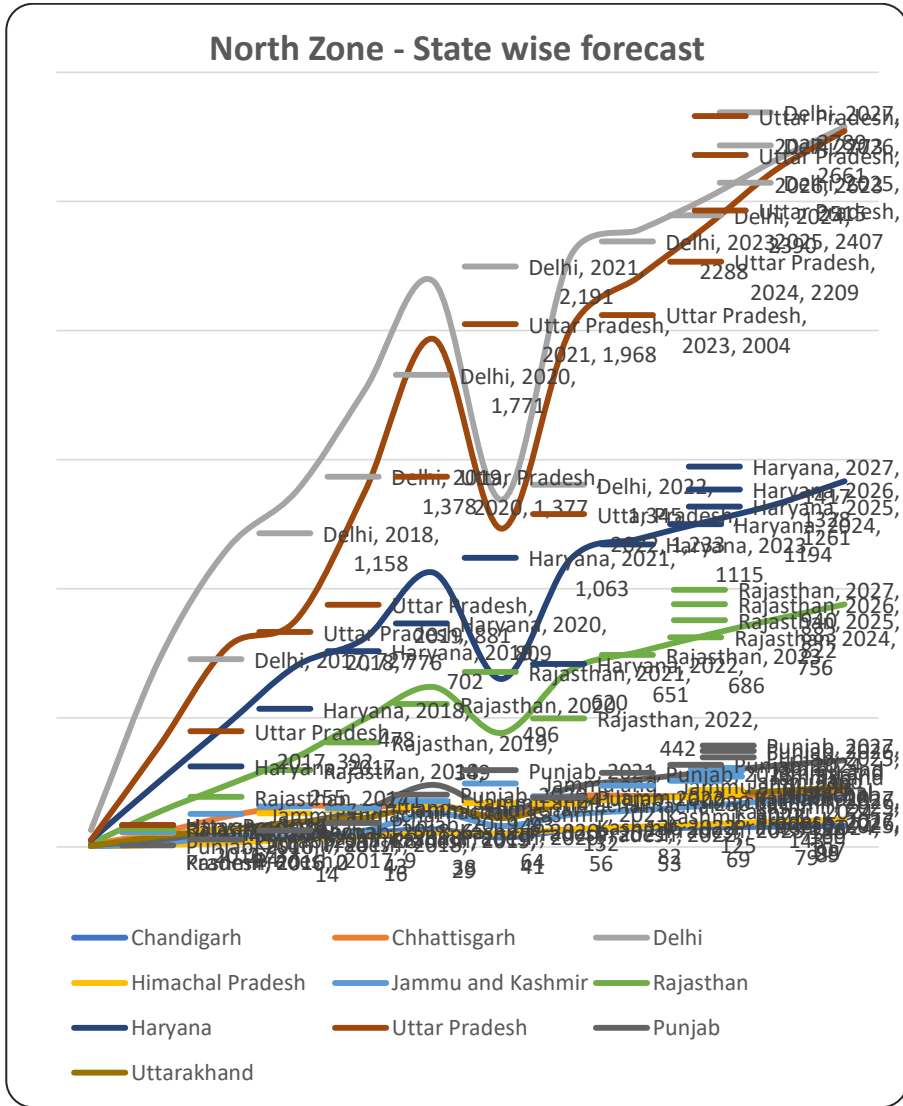
The next state from North zone, Chhattisgarh's start-up scene experienced steady growth, averaging about 29.09% annually until 2021, surging from 11 start-ups in 2016 to 166 in 2021. Yet, there was a slight decline of approximately 28.92% in 2022, reducing to 118 start-ups. However, the forecast reveals an estimated growth rate of approximately

83.05% from 2022 to 2027, envisioning 217 start-ups by 2027, reflecting renewed growth potential and opportunities.

TABLE 2
NORTH ZONE STATE-WISE FORECAST - FROM 2023 TO 2027 USING TREND ANALYSIS

Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Chandigarh	9	22	26	40	54	69	37	66	71	76	79	82
Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Chhattisgarh	11	56	119	160	154	166	118	194	198	197	202	217
Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Delhi	66	727	1,158	1,378	1,771	2,191	1,345	2288	2390	2515	2661	2789
Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Himachal Pradesh	0	9	16	29	41	56	53	69	79	89	98	107
Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Jammu and Kashmir	2	14	43	38	64	132	82	125	143	160	180	193
Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Rajasthan	14	137	241	349	496	620	442	686	756	822	883	940
Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Haryana	27	255	478	702	809	1,063	651	1115	1194	1261	1328	1417
Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Uttar Pradesh	27	392	776	881	1,377	1,968	1,233	2004	2209	2407	2623	2773
Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Punjab	7	28	65	93	146	241	136	230	262	290	316	336
Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Uttarakhand	4	43	69	97	114	162	112	173	187	202	217	233

FIGURE 2 START-UPS IN NORTH ZONE OF INDIA



Delhi's start-up ecosystem flourished, witnessing a remarkable rise at an impressive average annual growth rate of about 63.94% until 2021, skyrocketing from 66 start-ups in 2016 to 2,191 in 2021. However, there was a setback in 2022 with a decline of around 38.59%, dropping to 1,345 start-ups. Nevertheless, an optimistic forecast suggests a robust growth rate of approximately 107.02% from 2022 to 2027, aiming to reach 2,789 start-ups by 2027. Himachal Pradesh's start-up landscape showcased modest yet consistent

growth, averaging about 52.88% annually until 2021, ascending from 0 start-ups in 2016 to 56 in 2021. However, there was a slight decline of about 5.36% in 2022, reducing to 53 start-ups. Despite this, the forecast anticipates an estimated growth rate of around 104.72% from 2022 to 2027, targeting 107 start-ups by 2027 (Figure 1).

Jammu and Kashmir had an average annual growth rate of about 50.80% until 2021, climbing from 2 start-ups in 2016 to 132 in 2021. However, there was a setback in 2022 with a decline of around 37.88%, dropping to 82 start-ups. The forecast predicts an impressive growth rate of approximately 135.37% from 2022 to 2027 with 193 start-ups estimated by 2027.

Rajasthan witnessed significant growth in its start-up ecosystem, with an average annual growth rate of about 50.99% until 2021, escalating from 14 start-ups in 2016 to 620 in 2021. However, there was a decline of approximately 28.39% in 2022, dropping to 442 start-ups. Despite this setback, a promising forecast anticipates a resurgence with an estimated growth rate of around 110.20% from 2022 to 2027, aiming to reach 940 start-ups by 2027.

VIII. CONCLUSIONS

Innovation and ecosystem are the bases for new technology development, unique technology is formed in the shape of start-ups which creates more economic and employment opportunities for the country besides, the start-up exhibits talent, skill set, and unique products in the society. The researcher has attempted to analyse north zone states and union territories in India. Among the states, in 2016 the total number of start-ups was 170 and the growth performance of start-ups has steeply increased to 4561 in the year 2022, due to the new start-ups the state's economy is growing and the number of employment is slightly increasing, as part of the research the trend analysis shows the positive number of start-ups which would up to 9909 in the year 2027. The above results will be possible based on favourable start-up environments, policies, guidelines and financial incentives supported by the central and state government.

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