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Metalwork Technology Training Needs of Youths in Bariga Local Council Development Area (LCDA) in Lagos, Nigeria

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Abstract

The main purpose of the study was to explore and describe the metalwork technology education training needs of youths in Bariga Local Council Development Area (LCDA) of Lagos State, Nigeria. Specifically, the researchers sought to; describe their demographic characteristics, examine their metalwork technology training needs, the influence of gender on the metalwork technology training needs, and also identify problems associated with their metalwork technology training needs. The instrument used for the study was a 20-item questionnaire, which was constructed by the researcher and validated by experts from Metalwork Technology Education Department and Science Education Department of Federal College of Education (Technical) Akoka, Yaba and Yaba College of Technology. Data collected were analyzed using frequency and percentage statistical tools. The paper concluded that training and retraining of youth in metalwork technology in Nigerian and Africa in general is a collective effort of both government and non-governmental organization such as UNESCO, World Bank, and industries. Finally recommendations were made in other to meet the metalwork technology training need of youth in Bariga Local Council Development Area (LCDA) in Lagos State, Nigeria.

Keywords: Metalwork technology, youth, training need, Local Council Development Area (LCDA)

Classification: Empirical Paper.

Introduction

According to [Seiders, 2015](#) "Youths represent the future and hope of every country. The high returns on resources invested in youths today have both immediate and long term benefits. Where they existed and are functioning well, youth programmes play an important role in building life skills of individual young people, strengthening families and communities, and working towards sustainable development as a major contributor to the overall progress of a country. Many countries have realized that the development and harnessing the potential of the youths can best be achieved through a sound educational system". In Nigeria for instance, the training given to youths at the secondary school level is both pre-vocational and academic. According to the National Policy on Education [NPE, 2004](#), the aim of secondary school is to make a person to be productive to himself and the society. Academic and vocational courses are offered at the Junior Secondary School (JSS) level. These courses are suppose to provide definite purpose and meaning to education by relating to occupational goals, provides technical knowledge and work skills necessary for employment, and develop abilities, attitudes, work habits and appreciation which contributes to a satisfying and productive life. [Abdullahi, 2017](#) states that vocational education is expected among other things to assist students to acquire relevant occupational and technical skills, prepare for future occupations, and make successful transition from school to world of work. However, according to Bello, Danjuma & Adamu (2007) it is very disturbing to observe that most of our graduates at both the Junior Secondary Schools (JSS), Senior Secondary Schools (SSS), Technical Colleges and other training centres do not further their studies and still stay without job. Despite the fact that the training at JSS level was target at preparing this group of youths with both academic and vocational skills that would make

them become self-reliant and also, prepare them for further studies. What then was the problem? Was it that these youths have not been given the adequate training that would enable them identifying their needs, so that they can initiate and pursue available vocation? What are the problems that are militating against the efforts being made to help the youths become self-reliant and useful to the society? This study attempts to find out answers to some of these questions.

The prevailing global trend requires the training of individuals for better performance. Mills (2018) commented that in this technological age, training is essential for proper industrial development at all levels. A highly trained vocational and technical educator will be capable of imparting knowledge and training to unskilled youths to be absorbed in the industries. The best form of human empowerment is by ensuring that each citizen is educated and trained in technical and vocational skills to be able to produce goods and services for national development. Stressing the benefit of Technical Vocational Education, UNESCO & ILO (2002) posit that education and skills formulation lead to less unemployment and more equity in employment. The economy and society at large like individuals and enterprises benefit as well. The economy becomes more productive, innovative and competitive through the existence of more skilled human potentials.

Metalwork Technology is the totality of all the process involved in the production of metal articles. These areas include fitting and machining of mechanical production, which deals with the use of machine tools or hand tools to produce metal components, fabrication which deals with working with sheet metal to produce fabricated metal component and articles like funnels, water can containers for putting beverages and others, welding which is concerned with joining two or pieces of metal together with the aid of heat and welding rod, foundry which deals with casting of metals into various shapes, forging which is the process of heating metal pieces to certain temperature and hammered to required shape. According to Aluwong, E. B. (2004) Fitting and machining of mechanical production which deals with the use of machine tools or hand tools to produce fabricated metal components and articles like funnels, water cans, containers for putting beverages and others welding, which is concerned with joining of two or more pieces of metal together with the aid of heat and welding rod; Foundry which deals with casting of metals into various shapes forging which is the process of heating metal pieces to a certain temperature and hammered to a required shapes.

Yusuf, (2001); observed that the beneficiaries of metalwork technology education pass through institutions without mastering the skills that will scale them through the labor market successfully. With the low level of skill acquisition there is great fear of failure that prevents an Individual from venturing into unfamiliar grounds. Ezewu, (2012); also observed that the practical training given to metalwork technology students may not be sufficient for them to become self-reliant, he claimed that what we are practicing now is for examination purpose to attain a certificate of education.

Literature review

Statement of the Problem

The total youth population in the world today is estimated to be about 1,500 million and is projected to grow to 2 billion by the year 2050 ([Seiders, 2015](#)). He also states that the total number of youths will remain greater in rural areas over the next ten to fifteen years; all future growth in number of youth will be in the cities. Going by what is happening and considering the rate at which the youths in Nigeria are graduating at both senior Secondary schools and tertiary institutions levels in Nigeria, a high percentage of them are doing nothing in terms of being engaged in vocations or trades that could earn them a living and preventing them from becoming a menace in the society, one will start to wonder what is going to happen in the future. Experience has shown that some of the graduates of both the both Senior Secondary schools and tertiary institutions levels are jobless. Therefore, they become liability to both their parents and the society. Some engage in vices that are detrimental to themselves and the society. However, efforts have been made by the government and some Non Governmental Organizations (NGOs) to address some of these problems through setting up training centers and

programmers which some youths undergo in order to become self-reliant. Despite these efforts the problem is becoming very persistent among our youths as their population is increasing. According to M. I. Bello; I. M. Danjuma & A. Y. Adamu (2007) probably most of these programmers that were targeted at our youths of the secondary school level age group and tertiary institutions have not been based on sufficient data from empirical studies on their specific needs and aspirations. As such there is the tendency that such laudable programmers may not be able to adequately address the problems of this group of youths in the society. It is against this background that this study examines the metalwork training needs of youths in Bariga Local Council Development Area (LCDA) in Lagos State. In the recent times, the Ministry of Education through the National Board for Technical Education (NBTE) enhanced the scope of TVET by granting approval for the establishment of 99 Vocational Enterprise Institutes (VEIs) and Innovation Enterprise Institutions (IEIs) to complement ongoing efforts of the conventional TVET institutions in Nigeria (NBTE, 2011; Oweh, 2013; Ladipo et al., 2013).

Objectives of the Study

Based on the foregoing, this empirical paper is premised on four objectives. The study sought to achieve the following objectives:

- (1) Describe the demographic characteristics of youths in Bariga Local Council Development (LCDA) Area in Lagos State.
- (2) Examine the metalwork technology training needs of youths in Bariga Local Council Development Area (LCDA) in Lagos State.
- (3) Examine the influence of gender on the metalwork technology training needs of youths in Bariga Local Council Development Area (LCDA) in Lagos State.
- (4) Identify the problems associated with youths metalwork technology training needs in Bariga Local Council Development Area (LCDA) in Lagos State.

Research Questions

The following research questions were investigated:

- (1) What are the demographic characteristics of the youths in Bariga Local Council Development Area (LCDA) in Lagos State?
- (2) What are the metalwork technology training needs of youths in Bariga Local Council Development Area (LCDA) in Lagos State?
- (3) How does gender influence metalwork technology training needs of youths in Bariga Local Council Development Area (LCDA) in Lagos State?
- (4) What are the problems associated with the metalwork technology training needs of youths in Bariga Local Council Development Area (LCDA) in Lagos State?

Research Methodology

Research Design

The study is a survey research. A survey research is a research that employs the study of large and small population by selecting and studying sample chosen from the population to discover the relative incidence, which by impact can easily serve as a forecaster and predictor ([Olaitan, Ali, Eyoh and Sowande, 2019](#)). In this study, the metalwork technology training needs of youths in Bariga Local Council Development Area (LCDA) in Lagos were examined and described.

Area of the Study

The area of the study was Bariga Local Council Development Area (LCDA) in Lagos State, Nigeria.

Population

The population of the study comprises of 250 youths in Bariga Local Council Development Area in Lagos State.

Sample and Sampling Technique

A total of 250 youths in Bariga Local Council Development Area(LCDA) in Lagos state participated in the study. The study was aimed at describing the metalwork technology training needs of youths in Bariga Local Council Development Area (LCDA)in Lagos State. Hence the need to employ a sampling method that would ensure a proper representation of the larger population of the youths was necessary.

Research Instrument

For the purpose of this research, one instrument was developed and used by the researchers. That is a 20-item Metalwork Technology Training Needs Questionnaire (MTTNQ). The questionnaire sought demographic information on the participants such as sex, age, marital status, educational status, employment status and agency where training was acquired, which describes the characteristics of the youths. It also sought other information such as preferred metalwork technology training needs and the problems usually faced when receiving training. The Metalwork Technology Training Needs Questionnaire was validated by experts from School of Technical and Science Education, Federal College of Education (Technical) Akoka, Yaba, Lagos.

Method of Data Analysis

The data collected was analyzed using frequency and simple percentage to answer the research questions raised.

RESULTS AND INTERPRETATION

Research Question One: *What are the Demographic Characteristics of the Youths in Bariga Local Council Development Area in Lagos state?*

Table 1: Frequencies and Percentages of Demographic Characteristics of Youths in Bariga Local Council Development Area (LCDA) in Lagos State (n = 250)

Demographic Characteristics		Frequency	Percentage (%)
Sex			
	Male	230	92%
	Female	20	08%
	Total	250	100%
Age of respondent			
	15-19 years	33	13.2%
	20-24 years	50	20.0%
	25-29 years	75	30.0%
	30-34 years	55	22.0%
	35- 39 years	27	10.8%
	40 years and above	10	4.0%
	Total	250	100%
Educational qualification of respondent			
	First School Leaving Certificate	22	8.8%
	SSCE/GCE	46	18.4%
	ND/NCE	75	30.0%
	HND	25	10.0%
	Bachelor	45	18.0%
	Others	37	14.8%
	Total	250	100%
Status of respondent in TVET Institution			
	Trained and Employed	97	38.8%
	Trained and Unemployed	88	35.2%
	Untrained and Unemployed	65	26.0%
	Total	250	100.0%

Table 1 shows that 92.0% and 8.0 % of the respondents were male and female respectively, 13.2%, 20.0%, 30.0% and 22.0% of the respondents were in the age group of 15 – 19, 20 – 24, 25 – 29 and 30 -34 years old. The percentages of single, married, divorced and widowed respondents were 48.0%, 32.0%, 14.0% and 6.0% respectively. 8.8%, 18.8%, 30.0%, 10.0%, 18.0% and 14.8% of the respondents had First School Leaving Certificate, SSCE/GCE, OND/NCE, HND, Bachelor and Others respectively. 38.8% of the respondents were trained and employed, 35.2% were trained and unemployed and 26.0% were untrained and unemployed.

Research Question Two: *What are the Preferred Metalwork Technology Training Needs of Youths in Bariga Local Council Development Area (LCDA) in Lagos State?*

Table 2: Frequencies, Percentages and Ranking of Preferred Metalwork Technology Training Needs of Youths in Bariga LCDA in Lagos State (n = 250)

S/no	METALWORK TECHNOLOGY TRAINING AREA	FREQUENCY	PERCENTAGE	RANK
1	Fabrication	50	20.0%	1 st
2	Machining	48	19.2%	2 nd
3	Panel beating	45	18.0%	3 rd
4	Welding	45	18.0%	3 rd
5	Forging and Foundry	25	10.0%	5 th
6	Heat treatment	15	6.0%	6 th
7	Gold Smith	12	4.8%	7 th
8	Casting	10	4.0%	8 th

From Table 2, the most preferred metalwork technology vocation or area is fabrication with 20.0%, the second preferred metalwork technology vocation or area is Machining with 19.2%, the third preferred metalwork technology vocations or areas are panel beating and Welding with 18.0% respectively. The fourth preferred metalwork technology vocation or area is Forging and Foundry with 10.0%, the fifth preferred metalwork technology vocation or area is Heat treatment with 6.0%, while the sixth and seventh preferred metalwork technology vocations or areas are Gold Smith and casting with 4.8% and 4.0% respectively.

Research Question Three : How does gender influences metalwork technology training needs of youths in Bariga Local Council Development Area (LCDA) in Lagos State?

Table 3: Frequencies and Percentages of Preferred Metalwork Technology Training Needs of gender in Bariga Local Council Development Area (LCDA) in Lagos State (n = 250)

METALWORK TECHNOLOGY TRAINING AREA	Male Frequency	Female Frequency	Male Percentage	Female Percentage
Fabrication	47	3	18.8%	1.2%
Welding	43	2	17.2%	0.8%
Machining	43	5	17.2%	2.0%
Heat treatment	13	2	5.2%	0.8%
Forging	23	2	9.2%	0.8%
Casting	7	3	2.8%	1.2%

Gold Smith	12	-	4.8%	-
Panel beating	42	3	16.8%	1.2%

In Table 3, 92% of the metalwork technology vocations or areas were preferred by males only, while 8.0% of the metalwork technology vocations or areas were preferred by females only. Also none of the female prefer gold smith since it has 0%.

Research Question Four :*What are the Problems Associated with the Metalwork Technology Training Needs of Youths in Bariga Local Council Development Area in Lagos State?*

Table Four: Frequencies and Percentages of Problems associated with the Metalwork Technology Training Needs of Youth in Bariga Local Council Development Area (LCDA) in Lagos State.

S/no	Challenges Encountered	Frequency	Percentage
1	Hazard	140	25.92%
2	Low patronage by customers	108	20.00%
3	Lack of Financial Support	198	36.30%
4	Lack of Career Guidance	90	16.66%
5	Low Income Earning	108	20.00%
6	Lack of Moral Support	150	27.78%
7	Low recognition	160	29.64%
8	Requires more effort and strength demanding	128	23.70%

According to Table 4, the youths in Bariga LCDA had agreed that the major problems associated with their metalwork technology vocations or areas training needs as implied by their percentage response were Lack of Financial Support which is 36.30%, Low recognition is 29.64%, Lack of Moral Support is 27.78%, Required more effort and strength is 23.70%, Low Income Earning and Low patronage by customers are 20.00% respectively. Others may not be considered as major problems because their percentage responses were below 20.0%.

DISCUSSION AND CONCLUSION

Table 1 presents the results of demographic characteristics of youths in Bariga Local Council Development Area in Lagos state, Nigeria. The results indicate higher percentage of male (92%) respondent than female (8%) respondents. The low percentage of female respondents could partly be attributed to the low enrollment of females in metalwork technology the area of the study.

Table 2 present the results of Preferred Metalwork technology Training Needs of youths in Bariga Local Council Development Area in Lagos state. The results indicate a relatively high percentage of the participants selecting fabrication, which is 20.0% and is ranked the first, while the leastpreferred metalwork technology vocations or areas are Gold Smith and casting with 4.8% and 4.0% respectively.

Table 3 present the results of Influence of Gender on the Metalwork technology Training Needs youths in Bariga Local Council Development Area in Lagos State. The results showed that 92% of the metalwork technology vocations or areas were indicated by male respondents only as need areas, while just 8 of the metalwork technology areas were indicated by female respondents only in Bariga Local Council Development Area in Lagos State.

Table 4 presents the results of Problems Associated with the Metalwork technology Training Needs of Youths in Bariga Local Council Development Area in Lagos State. The results indicate a high percentage in Lack of financial support (36.30 %). The high percentage observed with this problem could be attributed to the experience of most of the respondents' inability to secure space and procure needed tools and machinery. [Akubudike \(2013\)](#) has argued sufficient funds should be made available to metalwork technology, if Nigeria truly need industrial revolution and development. Lack of financial support was followed by Low recognition (29.64%). The next is Lack of Moral Support (27.78%), this observed percentage response could be attributed to the non-challant attitude shown by some parents towards their children education, especially parents who lack formal education. For example, most of the parents do not care to check on their wards academic performance nor check on what they are really doing after graduation so that they can boost their moral or correct them where necessary. Lack of Moral Support was further followed by Required more effort and strength is23.70%. This observed percentage response can be attributed to the societal believe that metalwork technology is more tedious and difficult which usually turned out to be a measure problem that makes the younger ones sometimes to be running away from places where they are receiving training. At the end the situation turns out to be a problem to both the youth themselves and the society at large. Low Income Earning and Low patronage by customers are 20.00% respectively. This observed percentage can be attributed to the lack of adequate intervention from the government in supplementing the trainees with an allowances to cushion their sufferings because for a trainer to train a trainee and also forfeit part of his profit to the trainee as income is always not possible in our society.

Based on the findings of the study, the following conclusions were made: (a) The youth were generally between the ages of 25 - 29 years, (b) Majority of the youths in Bariga LCDA want to pursue careers in fabrication Works, (c) About 92% of the metalwork technology vocations considered were preferred by males only, (d) 9% of the vocations were preferred by females only, and (e) The youths face many problems with their metalwork technology training needs. The major ones were Lack of Financial Support, Low recognition and Lack of Moral Support. Based on this therefore, it was recommended that Stakeholder, Non government Agencies, Government, especially Lagos State Government/Individuals (1) should provide vocational training programmes in metalwork technology for youths in Bariga LCDA, (2) should encourage the establishment of youth clubs (e.g. Inventor/fabricator Club, Metalwork technology (MET) Club, etc.) and youth movements in Bariga local Council Development Area in order to serve as an eye opener for their future career opportunities, (3) should provide the necessary leadership, financial and other logistical support to the youths so that they can develop and manage self-sustaining metalwork technology enterprises that can create employment in the area, (4) should provide a means of bridging the gap that exists between schools and industry in the State.

RECOMMENDATIONS

In order to bring about the needed industrial growth and development this is a key component of the transformation agenda of our beloved country Nigeria. Having realized the problems/shortcoming coupled with practical skills acquisition in metal work technology training need of youth in Bariga LCDA for self-reliance it is the opinion of the writer that such challenges can be resolved if the following recommendations are considered for proper implementations.

- ✓ The curricula of Vocational and Technical Education should be reviewed from time to time to include what is left out of the University curricula.
- ✓ Colleges of Education and Polytechnics should be up-graded to degree awarding institution for Vocational and Technical Education graduates climb to the apex of education in the country.
- ✓ More clustered areas for metal workers in the country is highly needed. Government therefore should build metalwork complexes all over the country where metal workers of different trades will stay and carry out their activities and provision for recruitment should also be provided i.e. apprenticeship. This will encourage intra and inter skills acquisition and development among them this will enhance their productivity and increase their overall sales above all, be self reliant.
- ✓ **Provision of Equipment and Tool:** Government should provide modern machines, equipment and tools in all these clustered of metalwork areas. This will enable them to be acquainted with the latest equipment machines and tools in different areas of specialization.
- ✓ **Disbursement of Loans:** Government should encourage metal workers by disbursing different loans to graduates to enable them be self employed as this will help them also to procure modern machines.

Considering the above recommendations the metalwork technology need of youth in bariga LCDA will met by metalwork educator and practitioners and all other stakeholders which will meet all their designed and programmed aims and objectives appropriately.

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Work from Home and Business Intelligence Adoption: A New Prospect after COVID-19 Outbreak in Dhaka City

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Abstract

Novel Corona Virus Disease (COVID-19) pandemic resulted in lockdown affecting all businesses globally. As a result of this, most businesses are adopting advanced Business Intelligence (BI) and analytics tools as a mandatory component of their business continuity plan. Employees of multi-national companies were forced to work from home leading to challenges in productivity and motivation. 44 working professionals of Dhaka city from multi-national organizations who worked from home participated in the online survey with a semi-structured questionnaire using the snowball sampling technique. Descriptive statistics are used to analyze the findings of the data in this qualitative study. 100% of the respondents reported that work from home has been the only option for organizations to sustain businesses during the lockdown. 50% of the responders agreed to an increase in their productivity, while 25% had a decline in work productivity, 25% of the responders had no opinion on increase or decrease of productivity as the workload was less than usual. It is to be noted that time management is the motivating factor in increasing productivity during the lockdown. 50% of the participants motivated their subordinates and peer through the work they did like cooking and online shopping while 50% shared motivational videos and real life related articles to motivate subordinates and peers. The results showed that work from home has been the best option for them and their family to ensure health security during this pandemic. Time management practices can be an extremely effective method to motivate employees and this has a ripple effect on the performance of employees. Thus the adoption of advanced Business Intelligence (BI) and analytics tools helped companies to solve many crisis management during this pandemic and lockdown situation in Dhaka city.

Keywords: Work from Home, Business Intelligence, COVID-19, Productivity, Dhaka, Bangladesh

1. Introduction

Corona Virus Disease (COVID-19) is recorded to have started in December 2019, in Wuhan city of central Hubei province of China (Holshue et al., 2020). World Health Organization (WHO) along with Chinese authorities started working together and the etiological agent was soon recognized to be a new virus and was named Novel Corona Virus (2019-nCoV). Looking at the stretch of countries this outbreak spread to, WHO declared it a Public Health Emergency of International Concern on 30th January 2020 (WHO, 2020, 2020b, 2020c). Corona viruses are a family of enveloped RNA viruses (Burrell et al., 2017). They are generally pathogenic to mammals and birds and cause mild upper respiratory tract infections in humans and can rarely be transmitted to a larger human population manifesting into a pandemic. Lockdown affected the global economy leading to the halting of services and products, leaving work from home as the only option for multi-national companies to sustain (Ebrahim et al., 2020). In the absence of vaccines, governments across the continents have been implementing "Social Distancing" to the extent of curfew as a traditional public health measure. Due to the strict execution of the social distancing, the businesses have transformed their default operational mode as work from home. While several businesses could not cope, many organizations considering WHO and Government health care procedures declared compulsory work from home during lockdown (Saleh, 2020). This study is the first of its kind that helps understand the positive and the negative effects of work from home within Bangladesh multi-national organizations during the COVID-19 pandemic. Productivity is very important to any sustainable business growth (Amin, 2017; Amin, 2021). Banting, Sharpe and StHilaire, 2002; Kuegler, Curtis and Jaya shankar, 2020 stated that productivity can be increased by improving levels of employee wellbeing. Motivation has been studied

extensively by researchers in terms of intrinsic motivation and extrinsic motivation (Curtis and Jaya shankar, 2020). Motivation concerns that “psychological processes that cause the arousal, direction and persistence of behavior” (Ilgen and Klein, 1988). Herzberg's (1966) motivator-hygiene theory has been one of the most influential in recent decades. The theory divides motivating factors into two categories: motivator factors, which have something to do with the work itself and hygiene factors, which have something to do with the surrounding context (Herzberg, 1966).

1.1. The History of COVID-19 Outbreak

The corona virus disease 2019 (COVID-19) has been considered a global pandemic disease by the World Health Organization (WHO). The COVID-19 epidemic has infected millions of individuals around the world and caused over 1, 314, 557 deaths were reported on 15th November 2020 (<https://www.worldometers.info/coronavirus/>). The World Health Organization (WHO) estimates that the case fatality rate is around 2% (WHO 2020), but the overall burden of COVID-19 left over is undefined and it is still not clear when and how regular commercial and social life will return (WHO 2020; Amin, 2020). The number of infections in Bangladesh rose significantly to 4, 30,496 cases, and 6, 173 coronavirus deaths were reported on 15th November 2020 (<https://www.worldometers.info/coronavirus/>). It is reported that the Bangladesh government has made numerous strategies to control the spread of infection in our community, but implementation plans were limited in addressing the challenges of the stay-at-home and lockdown policy. These tasks may include economic impact due to COVID-19, struggles for work from home and present governments' ability to influence the society (Saleh, 2020). Raising public awareness of COVID-19 health issues is not as easy as the society may differently interpret the importance of stay-at-home policy for their health. Therefore, people were urged to follow the government's instructions about the COVID-19 pandemic (Abdi, 2020). Based on its theory, effective communication shall begin at top-level management (Bussmann and Niemeczek, 2019; Hu *et al.*, 2012).

Doern *et al.* (2019) specified that every crisis brings challenges to industrialists and their organizations, no matter if initiated by human behavior, natural disasters or economic mechanisms. As the world sees the fact on the end of December 2019, the corona virus (so-called COVID-19) has started spreading from Wuhan, China to other countries so quickly, that on 11th March 2020, World Health Organization – WHO (2020) declared COVID-19 as a global pandemic. As a response to mitigate corona virus spread and save lives, governments in affected countries imposed desperate measures of social distancing, widespread lockdown, restrictions on travelling and people meetings. Liguori and Winkler (2020) stated that many aspects of private and public life had to be moved online due to this pandemic situation. Universities had to establish similar precautionary measures to minimize the impact of COVID-19 on higher education. The COVID-19 pandemic required universities to switch their entire institutional apparatus to one of online delivery overnight (Liguori and Winkler, 2020). Social distancing has emerged as a major intervention during the COVID-19 epidemic (Amin, 2020). The health threat posed by the virus provides a direct incentive for individuals to avoid physical contact, but the private responses of individuals will likely be insufficient to account for externalities and are unlikely to contain the epidemic. Thus, government policies to raise social distancing to play a vital role in theory (Gupta, 2020; Gupta *et al.*, 2020). As a result of this, most businesses are adopting advanced Business Intelligence (BI) and analytics tools as a compulsory element of their business continuity plan. They had to start shifting their business activities online (Amin, 2020). Pandemics will very likely influence traditional entrepreneurial decision-making processes (Chell, 2013), communication and conflict management (Aldairany *et al.*, 2018), well-being (Stephan, 2018) and business outcomes (Wach *et al.*, 2016). However, not everything can be solved conveniently through online activities despite limited options.

Bangladesh has weathered cyclones, floods, and so much more. It is observed that the best way forward in this crisis is to find the best in ourselves and make sure that the nation can help each other survive this crisis. According to World Bank data, only 15% of Bangladesh's population makes more than 500 taka (\$5.90 per day). They can meet their daily expenses, send their children to school, and hope that they reserve enough for an emergency health emergency. Most villagers depend on remittances from the cities or abroad. But because of this global crisis, people everywhere are out of work. The generation of income has decreased significantly. The economic shutdown sparked by COVID-19 threatens millions of livelihoods in the country imminently. Dhaka's

streets were eerily empty. When 10 million rickshaw drivers, day laborers, factory workers, maids and others raced to get home before the start of the shutdown – announced by the government on 26th March 2020- the city became unnaturally quiet. This populous city is usually full of the sounds of interaction, energy and a growing economy (Saleh, 2020). Facebook is very popular in Dhaka. Many people of Dhaka city do not know about using the internet, but they are using Facebook (Amin, 2018a; Amin, 2018b; Amin, 2019). The internet users of Bangladesh spend a staggering amount of time on Facebook. According to the Q2 report of 2017, Dhaka is ranked second in the world in terms of having the most active Facebook users (Global Digital Statshot, 2017).

1.2. Overcoming Challenges of Stay-At-Home and Introduce Work from Home Policy

WHO Director-General Dr. Tedros Adhanom Ghebreyesus stated on COVID-19; “We have a long way to go, this pandemic will remain with the human for a longer time. The world cannot go back to the way things were.” (World Health Organization, 2020). People have become more and more aware of their health and safety issues. The importance of the stay-at-home policy has to be reinforced even though it might become a challenge during the coronavirus outbreak. Wilder-Smith and Freedman (2020) identified that social distancing is an effective way to prevent epidemics and potentially be unfavorable for the economy. Stay-at-home policy implementation has become more complex, but the Government still has chances to manage this policy more effectively. Theory of Compliance Management mentions three C’s that support this compliance culture, e.g., communication, confirmation, and correction. These key components have benefits to boost compliance in continuing daily activities (Lestari et al., 2015). This 3Cs concept can also be used for managing the implementation plans of stay-at-home policy (Setyawan et al., 2020). Work from home has been the only option for organizations to sustain businesses during lockdown (Curtis and Jaya shankar, 2020). Hence, this study attempted to evaluate the productivity of the employees working from home during COVID-19 pandemic, intrinsic motivational factors of the employees working from home during COVID-19 pandemic, techniques used by employees to motivate others like their subordinates and peer during work from home in the COVID-19 pandemic and perspective on the effect of COVID-19 on work from home in general. The main objective of the study is to know about the present situation analysis of work from home employees and adoption of Business Intelligence in this pandemic situation in Dhaka city. The study is mainly based on both the primary and secondary sources (in form of various research papers, books, thesis papers, websites and eBooks).

2. Materials and Methods

The present study is a cross-sectional study carried out in Dhaka city through snowball sampling technique. Google forms were used to develop an online semi-structured questionnaire with a consent form appended to it. The link of the questionnaire was sent through LinkedIn, Facebook, e-mails, WhatsApp and online organizational groups to the contacts of the investigators. The participants were free to roll out the survey to as many people as possible. Thus, the link was forwarded to people apart from the first point of contact and so on. Clicking on the link led the participants to fill agree to participate in the survey for this study. Demographic details were filled in by the participants. A series of questions then appeared sequentially for the participant to answer. Since the study was an online study, participants with access to the internet could participate in the study. The sample selected from the participants was working from home during the lockdown and held a salaried position in various multi-national companies in Dhaka city. The data collection was initiated on 20th October 2020 at 6.00 AM BST (Bangladesh Standard Time) and closed on 27th October 2020 at 6.00PM BST (Bangladesh Standard Time). We were able to collect data from across various locations of Dhaka city. The online self-reported questionnaire developed by the investigators was designed to collect information about work from home, productivity, motivation, motivating others and challenges faced during work from home that affected productivity exclusively in relevance to work from home during the COVID-19 pandemic. The questionnaire was designed with multiple choices. A sample size of 44 is used in the study. The choice of the sample size is based on the previous work of Schoof (2006), Uddin et al., (2015), Amin (2019) and Amin (2020). A semi-structured questionnaire with multiple choices was shared online with the participants who agreed to participate in the study. A total of 50 participants filled up their questionnaire. The sample of the

study is 44 was selected purposively and conveniently for easy access and smooth collection of data. Descriptive statistics were used to analyze the findings and to estimate the results of the study.

3. Results and Discussion

The results were analyzed in five areas as below:-

- I. Work from home is the best option during the COVID-19 pandemic.
- II. Productivity of the employees working from home during the COVID-19 pandemic.
- III. Motivational factors of the employees working from home during the COVID-19 pandemic.
- IV. Techniques used by employees to motivate others like their subordinates and peer during work from home in the COVID-19 pandemic.
- V. Proper implementation of Business Intelligence (BI) and analytics solution in the COVID-19 pandemic.

3.1. Work from Home

Kramer and Kramer (2020) identified that some individuals had very minimal or no work from home experience, for example, primary education teachers, etc.; they were also forced by the law of the land, to adopt the work from home arrangements. A community can face challenges during such pandemics and epidemics in terms of work and productivity. The mental well-being of employees can be affected adversely when they are forced to live in a lockdown. The fear and anxiety employees experience can affect their perspective towards motivation, productivity and their work in general (Tripathi and Bagga, 2020). Challenges like – isolation, social distancing, self-quarantine, restriction of travel and the ever-spreading rumors in social media are also likely to affect mental health adversely (Banerjee, 2020).

Figure 1 shows 100% of the respondents reported that work from home has been the only option to sustain businesses during lockdown for multi-national companies in Dhaka city. The respondents also believed that work from home has been the best option for them and their families to ensure health security during this pandemic.

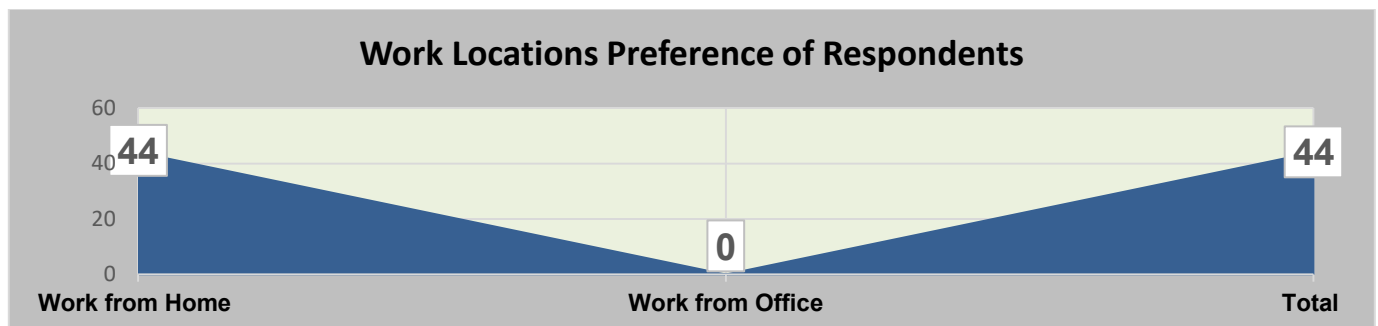


Figure 1: Work locations preference of respondents (Source: Own Survey 20th to 27th October 2020)

3.2. Productivity

Figure 2 shows that out of the total participants, 50% answered that the work productivity had increased during work from home in the COVID-19 pandemic and 25% of respondents had a decline in work productivity. 25% of the responders had no opinion on the increase or decrease of productivity as the work was lesser than usual. Saving money and time, work flexibility, family commitments like child caring and fewer distractions and many more benefits of employees working at home reported by respondents.

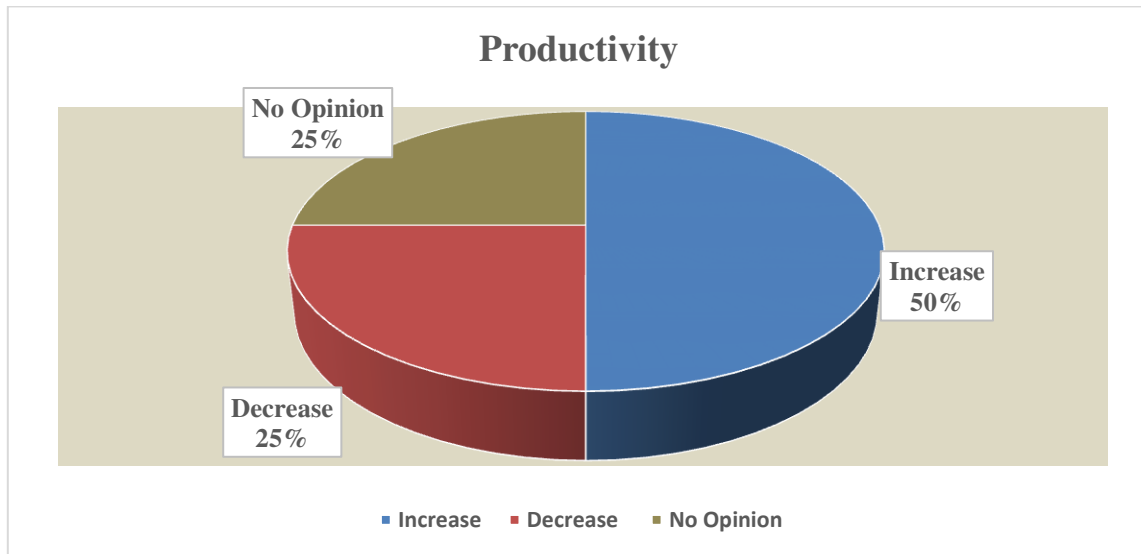


Figure 2: Productivity of the employees (Source: Own Survey 20th to 27th October 2020)

3.3. Motivation

It is reported that time management is the motivating factor in increasing productivity during the lockdown situation in Dhaka city. Table 1 shows that out of the total participants, 50% gave credit to their effective time management during lockdown for motivating self while 41% of the respondents believed that the reason for their motivation was fear of losing the job. On the other hand, 9% of the participants admitted that they were not able to cope with work in recognition of their work being in a mess. They identified that difficulty in separating home and work life, domestic distractions and mental loneliness are some of the disadvantages of working from home in Dhaka city.

Table 1: Motivation of the employees

Motivation	No of Respondents	Percentages (%)
Self-Motivation	22	50
Fear of Losing Job	18	41
Unmotivated	4	9
Total	44	100

Source: Own Survey 20th to 27th October 2020

It is reported that 50% of the participants motivated their subordinates and peer by sharing their work (like cooking and online shopping) while 50% of the participants motivated their subordinates and peer by sharing articles, videos on motivation to increase productivity during the COVID-19 pandemic. Moreover, it is observed that Herzberg's (1966) motivator-hygiene theory is directly and indirectly supported by this study.

3.4. Proper Implementation of Business Intelligence and Analytics Solution

The advanced Business Intelligence (BI) and analytics tools during the COVID-19 pandemic to solve all challenges faced during work from home. The adoption of big data and predictive analytics has grown in multinational companies to facilitate better comprehension of the right communication and innovations. The interactive dashboard of the analytics and BI solutions enables granular insights to the policymakers. (Tripathi, Bagga and

Aggarwal, 2020). The BI and analytics solutions are capable of precise analysis of the data to provide actionable intelligence (Tripathi and Bagga, 2020).



Figure 3: Infrastructure requirement for work from home (before starting) (Source: Own Survey 20th to 27th October 2020)

The proper implementation of BI and analytics solution, the easy work from home arrangements has been converted as a part of business continuity measures for multinational companies in Dhaka city. This resulted in the implementation of the necessary technology at the home workstations. Figure 3 shows the crucial technology capabilities to enable the work from home and employee engagements. Tripathi and Bagga (2020), Rozwell (2018) stated that the infrastructure must be followed by the required training and technical support etc. to enable optimum productivity during work from home. According to this study, training and technical supports from IT professionals is very crucial for work from home employees reported by all respondents.

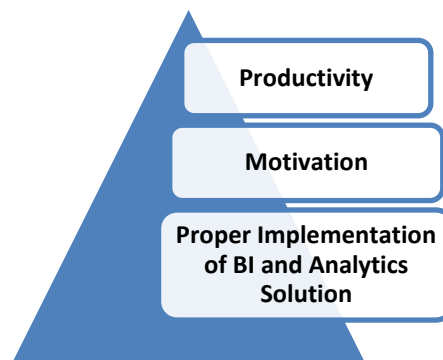


Figure 4: Challenges faced during work from home (Source: Own Survey 20th to 27th October 2020)

In above figure 4, employees of multinational companies were facing three challenges reported by respondents. There are (1) Productivity, (2) Motivation and (3) Proper Implementation of Business Intelligence and Analytics Solution.

4. Conclusion

Tripathi and Bagga (2020) stated that work from home is the most forceful change driven by COVID-19 across business professionals. According to Amin (2021) it is proved that demographic factors were interrelated for any business sustainability in Dhaka city. In this study demographic factor is employees' status as they are working in multi-national companies in Dhaka city. It is found 50% of the participants being able to increase their productivity due to effective time management skills despite adhering to government-declared health guidelines

and work from home while 50% were unable to cope with their workloads while working from home. One of the effects of the pandemic that led to work from home for employees was reduced volume of work and 25% of the participants agreed that their work had reduced during the pandemic period. While motivating oneself can be very challenging for many people, 50% of the participants expressed their intrinsic mode of motivation was through time management. Fear of losing a job was experienced by 41% of the participants as a reason to feel the need to increase work productivity during this pandemic situation. The anxieties and distractions the employees experienced could be the reason for 9% to experience a complete mess in their work while working from home. However, many respondents were able to motivate their peers and subordinates by sharing the work they had accomplished. They were able to motivate others by setting an example which could be due to their leadership quality. Introducing concepts of effective time management exclusively for employees working from home can have a positive effect on increasing their productivity. To sum up, motivating employees while they are at the workplace and while they are working from home puts forth different challenges. The study concludes the time management as a source of self-motivation for increasing productivity during work from home. Moreover, the adoption of big data and predictive analytics has grown in the multinational companies to facilitate better innovation which leads to creating more productive employees in Dhaka city.

5. Suggestions for Further Study

The study is limited to the people who had access to smartphones, e-mail IDs and LinkedIn profiles. The study was essentially on employees who were working from home in multi-national companies in Dhaka city. The author of this article has analyzed the situation of work from home after the corona virus outbreak. Further investigations are needed to know the upcoming post-pandemic situation or second wave pandemic analysis in case of work from home or work from the office of the employees in Dhaka city.

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Key Approaches to be a young entrepreneur in Bangladesh

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Abstract

During these unprecedented times, the global pandemic COVID-19 has taken a toll on the economy and the mindset of the people of Bangladesh. Although the initial months of the COVID-19 global pandemic were dealt with a heavy blow, the resilience of the people of Bangladesh were tested on the long run, Gen Z (generation z) are either enrolled, or just graduating out of university, maybe some already graduated, with a global crisis in hand, the job market never looked as bad. Desperate to survive, Bangladesh is experiencing a surge of young entrepreneurs. In this journal, I will be focusing towards two groups of this generation, the future young entrepreneurs and the existing young entrepreneurs of Bangladesh.

For the future young entrepreneurs:

Everybody is brought into the world with the possibility to be a business visionary, and the sooner we start fostering the key characteristics that characterize a fruitful business visionary, the more probable an individual will proceed to have a beneficial outcome when they enter the labor force, regardless of whether they seek after a vocation in business, or follow a more conventional way. Showing enterprising abilities isn't just about acceptable strategic policies. We should consider business venture a focal point. Being a business visionary projects perceiving the truth about things, not what they are. This method of review our general surroundings is unfathomably significant. It permits us to think distinctively and shake things up a staple for progress. At the point when this focal point is applied at a youthful age, it eventually shapes the encompassing scene and supports coarseness and assurance.

To start off any enterprise, past research in that industry and facts should directly support strategic advances and towards constructing a firm establishment through model. Also, there are three key parts to zero in on your early days of entrepreneurship adventures: **creative mind, prioritization, and strength.**

a. Creative mind is the place where innovativeness starts. It is the capacity to take what is nearby and accept that, by considering some fresh possibilities, it very well may be better by empowering inventive reasoning, the inner future entrepreneur in you should be able to figure out how to discover special arrangements and investigate fields that require a more innovative standpoint. Strategic strides to showing this incorporate creative exercises, critical thinking games, and dynamic situations.

The entertaining thing about inventiveness is that the more you use it, the more you have. It's anything but a limited asset that you run out of. Maybe, it's anything but's a muscle you need to work out. What's more, when you work that muscle routinely, it gets more grounded and more useful. Imagination is tied in with framing new, extraordinary and valuable associations, and the more you use, the more you have.

b. Prioritization is the initial phase in using time effectively and efficiency. Training to focus our minds on prioritization, we learn valuation, project the executives, effectiveness, and dynamics of the field you are about to get into. These are altogether advantageous abilities that will demonstrate important in our own future individual and expert life. To show prioritization, we should zero in on teaming up to make plans, giving more

dynamic freedoms to our surrounding possibilities, and empowering deferred delight. Versatility is maybe perhaps the main abilities to show right off the bat throughout everyday life, as it is the thing that can represent the deciding moment achievement. As you set sight on your desired business and the market you will be entering, make sure to stand up to early critics through various past in-depth analysis, research data and facts in your desired industry.

Lingering isn't a type of lethargy, it's aversion - and we normally stay away from things we would prefer not to do. Lloyd Blankfein, the CEO of Goldman Sachs, when said that the primary thing he does in the workplace every day is the errand he fears the most. Whatever you would prefer not to do, do it first, and it kills the annoying fear that will sap energy away from different undertakings as you defer the unavoidable.

c. Strength matters. Being tough methods getting up after you've been wrecked, not taking "no" for an answer, and, eventually, having faith in yourself in any event, when you fall flat. Flexibility permits us to work for a superior future, regardless of whether that implies remaining in a hard spot and remaining where there is strain. Showing this fundamental expertise teachesthe future young entrepreneurs the best way to put stock in themselves, and there are different strategic approaches to show versatility, including empowering energy and supporting confidence.

Accepting that even the misfortunes fill a need is a significant attitude instrument. In case you're going into business venture to win first thing, it's probably you'll struggle bouncing back after your first deterrent. Additionally, note that in the above accounts of strength, the organizers settled on the cognizant decision to assume responsibility for their own story. Vera Wang wasn't in charge of the reality she didn't find the manager in boss work, nor was Oprah in charge of being terminated and put on a television show. It's what they did next that made a difference most.

Here are other important factors to consider before starting your entrepreneurship journey in Bangladesh:

<u>Political Factors</u>	<u>Economic Factors</u>	<u>Social Factors</u>	<u>Technological Factors</u>	<u>Environmental Factors</u>	<u>Legal Factors</u>
Govt policies being used against your business idea to restrict growth Govt. influencing consumers and your desired industry which affects profits	Inflation Unemployment rate	Cultural sensitivity is needed for different consumers (different religions, etc)	Increase efficiency and profitability of businesses.	Negative impact on environment from supply	Updates from law to employment laws.

For the existing young entrepreneurs:

In the present truly changing business environment, a young entrepreneur can undoubtedly get overpowered. It's indispensable, however, to remain fixed on your objectives for the organization. Indeed, even with a firm methodology set up, each business visionary ought to do these things to make a way to progress:

a. Study the opposition.

As a business entrepreneur, you need to know who your rivals are. You additionally ought to comprehend the opponent item or administration that is being advertising. This information will help you better market your item or administration to stick out, maybe in any event, utilizing your opposition's shortcomings for your potential benefit.

Discovering somebody you're focused on outcompete can be an incredible method to keep fixed on your objectives and move your dare to a higher level. In any case, when you're eagerly centered around beating your opponents, you may start to create a "succeed no matter what" mindset that makes you overlook how you make progress. One gathering of analysts, for instance, analyzed the connection among competition and deceptive conduct. They found that when individuals go up against their adversaries (comparative with non-rival contenders), they are more able to act dishonestly to win. In any case, such conduct may discolor your standing and strain different connections that are imperative to your endeavor's prosperity. One approach to keep away from this trap is to pause and ponder what's significant. While outflanking your adversaries may give momentary advantages, the deficiency of your honesty will have long haul results

b. Preserve cash regardless of how great business is.

To be perfectly honest put, live as efficiently as could be expected. Being a new entrepreneur, ought to be as moderate with their cash as conceivable to have the option to manage any tough situation that emerges. Saving a while of working costs in the bank will assist you with enduring unanticipated conditions.

There is a harmony between having an excess of money close by, out of safeguard and having an insufficient stock. On the off chance that a business has an excessive amount of money, it is passing up freedoms to put away the money and produce extra income. Then again, on the off chance that it's anything but a sufficient stock of money, it should get the cash, and pay revenue, or auction its fluid speculations to produce the money it needs. In the event that the business hopes to create a preferred profit from its speculations over it pays in revenue on its borrowings, it may choose to put away its overflow cash and acquire any extra cash it needs for its exercises. In investigating an organization's monetary record, certain proportions like a company's basic analysis proportion, or the proportion of its most fluid current resources (counting cash, debt claims, and attractive protections) to its present liabilities give a thought regarding its money the board. While a proportion of more prominent than one demonstrates a solid current resources circumstance, an extremely high proportion could show that the firm holds an excess of money or other fluid resources.

C. Examination and testing of new applications and administrations systems.

Comprehend arising items or administrations not too far off that could work on your organization's activities. Get your work done. It is safe to say that you are exploiting all innovation has to bring to the table? Is there an application that could assist you with dealing with your time all the more proficiently or a help that allows you to assign conventional errands to save more opportunity for need projects? Explore what will drive and motivate your work force and people directly supervised by you.

D. Try not to handle colossal business sectors from the start.

Key words here are "Start "niche". Try not to venture into enormous business sectors in the underlying stages. Specialty showcasing can be very practical in the event that you remember three things: Meet the market's interesting requirements by offering something new and convincing. Communicate in the market's language and comprehend its hot catches. Your language ought to be in synchronize with that specialty in any event, for the minor parts of a showcasing effort like the organization's trademark.

E. Pay attention to client criticism and adjust.

Sales reps know the aphorism "consistently be shutting," alluded to by the abbreviation ABC. Business visionaries have an abbreviation, as well: Always be adjusting, or ABA. However, business visionaries can develop their business just when they're paying attention to client criticism. It may not mean a lot in the event that one client doesn't care for your item yet on the off chance that this is valid for a significant number of them and they're mentioning another element, tune in and be prepared to adjust. Regardless of whether you're adjusting your promoting plan, improving on an item or reacting to recent fads, focus on client input. Be rapt with attention.

Business visionaries are frequently urged to make an inevitable outcome by disregarding those with something terrible to say. Many articles beg entrepreneurs to quit paying attention to analysis or give cynics a wide compartment. Idealism has been known as the absolute most significant factor to a business entrepreneur's prosperity. While the facts really confirm that nothing's accomplished with a pessimism outlook, overlooking all analysis is a catastrophe waiting to happen. Business visionaries regularly harbor enormous dreams and large thoughts, now and again conveying huge blemishes they're too anxious to even think about taking note. Just hearing out an individual with real concerns can set aside an entrepreneur cash, time, and anguish. Encircle yourself with 24-hour pessimism resembles harming the well — it will deplete your thoughts and your endeavors of all their flash. In any case, that doesn't mean you should jettison each pundit.

F. React to change.

In business change is inescapable and those fit for reacting are adaptable and flexible. A business visionary should be set up to acknowledge change and adjust business tasks likewise. Be adaptable. On the off chance that a change in your item or administration is justified, don't be abandoned. Acknowledge from the beginning that where you are is probable not to be the place where you'll wind up. An absence of versatility can bring about misfortune in clients, benefits and even business disappointment. As a business innovator and young entrepreneur, comprehend that the world is developing quickly. Indeed, even an organization established a year prior could change the present reality.

G. Expand your circle of influence.

Anybody that you come into standard contact with throughout business can impart important experiences to you; this incorporates merchants, makers, media delegates, and so on. Notwithstanding, it likewise incorporates those that you may not usually look to for data.

Seeing around the bend of progress regularly requires information on the landscape ahead of time. The most ideal approach to acquire this sort of data in the business field is to expand your extent of impact, which just expects you to bring others into your circle of impact. Enlarging your sources permits you to see things that you wouldn't conventionally see all alone.

Here are other important factors to consider on your entrepreneurship journey in Bangladesh:

<u>Building a Business Case</u>	<u>Project Kickoff</u>	<u>Project Management</u>	<u>Change is inevitable</u>
1) Documenting “what” 2) Validating “Why” 3) Estimating “How” 4) Business Alignment 5) Marketing/Sales	1) Setting expectations 2) Clarifying roles and responsibilities 3) Establishing timing	1) Executing change 2) Adoption of project coordination 3) Team member familiarity to recognize strength and weakness 4) Business alignment	1) Operational testing 2) Stakeholder support 3) Up-to-date marketing and sales tactics 4) Adoption of new laws and up-to-date government protocols 5) Acceptance of defeats and setbacks

Conclusion:

The facts confirm that we are living in the midst of the greatest unemployment rate since the independence of the country. Be that as it may, the zeitgeist of the occasions feels unique, particularly in the business world. Individuals aren't meandering in the roads sorting out some way to endure like they may have been during early recession days Bangladesh have endured. All things being equal, a large number of them are putting resources into the following phase of their lives: their future prospects. If you are a future young entrepreneur reading this, or even an existing one, the entrepreneurial spirit in you have already started its journey into entrepreneurship just by considering the fact that you are reading this. You will never get back your time. Each second counts. Go out there every day and make the right decisions for yourself and your business. Chase your dreams but not blind sighted.

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Future of Digital Financial Services (DFS) and career prospects: special focus on Bangladesh

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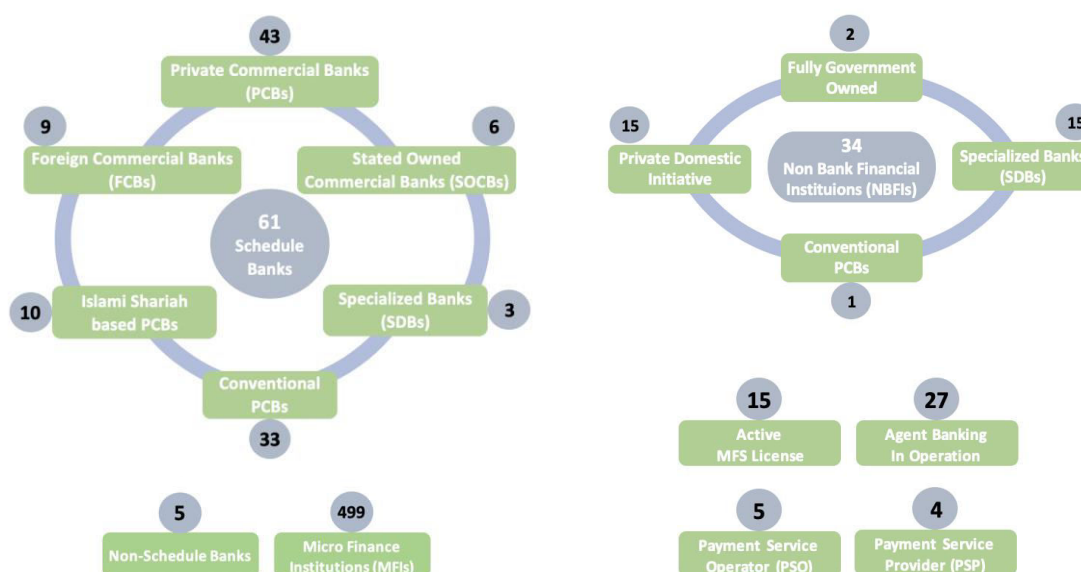
Abstract

The whole world is moving towards “Digital Financial Services (DFS)” and new technologies have already been developed and launched focusing on digital finance; Blockchain Technology, Internet of Things, Open APIs, Big Data, Machine Learning, Smart Contracts, Cloud Computing, Augmented Reality (AR), Virtual Reality (VR), Robo advice, etc..All these technologies can be used individually or all together to have lots of benefits. With innovative product development and already existed products and services, leading Mobile Financial Service (MFS) providers have addressed the gap of current traditional banking institution. Now the traditional banking industry are following the footpath of leading MFS service providers, creating different partnerships with them to facilitate banking services, adopting emerging technology alongside existing ones to fulfill the growing customer demand and access to digital financial services and also reducing the cost of operation with process optimization.

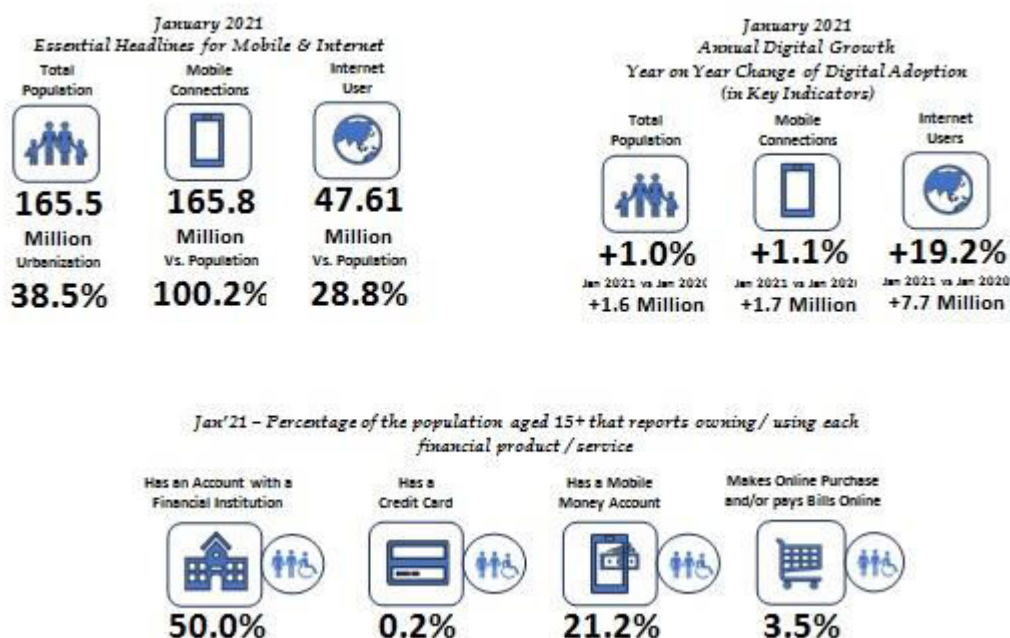
Journey towards Digital Financial Service (DFS) future

Circulation of e-KYC guideline in January’20 by Bangladesh Bank (BB) for financial service providers including MFS, e-Wallet is undoubtedly a vital step to acquire unbanked population more efficiently and cost effectively. Also NID number verification from Election Commission’s Database facility through API connectivity is another timely needed step by government for validate the authentic account ownership. The major two market players (bKash and Nagad) are grabbing the benefits fully, though the active customer base is 38.09% of registered customers as per October’20 data by BB. The MFS players need to go far ahead to increase the active customer base. Besides all banks are gradually implementing the e-KYC solution for online account opening.

Current financial system overview in Bangladesh;



Mobile phone and internet uses has upsurge in Bangladesh last few years. USSD, app and e-commerce based transactions are increasing rapidly, specially in this covid-19 pandemic (since April'20) some DFS transactions (Mobile Recharge, P2P, bill payment, e-commerce) enjoyed significant growth.

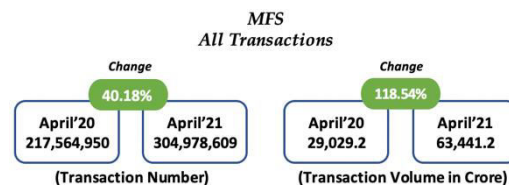
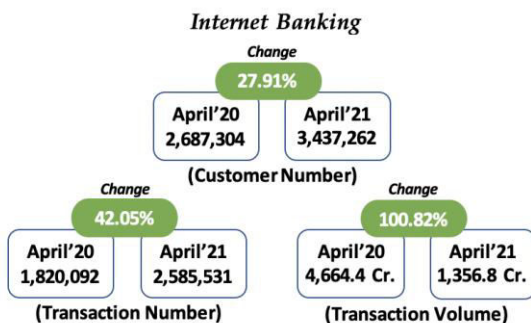
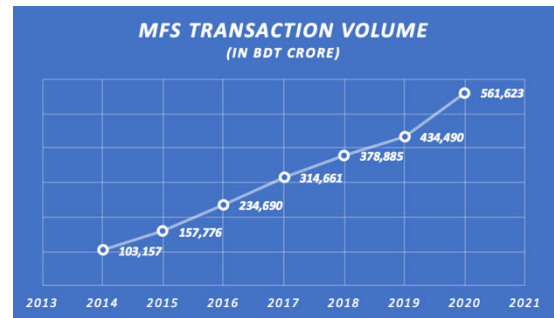
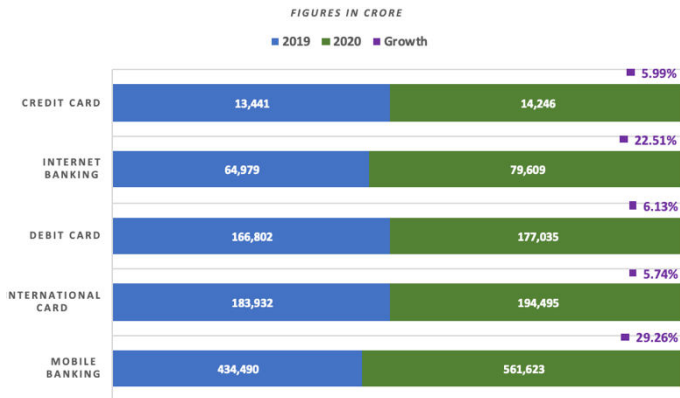


bKash, the largest MFS services provider developed their app with the concept of “Super app”, all financial services in one app along lots of online services. Now others become are follower. MFS market leaders (bKash, Nagad, Rocket) are continuously promoting in different media with different attractive rewards (discount, cashback, reduced service charge, etc.) to enroll more users and convert USSD based transactions to app based which also reduces the transaction cost. Few leading banks (EBL, BRAC Bank, City Bank) have already enrich their app with value added services along core banking services. Even few new generation banks are promoting their Banking App through TVC. From DFS users’ perspective, having such an app makes life easier for daily financial transactions with convenience, specially saving lots of time. Let’s have a look in to the download numbers from Google play store of industry leading DFS providers;



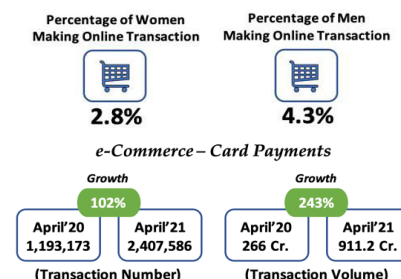
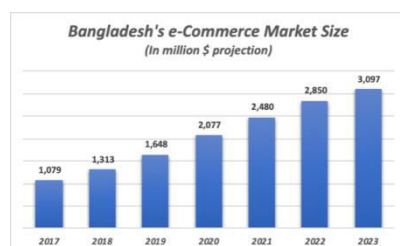
Bangladesh Bank has also launched a QR Code based payment guideline heading “National QR Code Standard for Retail Payments in Bangladesh” (PSD Circular No.: 01/2021) to promote the use of low cost QR code-based payments throughout the country. Not only that, to reduce the cash-based transactions, Bangladesh Bank has also published a circular (PSD Circular No. 07) for launching Interoperable transactions among banks and MFS providers through National Payment Switch Bangladesh (NPSB). This decision of interoperability can be marked as one of the most remarkable decisions in Bangladesh Bank’s history.

Besides, the DFS channels total transactions (Mobile banking, International Card, Debit Card, Internet Banking, Credit Card) year to year growth is remarkable. Fund transfer from Bank to Bank using Bangladesh Electronic Funds Transfer Network (BEFTN) and Real Time Gross Settlement (RTGS) becomes more easier through “Internet Banking and Banking App” with different types of service payment (QR Code, Mobile recharge, Utility Bill Payment, Ticket purchase, Hotel Booking) and the growth rate of internet banking transaction is 100.82% in one year (April’20 to April’21) through 27.91% increase in customer base.



Monthly card payments in e-commerce industry in Bangladesh grew to Tk. 911.2 crore in April’21 from Tk. 224 in March’20 crore before the pandemic due to people preference of online orders. Men are making more payments than women, though the difference is not significant. Also, cards are limited within urban upper middle-class people.

Before the pandemic, for every \$7 payment, \$1 was paid digitally. In 2021, it grew to \$1 against every \$5 paid, said by Syed Mohammad Kamal - Country Manager, Master Card Bangladesh. The e-commerce boom is mainly behind the recent jump in card payments, said Mashrur Arefin, Managing Director and CEO of City Bank, which is leading the card business in Bangladesh.



In 2020, only 29.12% e-commerce payment were made by cards. Till April'21, total 25,401,660 cards (debit, credit and prepaid) has been issued by all banks in Bangladesh. So, not only as per the given above projection on e-commerce market size but also issued card vs payment made card ratio. Bangladesh has a long way to go to capture all transaction digitally.

MFS and e-Wallet account holders are also making e-commerce payment, but such segregated data is not officially published or available, but total merchant payment through MFS and e-wallet in April'21 was BDT. 2758.62 crore which was BDT. 233.70 crore in April'20.

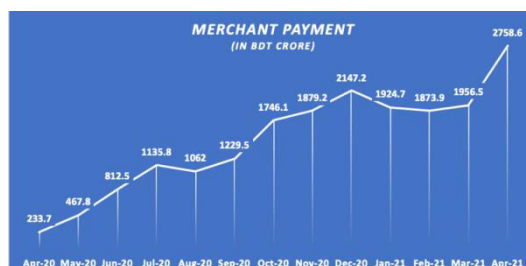
Almost all the e-commerce service providers have opted all available digital payments either connecting directly with the service providers or through payment gateway aggregator. And preferring digital payments rather than cash. For f-Commerce micro merchants who are doing online business through their Facebook page and usually do not have any trade license, for such segment, they are using personal MFS account to receive payments adding the cashout charge with the product price. As per a publication of UNCDF on 22nd December 2020 titled "Landscape Assessment of Retail Micro-Merchants in Bangladesh", there are 1,310,000 micro-merchant and their total yearly turnover is \$18.20 Billion. This is a huge market which is mostly untapped by digital financial service providers.

The Bangladesh Bank has taken another ground-breaking step on 16th November 2020, PSD Circular No.: 09/2020. To bring micro and small traders, marginal traders and service providers under the formal economy towards building a digital financial ecosystem society by allowing banks and mobile financial service operators to open personal retail accounts.

As mentioned in the same publication by UNCDF, 675,715 micro merchants' avails credit from different micro finance institutions and this credit market size is yearly \$778 Million. This is also mostly untouched market by DFS industry. 43% of the total micro merchants have bank account, though their bank account is used for personal uses. Among the banks account holders, 23% opens bank account to avail credit facility and 13% takes the credit. 98% of this segment merchant has mobile phone and 30% have smart phone. 30% of the micro merchants has MFS account and among them 43% uses their MFS account for business purposes.

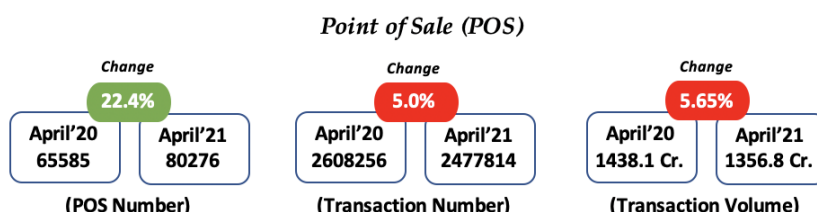
City Bank in collaboration with bKash have already started offering Digital Loan that will enable users to request and receive loans instantly through bKash, a first-of-its-kind in Bangladesh. Few other institutions are also started working with app based digital credit products. If these micro merchants value chain requirements are properly addressed with right and affordable DFS products (Credit, payment collection from customers, supplier payments, etc.), that will be great addition to the cashless / digital payment ecosystem vision.

In April'21, merchant payment was BDT. 2,758.62 crore, which is 41% more than March'21. While in various occasions, promotional campaigns for payments are launched. Merchant payments even increases 100% of regular trends, in October'20 and it was 1,746.03 Crore. The last one-year trend is showing usually towards growth. And MFS users are being habituated towards making payments in daily life rather than paying only more while promotional campaign is running.



DFS players also need to focus and come with a very convenient and cost-effective solution for the FMCG value chain to transact huge volumes in this industry. The FMCG market size in Bangladesh is 11,00,000+ Crore yearly. Though some are doing some pre-pilot and pilot phase. Banks have FMCG industry specific products already, but the convenience (bank branch availability, transaction timing, etc.) to do such transactions are very less than the MFS agent points, though agent banking points are increasing day by day.

The transactions in POS machine has decreased as peoples were unable to go out side due to pandemic lockdown since 2019, even though the number of POS machine has increased to 22.40%. But the POS machines are still limited with big cities. We can definitely expect that after the pandemic is completely over, the number and volume of transactions in POS machines will increase significantly within a short span of time.



Merchant Acquirer Banks are deploying more and more POS machine all over the country and small/micro merchants (grocery shops, pharmacy, small restaurants) are getting habituated to receive debit or credit card payments through these POS machines. Besides Bangladesh Bank (as per PSD Circular No: 05/2020, Dated: 31st May 2020) has decided to allow non-bank private sector entities to setting up necessary infrastructure in the country for ATMs and/or acquire merchants to serve the customers of schedule banks/MFSs/PSPs.

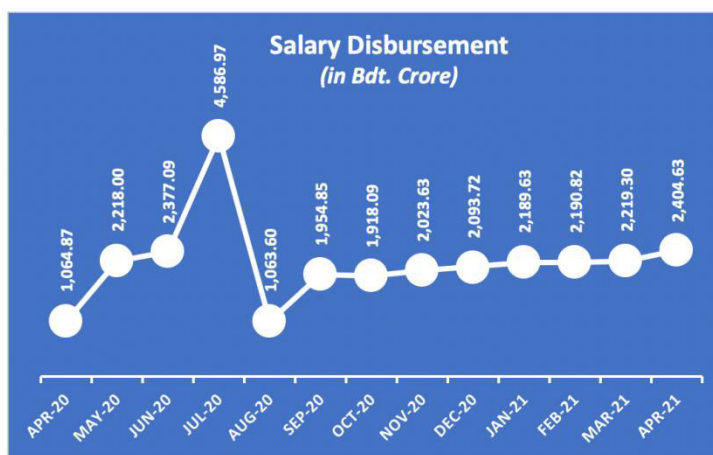
Bangladesh government has started disbursement of millions of poor beneficiaries' different allowances under its "Social Safety Net" Programmers; old age allowance, widow allowances, maternity allowance, students receiving scholarships through MFS, which facilitating the poor and vulnerable to have a convenient mode for receiving cash transfers. In 2019-2020 fiscal year, the government took plan to distribute Tk 5,885.6 crore in total among 8.85 million beneficiaries. Out of a total of 8.85 million beneficiaries 7.613 million beneficiaries have been assigned separately to disbursed through Nagad and bKash. Currently the ratio between Nagad and bKash in 75% and 25% respectively. Rest beneficiaries are already been covered by agent banking channel. The two MFS market leaders are having competitions to grab as much as portion of the G2P disbursement.

Number of beneficiaries in 16 Social Safety Net programs covered Under G2P is 35 Million. Number of beneficiaries covered under G2P till March'21 is 10.5 Million. So, both government and G2P cashless transfer service providers have to go a long way. Government and respective stakeholders need to be highly cooperative towards cashless transfer service providers to achieve the vision to bring all beneficiaries under cashless transfer umbrella. A dedicated central database is required to maintain and upgrade the massive data. NID database should be made accessible to all relevant government agencies or eligible institutions and to connect with this central database. Secure and equal required access in the central database is needed for all service providers to ensure quality and enhance efficiency.

G2P payment disbursement in April'21 was BDT. 733.80 crore, which is the result of continuous initiatives of the government for stepping into cash less ecosystem and also the highest total disbursed in one month since it has started. In next fiscal year 1.4 million additional people will be enlisted by 3 different programs under social

safety net. There will be additional allocation of BDT. 936 crore in financial budget. Asian Development Bank will provide this amount to the government. The plan to disburse this amount through MFS. But considering the receivers segment of this payment, most of the amount are cash out from the account, because, this segment does not have such facility and required awareness and literacy level (very nominal few options) to utilize the electronic money as further payment into the cashless ecosystem cycle.

Besides 2% incentive as promotion, wage earners inward remittance receipt is gradually increasing in MFS accounts considering less hassle of withdrawing comparing to bank branches. Bangladesh Bank is persistently working towards bringing the inward remittance through legal channels. Banks and MFS services providers are also continuously growing their remittance partners portfolio if different countries. Taking more initiatives including new innovative products for both remittance senders and receivers can obviously lead to increase use of legal channel for sending remittance. In 9th August 2019, FE Circular No.: 32, Bangladesh Bank has introduced guideline for “Deposit products for Non-Resident Bangladeshis (NRBs) working abroad”. Hassle free easier enrolment, proper promotion and awareness of this product shall definitely have a positive impact on growth of inward remittance amount.

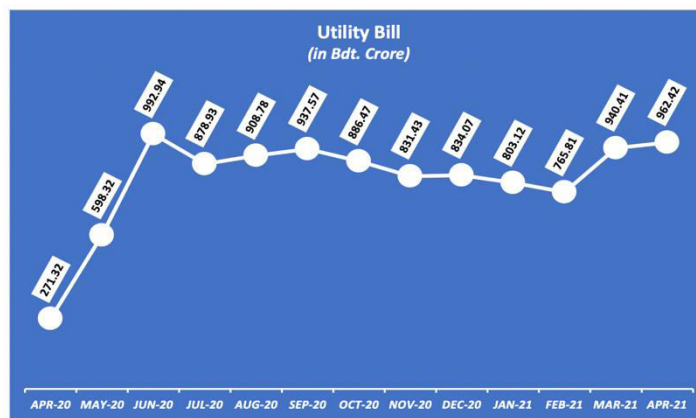


In 2020, number of workers in Ready-Made Garments (RMG) was 4.22 million. Salary disbursement through MFS gradually adopted by RMG industry not only for requirements by different buyers’ compliance to digitalize and transparency workers payment, also reducing risk and time of the industry owners. Besides, such beneficiary group is mostly uncomfortable to have and use bank account due many factors, different charges of a bank account is one of the major concerns. Whereas MFS account doesn’t have any such charges till today comparative to bank account. In this covid-19 pandemic about 3.0 million apparel workers opened MFS accounts, which is very a good addition to the vision of cashless / digital financial ecosystem, but lack of literacy, effective communication and awareness creation gap, fear of using MFS account are the barrier to build this segment an active user base. A survey conducted by the Asian Center for Development found that this sector workers sent Tk 1,011 crore in remittance per month to the rural economy. Though few features of bank account are not yet available in MFS account. The MFS market leaders are highly focused to capture this large segment too, but yet to work a lot, even they have a dedicated sales team, due to its market size. In July’20, suddenly the salary disbursement increased 93% from June’20 because government made it mandatory for stimulus receivers to pay the wages through digital payment service providers. But dropped 76.8% in August’20. Cash out charge is a major concern for both the owners and workers of such industries, mostly none of the party are willing to bear the cash out charge as it an extra burden for both. Though after the drop in August’21, the

disbursement amount volume has grown and continuing in a bit stable trend for last 8 months which is a very positive sign of coming back in pace. Different development organizations are also working jointly with government and service providers towards bringing this segment under cashless / digital ecosystem. Other industries have also availed this service not only to disburse salaries, but also different kinds of payment disbursement and its being popular gradually.

If G2P, remittance and salary receivers' segments can be connected with 1,13,000 micro-merchants with through innovative and convenient products in their transaction value chain, that will be a remarkable step in towards cashless ecosystem with huge transaction number and volume.

Person to Person (P2P) transfer is the most used service after cash in and cash out due to being most convenient and fastest method of transferring money specifically small ticket size, maximum BDT. 25,000/day, BDT. 200,000/month. Even total transaction volume of P2P crossed total cash out transaction volume in April'21. Though interbank transfer is live through internet banking, but there are cutoff times for such transaction in two different method; BEFTN (Bangladesh electronic fund transfer) and RTGS (real time gross settlement), none of them are executed instantly. After cutoff time on a business day and holidays, customer need to wait at least for next business day. So, Bangladesh Bank need to work on this interbank fund transfer to make it instant for any days, any time and for any amount. Add fund from bank account in MFS account and e-wallet and fund transfer to bank are also affected by BEFTN and RTGS rules. Whereas add fund from cards are instant and VISA, Mastercard becomes the first movers than banks. But the banks are opening their doors to incorporate with MFS and e-Wallet service providers gradually and many banks has already joined this pace.



Another large market segment which can be defined mostly untapped due its market size is utility bill payment which are gradually is growing trend aimed at accepting digital payments. Though the covid-19 pandemic is playing a vital role for this growing trend for last 1 year, but still peoples are habituated and comfortable with paying the bills in bank branches and having a signed and sealed paper document, specifically on paper copy of bill or bill deposit book provided by utility service providers. Besides, utility service providers' technological infrastructures are not completely equipped, automated and resources are not well trained to convert themselves towards 100% digital service providers. Continuous effective communication, awareness creation and building trust on digital payments are highly required to make the users pay all types utility bills through digital payment channels alongside technological development of utility service providers.

Agent banking account stood 1.102+ Crore in March'21 after launching of first agent banking service in the country and agent number with agent outlet growth also remarkable from March'20 to March'21 considering the business model and compliance requirements by Bangladesh Bank. The two major banking product (deposit and loan) which are not covered by MFS right now, agent banking is doing well in agent banking. Alongside, remittance withdrawal from agent banking channels are remarkably in growing trend.

<i>Agent Banking</i>	<i>March'20</i>	<i>March'21</i>	<i>Growth</i>
Agent Number	8,260	12,345	49.46%
Outlet Number	11,875	16,421	38.28%
Account Number	6,497,451	11,022,646	69.65%
Deposit Collection (in BDT Crore)	8,535.04	17,822.39	108.81%
Loan Disbursement (in BDT Crore)	673.92	2,501.00	271.11%
Remittance (in BDT Crore)	19,535.33	58,399.09	198.94%

Through this channel banks can create their footprints in urban areas and flourish their strength of physical presence in a cost-effective way to serve the low transaction volume customer segment who are also not comfortable to get banking services from bank branches. As 57% of the micro-merchants still does not have bank account, agent banking channel can focus on acquire them which may lead to add a good amount in loan disbursement portfolio. Besides, having savings product specially focusing on low income group people, G2P and remittance receivers can also have significant increase in deposit collection volume in agent banking. And such initiatives will also increase the agent's income and attract and create more entrepreneurs and job for urban and rural unemployed resources. So, banks should be more focused on agent banking in urban and rural areas to reach unbanked population rather than expanding their branches in city areas only.

The PSP license holders are still struggling to make their visible stand for many competitive survival factors, whereas PSO license holders are doing good in their arena, but the market share is very small considering MFS and Agent Banking due to their license category dominion. But few of the them has already availed PCI-DSS (Payment Card Industry Data Security Standard) certification, an information security standard for organizations that handle branded credit cards from the major card schemes, administered by the Payment Card Industry Security Standards Council and the standard was created to increase controls around cardholder data to reduce credit card fraud.

NBFIs and MFIs are yet to join in this DFS revolution race, though few have already stepped into the area, but with very tiny initiatives. These two segments need to work a lot, especially in technical part to sustain and match the pace DFS race and they have lots of scope to do so to contribute in the cashless / Digital Financial ecosystem.

Some new initiatives by financial institution

Bank Asia is set to form a neobank. This is thoroughly a novel concept for Bangladesh, which can change the face of financial inclusion in the banking industry of our country. A neobank is a kind of digital banking operation where no branch is required as the service would totally be delivered online, also can facilitate to mobilize

deposits and loan disbursement. To conduct digital banking activities, Bank Asia Ltd. has decided to form a subsidiary company, subject to obtaining required approval from regulators.

Also, Managing Director of Nagad (Third Wave Technologies Ltd.) has recently announces his plan in a webinar organized by Asian Institute of Technology (AIT) to open a digital bank by 2020 aim to provide 360-degree financial services.

And Covid-19 pandemic has also converting more people to transact digitally. Day by day people are realizing the handiness of Digital Financial Services and being part of the Digital Financial/Cashless ecosystem.

Careers in Digital Financial Services

Bread and butter of Mobile Financial Services (MFS) and Agent Banking business mainly depends on two major division of respective organization; Sales and Technology. Where sales team largely includes Distribution Sales, Business/Corporate Sales and Merchant. Success of distribution sales foundation is its distribution network coverage. As per Bangladesh Bank data, MFS agent in April 2021 is 1,061,780 and Agent Banking Agent in March 2021 is 12,345 and Agent Banking outlet is 16,421. To maintain such large number of distribution network required large number of distribution team with several layers.

Currently the two major player of MFS business (bKash and Nagad) has large distribution team and more new resources recruitment both experienced and fresher is a continuous process based on the business need. These two market players also have big team of Business/Corporate sales and merchant acquiring team. There are two more new player has entered in to the market recently, Trust Axiata Digital Ltd. (Tap) and UCB Fintech Company Ltd. (Upay). They are being considered to be next foremost competitor in MFS market in Bangladesh. And their recruitment is ongoing. Most of the experience distribution sales people working in MFS and Agent Baking has come from telecom industry, rest are mostly from FMGC industry. Business/Corporate Sales and Merchant acquiring team have blending recourses from many different industries. Still there is huge scarcity of expert resources in DFS industry. Most of the cases, existing resources are being recruited while expansion of the business or staring new one offering them better opportunity in terms of upgraded position and remuneration. Otherwise, resources from other industries with similar experiences are recruited. Opportunity for fresher in distribution sales, business/corporate sales and merchant acquiring team are also increasing with continuous expansion and growth of the industry. So, those who are extrovert, enjoy meeting with new people along frequent traveling, have passion for outdoor sales and also love to play with achieving numbers and be the front-line brand ambassador, can choose distribution sales or business/corporate sales or merchant acquiring job.

As DFS business is technology dependent, a large number of team members are required for its different departments and wings; Software Engineering, Data Engineering, Solution Architect, Technology Project Management, Database Management, Product Development & Management, Enterprise IT Support, IT Governance, IT Operations & Services, BI and Reporting, Geo Informatics, Data Analytics, App Development & Operations, Business Analyst, etc.. With the expansion of business, technology team also need to expand its different department and wings to ensure the uninterrupted services. Besides many technological product and services are out sources locally, so there are a good number of opportunities in IT companies for both experienced and fresher.

After, sales and technology team, customer service and operation team contributing the next level importance with large number of resources. These two teams are basically back office base desk job. The human resource,

administration and finance divisions are playing vital roles to manage and support the respective divisional activities which also assist the business to run smoothly. Resource requirements for these teams have increasing demand for both experience and fresher.

As already mentioned, that only 15 MFS and 27 Agent Banking licenses are in operation, but most of them are not fully utilized and haven't create their foot print all over the country, they are yet to expand their business. Rest of the banks may join this race gradually in future, more different category new DFS license (PSP, PSO) are in pipeline for issuance and there will be scarcity of resources with required experience and expertise alongside large number of fresh resources will have the opportunity to start and grow their career in DFS industry.

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DEVELOPMENTS IN ADVERTISING INDUSTRY AND CAREER POTENTIALS IN DIGITAL ERA: AN OVERVIEW

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Abstract:

Advertisement as a mass communication method had been going through sea changes in recent years. As industrial revolution offered an unprecedented business opportunity, mass communication and advertisement became the method of choice for the manufacturers and government agencies. Newspaper advertisements boosted sale of products while printing technology made creative illustrations possible. Twentieth century saw advertisements being used in every sphere of public life and from the 1960s through the 1980s, often called the golden age of advertisement, many other academic disciplines such as psychology and statistics joined hands with advertisement industry to flourish at enormous rate. This growth trend was unchecked until the rise of digital revolution that took place in the 1990s. With newer and novel techniques that internet brought to the desk of creative designers, online advertise soon reached its maturity within a short decade. Finally, with the rise of social media, digital advertisement industry came of age and newer tools such as predictive analysis and data sharing became available. Today we see a novel model of creatives, who are armed with technical skills that were once thought 'back-end' model. Career in advertisement in digital age today offers completely new opportunities.

Keywords:

Marketing, communication, advertisement, data science, business, social media, predictive models, behavioral science, consumer.

Changing face of Advertisement and Marketing in 21st Century:

Within the industry, advertising is just one type of marketing communication. Other types of marketing communication that are not normally defined as advertising include: packaging; sales promotions (money-offs, two-for-ones, competitions, and the like); catalogues; shop windows and in-store publicity; brand placements in television programs and films; commercial emails; brand names on clothes and other goods; public relations (brand mentions in the media); commercial websites and blogs; and telephone selling. All of these (and many others), are marketing communications, and are often used to increase the sales of things. But within the industry they are not defined as advertisements, nor as advertising.

So what exactly is an advertisement? Though it is a mite blurred at the edges, a good working definition is: An advertisement is a paid-for communication intended to inform and/or persuade one or more people.

Prior to the creation of the internet in the early nineties, which gave birth to the dot-com era and many cloud-based businesses, advertising was centered around print and other tangible forms of media and advertisements and were far less niche-oriented as we know today.

The wake of the dot-com era, however, led to the development of internet marketing,. Highly data-driven and market-oriented, internet marketing has three cornerstone principles:

- i) **Immediacy**-The web changes at a blistering pace and online audiences, whose attention spans are short, expect on-the-minute updates and information. To keep the favour and attention of this group, you must respond to online messages and interact with communities as quickly as possible.
- ii) **Personalization**- Customers online are no longer faceless members of a broad target audience – they are individuals who want to be addressed personally. Use the wealth of personal information available online to your benefit by targeting the relevant people precisely and personally.
- iii) **Relevance**-Communication online must be interesting and relevant to the reader, otherwise it will simply be ignored. With all the information that is competing for your audience’s attention, you must find a way to stand out and engage readers. The best way to do this is by giving them exactly what they want, when they want it.

Rise of Advertisement during Industrial Revolution:

By some historians’ measure, after the discovery of agriculture, the Industrial Revolution is the most important event in the history of civilization. It introduced the modern capitalist economy, established Great Britain as the world’s most powerful empire, accelerated European colonialism, reopened trade routes to Asia and the Middle East, and turned America into a legitimate state power on the global stage. It also destabilized age-old political structures, transformed cities into smoggy, disease-filled dystopias, prompted violent revolutions, and radically altered day-to-day life for people across the world, for better and worse.

But for those able to capitalize, the Industrial Revolution was an unprecedented business opportunity – and resourceful businessmen (mostly men) did very well. Because of its capitalist foundation, the Industrial Revolution was also the first time in history marketing and advertising were practiced on a large scale. Governments needed to publicize their new canals and railroads; craftsmen needed to promote their affordable textiles; engineers needed to showcase their inventions as superior to old models and current competitors.

With the Industrial Revolution manufacturers were able to produce more goods in less time and were no longer restricted to local markets. They needed to persuade consumers all over the country – and sometimes in other parts of the world – about the benefits of their products compared to those of their competitors. Newspapers, which had become cheaper and more widely available, were the perfect way to reach this mass market of potential customers. These first advertisements just had simple descriptions of the products, with the price.

By the mid-19th century it was possible to add illustrations. The language changed too and became more persuasive. And by the late 19th century, as manufacturers faced increased competition and began to understand the importance of advertising in getting their products known and sold, the first advertising agencies were set up. They offered the services of illustrators and copywriters to produce specifically designed adverts. They began to research the company and product, as well as the target market, and also started to monitor sales in relation to advertising campaigns.

The Classical and Golden Era of Advertisements:

The 1960s through the late 1980s have been characterized as the “Golden Age of Advertising.” We have seen it chronicled everywhere in popular TV series such as *Thirty something*, *Bewitched* and ultimately *Mad Men*. But the glamorization of the “Golden Age of Advertising” has factual roots in history. Professionals in the industry started thinking out big ideas, relying on psychology and big data, and allocating big budgets. In the 1960s,

advertising transformed into a real science with teams of psychologists, focus groups, and researchers. Until the early sixties, advertisements consisted of realistic visualizations that were intellectual and conceptual in nature. Advertising in the sixties, however, were met with an audience that strived towards philosophical idealisms and spirituality after experiencing years of post-war trauma and had a newfound appreciation for aesthetics more than ever before. Advertising agencies soon realized that their target markets were beginning to look far beyond product specifications and the benefits that come with it. Creative advertisements soon came into effect, which were created with the aim of triggering emotions in their target consumers, which would result in lasting brand loyalty and high levels of sentiment-induced sales; a trend that would stretch on to the seventies as we know it.

The fifties and early sixties by comparison to the seventies were highly print-oriented in terms of advertisement medium. However, this changed drastically from the mid-sixties. With the television becoming an ever-so-popular medium of information and entertainment, advertisers found a way to take advantage of this paradigm shift from print to television and a way that allowed them to exploit the immensely short attention span of the average consumer. Companies that produced mass-marketed goods created catchy commercials that were shorter than a minute in duration and played them day and night over national television channels.

A lack of restrictions from the government and weak regulations in the advertising industry in itself allowed big-time cigarette manufacturers such as Lucky Strike, Marlboro and Kent to introduce vague *Unique Selling Propositions* (USP) that were often not backed by scientific research and implanted a need for their goods in the minds of their target consumer market. Unintentionally perhaps, their repetitive, catchy jingles and short commercials that boosted smoking as a status symbol went far beyond psychologically manipulating their consumer choices and left a culturally significant impact on the sixties: smoking became not just a habit, it became a symbol of high fashion among women and a way to project masculinity among men.

Advertising in the seventies experienced a major breakthrough. Brand development and advertising in itself was becoming too competitively risky and in order to determine the effectiveness of TV and print promotion, firms began to undertake a slavish adherence to market testing and focus groups, which often had a say in altering (or mutilating) campaigns to conform to mass opinion. Racial and ethnic barriers had also been eradicated to a major extent, which meant African-Americans and other “minorities” were participating in general advertising more than ever before.

Changing Faces of Advertisements in Digital Era:

The Digital Revolution came around the wake of the dot-com period. Everything accelerated in the early 1990s as Tim Berners-Lee, acknowledged as the creator of the internet as we know it today, built on his earlier revolutionary work and released the URL protocol, web browser software and the World Wide Web to the public. By 1993, businesses started taking an interest in the internet. The debate raged about whether they were permitted to use the internet for commercial purposes, since it had been established as a strictly educational and non-commercial arena. Eventually, however, the businesses won out and the last of these restrictions were dissolved in 1995 and the internet advertising industry took off. To put the growth in perspective, US online advertising spend in 1994 was zero dollars, and leapt up to \$301 million in 1996. Another year later, the market was worth \$1 billion. Search engine optimization (SEO) started tentatively in 1995, relying on luck and guesswork before hackers managed to crack the first algorithms in 1997. Companies began thinking about advert placement and started buying advertising space on related websites, with links back to their pages and often accompanied with data-gathering measures such as asking customers to enter their contact

information. In 1998, Hot Wired began selling banner advertising space to large corporate clients and achieved a remarkable 30% click-through rate.

Online search portal Yahoo capitalized on this trend and offered advertising space on its massively popular home page, quickly developing extra software for tracking user preferences so it could target the advertising more effectively; it became one of the few “dotcom” companies to earn a tidy profit from online advertising. Google took the idea, streamlined it and improved the advert-targeting algorithms. In 2000, it introduced Ad Words, an advertising service that allowed marketers to pay only for adverts that were clicked on by a customer. The strategy, which accounts for 95% of Google’s current revenue, became phenomenally successful and is now the benchmark search engine advertising method.

The last and most profound change to the marketing space was the rise of social media, which was gradual from 2004 and meteoric from 2006. Social media platforms, such as social networking sites, opened the space for user-filtered and recommended content – including marketing material. As the social media platforms grew and people created exponentially more connections with each other, the vision of viral marketing – the online equivalent of word of mouth – became real. On the other hand, it made the necessity for online reputation management clear, a lesson that computer company Dell learned the hard way during the infamous “Dell hell” scandal in 2005.

Creative Art and Behavioral Science:

The growing influence of data science is no less pronounced in industries where the output is creative. It may, in fact, be more pronounced, or at least more transformative.

In the world of marketing and advertising, where the task is to build brands that engage with individuals to build business, it is impossible to overlook the flood of newly available data made possible by the explosive growth of digital channels and devices, each creating its own unique stream of actionable information.

While data has always played a role, it has traditionally been through the “rear view” measurement of past behaviors, self-reported qualitative assessments or activities siloed as “CRM.” In contrast, predictive analytics utilizing this newly available data is forward-looking. It enables marketers to model data to anticipate what is likely to happen if an individual receives a certain type of message, invitation, or incentive as part of a creative communication at a designated point in their engagement.

While many companies continue down the traditional road of “mass advertising,” more and more are taking advantage of the growing opportunity to better understand, reach and engage their brands’ potential consumers and advocates. For them, the result has been a sea change in how the industry’s creative products are conceived, implemented and measured – from on-line advertising, mobile applications and websites to broadcast spots, print ads and events.

One can understand these changes by considering four specific opportunities for the creative development process and data science to intersect:

- i) **Predictively inform creative directions.** The rise of the strategic planning discipline has largely been a result of its ability to synthesize insights that inspire great work by creative teams. Predictive analytics, properly applied, has the potential to take that inspiration to the next level. In the right hands, predictive models can provide guidance, guidelines or even boundaries for creative teams based on data-fueled insights into what types of messages, programs or offers are likely to produce the desired results from key consumers. Great

creative thinkers typically value actionable insights that can provide them a springboard to more unique and effective creative solutions. Despite concerns by traditionalists, these insights shouldn't and couldn't replace creative inspiration, but instead, when properly utilized, be a powerful catalyst for it. At this point in the process, the data scientists and their predictive models can function in service of informing and inspiring creative teams to deliver the most engaging creative work possible.

- ii) **Create data sharing opportunities.** As more and more creative communications take digital form, there are more and more possibilities to organically build data collection opportunities into them. From an on-line ad unit to a mobile application, there are myriad places where the seamless integration of data sharing occasions can create value and enhance (or at least not interfere with) consumers' experiences. The challenge is to conceive these opportunities to deliver what the consumer values and to build them into experiences in authentic and organic ways. Both of these goals are best achieved when opportunities are designed into interactions from the outset. This is another place where collaborations between data scientists and their creative cohorts can be so powerful and effective. By identifying what marketers are hoping to learn about their consumers to more effectively serve them, tailoring the engagements to create value for them, and planning for their seamless integration, brands can take a large step toward delivering the right message to the right audience at the right time. If the marketer's goal is to continue and deepen engagement with their consumers, creatively learning about and providing what the consumer values will always be a powerful tool.
- iii) **Target creative executions.** Predictive models can become the basis upon which targeted creative executions are conceived, designed, developed and deployed. As more marketing becomes one-to-one marketing, the ability to model individuals' expected responses to programs, offers and messages can make developing targeted creative elements more efficient and executing them more effective. Data scientists can provide their creative co-workers with valuable insights into the types of communications that will generate the desired results, as well as invaluable cautions as to potential unintended consequences highlighted by their models. These collaborations can provide guidance to not only the content of the creative product, but also its form, including the optimal media channel for delivery. As marketing communications become more individualized, they will not only provide consumers with experiences they will find more valuable, they will drive more frequent interactions between creative teams and their data science counterparts.
- iv) **Optimize creativity predictively.** Optimizing messaging had traditionally taken the form of in-market testing, creative revisions, followed by more in-market testing, and so on. With predictive analytics, the expected responses to creative elements can be modeled before they appear in market, creating opportunities to optimize their execution and pre-calibrate in-market expectations. Modeling the expected impact of creative elements creates a fourth opportunity for the intersection of creativity and data science. Once again, the data scientist can provide a valuable service to creative teams, enabling them to preview how the consumer would respond to creative elements and test any adjustments they'd like to make. This interaction can enable the creative teams to explore which of a series of potential campaigns, messages or calls-to-action they are considering is predicted to be most engaging to their consumer. The model can become a "creative tool" that facilitates exploration, validates instincts and identifies pitfalls, long before any piece of creative makes it to market.

Enabling these intersections between creativity and data science requires not only a new kind of creative, but a new creative model. In a traditional agency, you would find creative and analysts living in different worlds, likely never working together or even meeting. In today's leading edge firms, a diverse group of cross-disciplinary creative and data scientists not only sit side-by-side but collaborate, finding new ways to hard wire opportunities

for data capture and utilization throughout the creative campaigns. This partnership with data scientists is fostering a new breed of creative thinker who is imagining new ways to add value to consumer experiences by deepening stories and tailoring content to individuals.

What used to be considered the “back-end” is now upfront in creative development, and rather than constricting creativity, it can open doors to new, varied creative ideas that are measurably more effective in producing business results. That is the real potential power when data science and creativity meet.

The Future of Career in Advertisement:

In the future, advertising will be more targetable and much more measurable. Marketers will be able to add first-party data and syndicated data to anything and everything. And because most of the advertising will be done digitally, there will be more self-selection, and more of it will be native. Advertising research has become crucial for agencies who strive to sustain in the industry, and the demand for teams of data analysts, psychologists and research experts who will be needed to work hand-in-hand with creative professionals will be substantially high in the near future.

Conclusion:

William Bernbach, one of the giants of American advertising in the 1960s and 1970s famously said of his profession, “Advertising is fundamentally persuasion and persuasion happens to be not a science, but an art.” That may still be true. But the case for advertising as a science is surely getting stronger. The biggest change, of course, is the explosion of data now available to advertisers as they try to connect with consumers across a multitude of platforms. This further solidifies the fact that the digital era of advertising not only requires professionals from creative majors such as English and Creative Arts, but professionals from diverse backgrounds such as Psychology, Data Science, and Computer Analytics.

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