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Editorial

It is my pleasure to bring to you this volume of the East West Journal of Business and Social Studies. Like all other parts of the world, we also went into a state of hibernation for two years since March 2020. The campus was closed, and we were teaching using online platforms. The journey was difficult for all. With more than 6 million deaths and more than 458 million infected people in the world, it is hard to find anyone, who did not experience a death in their extended families. At EWU we also lost a few. Several of my colleagues lost their immediate family members too. We deeply mourn for their death and humbly remember their contribution to our life. In particular, I would like to recall the sudden demise of Principal Niloufer Manzur – a family member of EWU and an academic who brought changes in the life of thousands of students. She was a role model and a legend to her students.

This volume contains six research articles on issues related to our society and the contemporary business world. Ruhun Wasata has examined how a digital platform created by the Government of Bangladesh helped to empower women in rural areas. Saad Hassan and others studied an e-Commerce firm and unearthed the glitches in their operations and supply chain. Md. Sanaul Haque Mondal explored the risk perception of riverine households to recurrent flood disasters. He has brought in perceptions from the people living on the bank of Teesta river in Bangladesh. Sardana Islam Khan and Tasmiha Tarafder critically reviewed the changes in the Australian higher education system and its impact on their higher education ‘industry’. On the other hand, Farhana Ferdousi in her research studied the impact of quality assurance practices on higher education institutions of Bangladesh. Finally, Suman Roy and A K Enamul Haque examined how different age groups or generations in Bangladesh use media to receive and process information on social issues. The variety of research topics published in this volume follows the unique characteristics of this journal. We expect this volume to be read and discussed by the academics and researchers in Bangladesh and in South Asia.

Finally, I would like to express my gratitude to all the referees, the English Editor, and the Editorial Board members for their time to examine the submissions. The delay is, of course, due to the pandemic and I express my sincere apology to all of you. Dr. Rafiqul Huda Chaudhury, the Chairperson of the East West University Center for Research and Training is special to all of us, without his motivation it would have been difficult to publish this volume during this challenging period of human history. I am grateful to him.

Dr A K Enamul Haque
Editor, EWJBSS, Dhaka

Analyzing the Effectiveness of Access to Information (a2i) Program in Promoting Women Empowerment in Selected Areas of Bangladesh: A Case Study of Shimulia Union Parishad and Muksudpur Union Parishad, Dhaka District

Ruhun Wasata*

Abstract

Access to Information (a2i) is a Government led nationwide program with 4,547 Union Digital Centers (UDCs) at every Union with two (one female and one male) entrepreneurs. With the aim of investigating to what extent 'a2i' is effective in promoting women empowerment through women entrepreneurship, this paper analyzed primary data collected from Shimulia Union Parishad (UP) and Muksudpur UP, Dhaka, Bangladesh. This paper indicates that the socioeconomic barriers are causing a2i program to have a less profound impact on promoting women empowerment through women entrepreneurship. With different recommendations from program level and policy level, this paper proposes that the design, redesign, and implementation of the a2i program should have a flexible characteristic so that it can address the socioeconomic challenges from within the scope of the program.

Keywords: Women Empowerment, Women Entrepreneurship, a2i Program, Barriers to Women Entrepreneurs.

1. Introduction

Access to Information (a2i) is a program conducted in Bangladesh in a partnership between the Government of Bangladesh (GoB) and the United Nations Development Program (UNDP). The program seeks to promote increased access to services and information by establishing e-service delivery centers – Union Digital Centers (UDC) in every Union Parishad (UP) (the lowest tier of local government). With an average distance of 3 Km, there are a total of 4,547 UDCs out of a total of 4,554 Ups. The establishment of UDCs under the a2i program is a unique initiative and remarkable progress for achieving digital Bangladesh as these centers provide information and services to the people of UP.

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Altogether around 40 different types of services are provided by UDCs. A male and a female entrepreneurs manage all the UDCs. Recruiting women entrepreneurs at the UDCs created possibilities for reducing gender inequality at local government. Entrepreneurs receive training from the GoB before taking over the charges at the UDCs. One important thing worth mentioning here is that the definition of entrepreneurs in the UDCs differs from the traditional entrepreneurs who take different creative initiatives. Instead, these entrepreneurs are generally recruited and supported by the GoB. The entire infrastructure of the UDCs is provided by the GoB and entrepreneurs are recruited there for managing the systems and providing services for the people on behalf of the GoB. The nuance of entrepreneurs, hence, is different from the conventional understandings of entrepreneurship.

In recognition of the success of a2i, the GoB and a2i program have received multiple awards and honors around the world. Both a2i and UDC and their implications in different sectors of Bangladesh have been serving as an area of research and analysis in academia. Nevertheless, despite a2i and the UDCs both having been researched extensively, available studies have not taken into consideration the aspect of women entrepreneurship and their empowerment under the a2i program. In various facets, a2i is indeed calling forth great results; however, to what extent is it promoting women empowerment through women entrepreneurship? The research on which this paper is based on aims to find out to what extent the a2i program is successful in promoting women empowerment via women entrepreneurship. This paper discusses the qualitative findings of a mixed-methods research funded by East West University Center for Research and Training (EWUCRT).

The research-question this paper gives the answer to is:

“Whether and to what extent is the a2i program contributing to women empowerment for developing women entrepreneurship in Bangladesh?”

EWUCRT already published an extensive report of the completed research. This paper aims to present the qualitative findings of the study along with future policy recommendation and further research possibilities. a2i as a program created opportunities for women to engage in entrepreneurial activities at the local government level. This research is useful to enhance understanding of how institutions and programs such as a2i can generate technology-based women employment opportunities, and barriers women experience for providing service at the local government.

This research has great potential for future research possibilities. This research provides an opportunity to perform longitudinal studies in these two research sites in the future. Furthermore, these two samples can be used as reference points for other UDCs' performance towards empowering women entrepreneurs.

2. Rationale

With the advent of an increasing need for entrepreneurship for economic development, it is understood that women's entrepreneurship can be beneficial for changing women's deprived socioeconomic situations in a patriarchal country such as Bangladesh (Carter & Weeks, 2002). a2i is attracting scholars of different spectrums to research and analyze its different achievements, but to date, no research has looked into the effectiveness of a2i as a program for women empowerment. The effectiveness of a2i to promote women empowerment should be looked into with immense importance.

Since incorporating a2i in the field of academic research is a new dimension, it is a challenging one. This research in turn can create new possibilities for academic research as well as realistic potentials for stimulating women entrepreneurship. This research asks whether or not the a2i program is impacting the lives of women entrepreneurs in UDC, family members' lives, and the larger community. To understand the power relations of the women entrepreneurs with their families, communities, and co-workers is another outcome having foreseeably positive future impact.

The research aimed to find out if the program helped women entrepreneurs to build capacities. This information can be used in future research to understand these changes. To see the long-term effect of the capacity building, this research has created a scope for a longitudinal study. In the future, this research endeavor can also work as a partial evaluation of the program implications of a2i.

Moreover, the literature on entrepreneurship and empowerment does not deal on a significant scale with how formal institutions hinder or promote women's entrepreneurship. Despite many economic theories and studies on entrepreneurship being embedded within the formal institutional environments, there has been limited research on explaining how the supply and demand of entrepreneurs can be influenced by providing or withholding, through formal institutions, resources and skills for some groups of people and not for others (Goltz, 2015). This research aims to

examine the effectiveness of a formal program promoting women entrepreneurs and the influence of a formal program on women's empowerment.

3. Literature Review and Theoretical Framework

3.1 Women Empowerment

Defining empowerment, particularly women empowerment, is a very complex issue. The literature on women empowerment can be divided into two broad categories: political or civic engagement, and economic independence.

Academicians who have seen empowerment from political perspectives, among them Naila Kabeer (1995, 1999, 2001, 2005, 2008, 2012) in her vast array of work has established and maintained that the central idea associated with empowerment is 'power'. 'Empowerment' is the ability to make choices. The choice depends on more than one option, in other words, the availability of alternatives. The idea of choice is meaningless if there is no available alternative. As she further exemplifies, it is also important to understand that all choices do not play an equal role in the equation of power. Different choices will bring different consequences in the lives of a person. Kabeer associated meaningful choice, availability of options, and how women make choices with empowerment.

Like Kabeer, Jane L. Parpart includes the concept 'choice' in the definition of empowerment and has written that empowerment is the ability to make choices, to speak out, to choose, and to challenge established gender hierarchies (Parpart, 2010). However, in her definition, she showed that choice is effective and meaningful only when choices enable an individual or group to challenge gender hierarchies. If silence cannot be broken and voices cannot be made heard, ethical, analytical, and methodological implications of researching and writing about women's empowerment will be futile (Parpart, 2010).

The second scholarship of empowerment views it from an economic dimension. John Friedman (2006) has identified empowerment as an alternative strategy to the traditional way of promoting development. He emphasizes how the economic transformation of an individual at first and a group of people later transforms society as a whole eventually.

In Bangladesh, research on empowerment has not only seen it from both political and economic dimensions but also incorporated other factors which are vital in the country's context. In a milestone study conducted by

Hashemi, Schuler, and Riley (1996) on Rural Credit Programs and Women's Empowerment in Bangladesh, they identified several reasons behind the isolation and subordination of women in (rural) Bangladesh. Some of these reasons are, but are not limited to: "systems of patrilineal descent, patrilocal residence and purdah system (system of secluding and protecting women from upholding social standards of modesty and morality)" (Hashemi et al. 1996, p, 67).

In the study, researchers clearly stated both behaviors and attitudes of every society affect the measurement of women's empowerment; therefore, the definition of women's empowerment may vary from society to society. Even within the almost homogeneous rural society of Bangladesh, the lives of women and men may vary according to different determinants of geography, physical infrastructure, and the configuration of different social and economic opportunities. After clarifying these issues, researchers chose eight indicators of women's empowerment: mobility, economic security, the ability to make small purchases, the ability to make large purchases, involvement in major household decisions, relative freedom from domination within the family, political and legal awareness and participation in political campaigns and protests.

In conclusion, a development program in the Bangladeshi context is successful in empowering women if it effectively enables a woman to make meaningful decisions for herself and her surroundings. In addition, if the development program has allowed a woman to have control over the surroundings in terms of self-confidence, mobility, activities outside of the house, the ability to motivate others; and to have the economic ability to make both small and big purchases, along with capital building for own future use, it will be considered successful.

3.2 Women Entrepreneurship

In the 1970s and 1980s, different authors contributed to the definition of entrepreneurship, and associated entrepreneurship mostly with economic endeavors. According to ideas generated in these two decades, entrepreneurship should be characterized by "strategic orientation, commitment to opportunity, resource provision and control, the concept of management, and compensation policy" (Nimalathasan, 2000, p. 4). This is the implicit "psychological theory of entrepreneurship" according to which an entrepreneur must produce and demonstrate profound psychological and behavioral attributes to "manage, control difficulties and overcome uncertainty" (Loh & Dahesihsari, 2013, p. 108).

Since a great emphasis has been given on perceiving entrepreneurship as an individual approach, the importance of the overall socioeconomic-political structure and its relationship to entrepreneurship has been ignored tremendously (Goltz, 2015). This one-sided approach has also inadvertently influenced the way women empowerment is/has been associated with entrepreneurial activities. If women entrepreneurial activities and its association with women empowerment can be viewed from the country-specific cultural lens, that can provide a more authentic and contextual analysis of problems and probable solutions to those problems (Goltz, 2015).

The sociological theory of entrepreneurship defines entrepreneurship as an element of the socioeconomic-political-cultural-religious interactive structure. Entrepreneurs thrive where the social structure is in favor of them and fail where the social structure is unfavorable. To emphasize, Hughes (2012) suggested that entrepreneurship should be viewed more as a catalyst for making overall changes rather than as an instrument to bring in economic changes only.

The feminist theory of entrepreneurship is an amalgamation of the other two schools of thought previously mentioned. However, there are a couple of departure points of feminist entrepreneurship theory from the other two schools of thought. These are: 1) It understands that the entrepreneurs are the product of social knowledge shaped by the people who are in power or acting as authority; 2) Entrepreneurs act within the social construct of gender role and responsibilities, and 3) Entrepreneurs operate within an unequal society in terms of gender roles and identities. Therefore, the treatment of women entrepreneurs is different from that of men entrepreneurs according to the environment and context they are functioning (Loh & Dahesihsari, 2013).

In a patriarchal country such as Bangladesh, all three ideas of entrepreneurship are consequential to consider. Along with the theoretical approaches, what happens in the field should be studied. Relevant literature and current studies show that in the developing countries of Asia, women's entrepreneurship has tremendous potential to empower women and transform the society in the region (Tambunan, 2009). In the context of developing countries of Asia, there are generally three categories of women entrepreneurs: (1) chance, (2) forced and (3) created entrepreneurs (Tambunan, 2009). These different categories are based on how their businesses got started, or on the primary resources or motivation behind the starting of their businesses (Tambunan, 2009).

These three types of entrepreneurship – chance, forced and created – can create long-term successes in any country. For the long-term success, a country needs to go through three stages, (1) Stimulating activities, (2) Supporting activities, and (3) Sustaining activities to enhance and sustain entrepreneurship, as suggested by National Institute for Entrepreneurship and Small Business Development, Delhi, India (NIESBUD). (Nimalathasan, 2000, p. 67). In the first type of activities, “entrepreneurial education, provision of entrepreneurial opportunities and guidance, the supply of techno-economic information” should be provided (Nimalathasan, 2000, p. 67). Anything related to mobilizing the resources and running the enterprises – arrangement of finance, providing land, shelter, power and other utilities, offering management consultancy etc. will fall under the category of sustaining activities (Nimalathasan, 2000). To sustain entrepreneurship, one country needs to be proficient in overcoming all the challenges the entrepreneurship faces while operating (Nimalathasan, 2000). If the women entrepreneurs are to be identified as sustainable entrepreneurs, they should have the ability to overcome all the challenges (both institutional and external) they are facing to continue their functions. There are innumerable examples that great ideas, dynamic entrepreneurs kicked off but failed to sustain in the long run only because they were incapable of addressing the challenges they faced while implementing their ideas (Nimalathasan, 2000).

For the purposes of this research, it needs to be understood that the a2i as a program helps women entrepreneurs to start as entrepreneurs where the GoB has provided the establishment of the infrastructure. But those initiatives could empower women only if they could sustain over a long period of time, along with transforming the entrepreneurs to tackle any challenges from the surroundings. Based on the above discussion, henceforth, a theoretical framework for this research based on the discussion of the literature is given below:

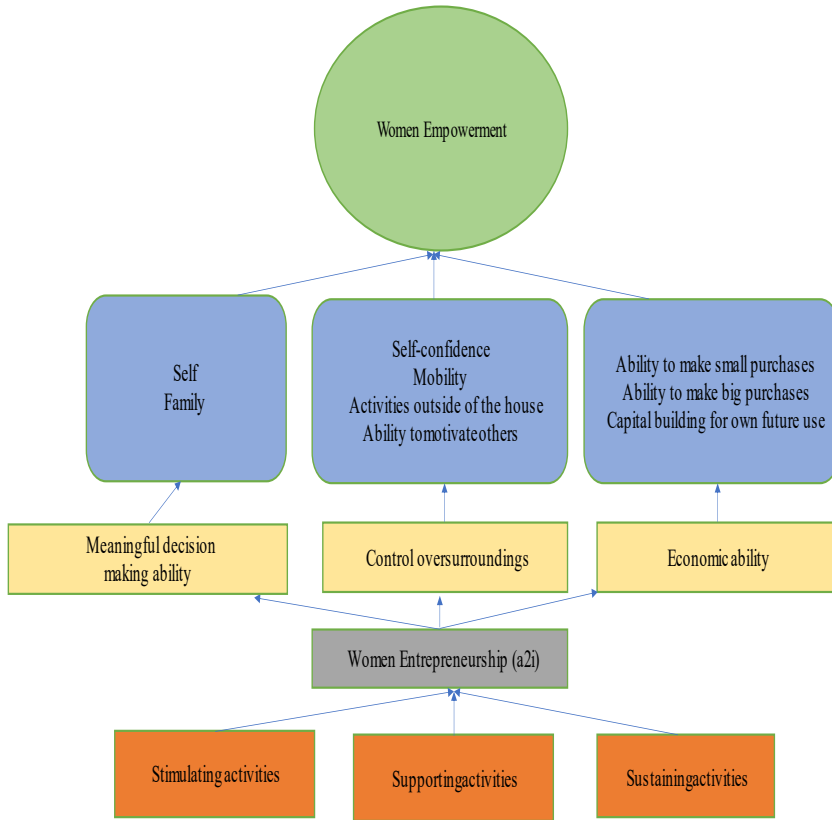
Figure 1: Theoretical framework

Figure 1 shows several indicators for achieving women empowerment. The women entrepreneurship under the a2i program should be able to achieve sustainability if the entrepreneurial opportunities are created with proper stimulating activities getting appropriate support from the GoB. That being said, all the sustaining women entrepreneurship should be able to help those women entrepreneurs: 1) To develop meaningful (and strategic) decision-making ability (for themselves and their families); 2) To create the ability to have control over their surroundings (i.e. they should have self-confidence, mobility, the ability to complete different activities outside of the house, and the ability to motivate others), and 3) To have economic ability to make small purchases, to make big purchases and to build capital for themselves. If these criteria have been achieved by the women entrepreneurs under the a2i program, or at least one criterion under each category, then the research will infer that a2i as a program has been successful in empowering women via women entrepreneurship.

4. Methodology

This research adopted a mixed-method approach to understanding both the quantitative and qualitative changes taking place (if any) in the lives of female entrepreneurs. This paper portrays the qualitative findings of the research. This research presents a simple exploratory and comparative case study with the aim of exploring the effectiveness of the a2i program in promoting women empowerment through women entrepreneurship in the selected research sites. Two different Unions – the Shimulia UP and the Muksudpur UP were selected from Dhaka, Bangladesh. Although both the UDCs are fully functioning, the women entrepreneur in Muksudpur UP is absent despite the official rule that there has to be one male entrepreneur and one female entrepreneur. Both Shimulia and Muksudpur UDCs started their operations with one male entrepreneur and one female entrepreneur. Eventually, female entrepreneur(s) discontinued from the Muksudpur UDC. After completing the pretest, the survey questionnaire and qualitative checklists were finalized by incorporating suitable modifications and adjustments.

Both theoretical sampling and snowball sampling were used for collecting the qualitative data of this research (Lofland & Lofland, 2006; Loh & Dahesihsari, 2013). The rationale behind using the combination is that it essentially provides the opportunity to incorporate “specific groups of people” having tendencies to be “familiarized with the characteristics or the circumstances of the social phenomenon being studied” (Loh & Dahesihsari 2013, p. 111). Snowball sampling was more effective since it helped the researcher to reach people with experiences of using UDCs’ services. Moreover, all the respondents had in-depth knowledge of the socio-economic setting of the two UPs. Identifying these respondents and capturing their experiences were vital for this research.

For data collection, a total of four Focused Group Discussions (FGDs) (two from each Union) were conducted with local community members with separate demographic and sex composition, one with males and one with females. There were a total of 10 respondents in each FGD, nine In-Depth Interviews (IDIs) (five in Shimulia UP and four in Muksudpur UP), and a total of 16 (eight from each UP) Key Informant Interviews (KIIs) were conducted. The IDIs were given by entrepreneurs and their family members, and the KIIs covered persons such as the government official, Upazila Nirbahi Officer (UNO), UP member, UP chairperson, Imam of a local mosque, local NGO officials working with women’s issues etc.

The research was funded by East West University Center for Research and Training (EWUCRT).

5. Findings

There was not any woman entrepreneur in the Muksudpur UDC as opposed to the rule of UDCs. Though women entrepreneurs initially started working at the Muksudpur UP, they discontinued. Hence, this case provides important insights for understanding what barriers forced women entrepreneurs to discontinue? How is this example different from that of Shimulia where women entrepreneurs were continuing working under the a2i program? Different barriers found from the qualitative analysis are discussed below:

5.1 Women Entrepreneurs and Their Situations in the Muksudpur Union Parishad

5.1.1 Social Barriers

First, Muksudpur represents a conservative society where society demands that their women remain in the private sphere and avoid engagement with the public sphere. If the women need to earn money, they can engage in activities of the private sphere (e.g. dairy farm, family grocery shop, or tailoring etc.). Because of this prevailing perception of the community, girls who go outside of the home to earn money are deemed '*Kharap/nosta*' (bad/girls from the brothel) by the community. Often, they face problem in getting married as nobody from the community speaks favorably of them.

Furthermore, the social structure of marrying girls at an early age also creates peer pressure on families with girl children. Early marriage is perceived as a mandatory unavoidable social act so that the adolescent girls do not get involved in any sort of socially unacceptable behaviors (i.e. getting involved in an affair/love relationship). Failure to maintain the social trend of marrying the daughters at an early age may result in social exclusion and isolation of the families. The families often come up with a false birth certificate so that they can marry off the girl children before the legal age of marriage which is eighteen.

Second, a prevalent social problem in Muksudpur is the high rate of drug users. This created a sense of insecurity in the community, particularly for girls. Drug addicted persons in and around Muksudpur UP often attack pedestrians walking to and from the work. This security concern made the families of girls avoid sending them outside of the home to earn. Therefore,

girls' and women's mobility is affected due to an unaddressed societal problem.

5.1.2 Low Literacy among Girls

Early marriage results in an inclination of low literacy among girls in Muksudpur UP. Becoming entrepreneurs for computer-related activities requires a minimum literacy, a level which the girls or women of Muksudpur UP often lack. Marriage at a young age makes girls drop out of schools (or other educational institutions). Due to their lack of literacy, the girls are unable to hone various technical skills, such as computer skills.

Furthermore, in a patriarchal society such as Bangladesh, generally, women are unable to exercise negotiation skills. As per the social context, women are not “supposed to” and they “should not” negotiate with their families and in-laws. That is why, when a girl is married off at a young age, generally she cannot negotiate with her in-laws for her right to education or jobs.

5.1.3 Poor Economic Conditions

Due to poverty, girls/females do not have the opportunity to get training in computer literacy, or any technical literacy as computer training is generally expensive in Bangladesh.

UDCs do not give any remuneration to the entrepreneurs and also they are not considered government officials, therefore, they are not eligible for any government facilities. Sometimes, therefore, earnings from entrepreneurial activities in the UDCs are inadequate for the entrepreneurs. Such arrangement discourages women from taking the risk of going out of the house for an insignificant amount of money.

5.1.4 The Attitude of the Community

The conservative mindset of the community keeps families from sending their girls outside of the home for better opportunities. In Muksudpur, families mostly support and encourage a son to work outside the home but not the daughter. Sometimes, boys learn use of computer or other technological devices from their elder brothers, even from fathers; but girls never get the opportunity to learn those technical and technological skills. Besides, boys get the opportunities to go to cybercafé with their friends, or elderly relatives, but girls are not expected to go to those areas. One male entrepreneur from Muksudpur gave the evidence that he learned computer skills from his family; nonetheless, his sister was never allowed to learn those skills. As a matter of fact, his sister started working as an entrepreneur at UDC, but could not continue due to the tremendous pressure from her family. Eventually, she started sending her brother to work as an

entrepreneur instead. One local political leader of Muksudpur described an almost analogous situation. According to the discussion:

“...The first woman entrepreneur stopped going to the UDC even without informing the respective authority. When asked later by the acquaintances, she informed not knowing computer made her work very difficult there (at the UDC). But as her brother is computer literate, he can work.”

(KII with the local political leader, Muksudpur, September 9, 2016)

The aforementioned statement shows that not knowing computer skills definitely creates an obstacle for women entrepreneurs to work responsibly in their position. But what is important for this research is the way the sons of the families in the Muksudpur UP learn computer skills and utilize them while girls cannot.

Moreover, not having the attitude to start entrepreneurship is a reason why women are unwilling to work as entrepreneurs. The IDI with the local political leaders reflects similarly:

“...All educated women want to be service holders. They have little or no interest in starting a business.”

(IDI with a local political leader, Muksudpur, September 9, 2016)

The male entrepreneurs also echoed a similar idea that women around Muksudpur have a risk-averse mentality. He informed:

“...Around 7-8 months ago, I brought a girl after talking to the Chairman of the UP to train her as a woman entrepreneur. I tried to train her so hard, even said that our income could be shared in 60-40%. But when she heard that there was no salary from the government, she refused. She worked for only 2-3 days and left.”

(IDI with male entrepreneur, Muksudpur, September 5, 2016)

Maintaining such a risk-aversion mentality and preferring service to business can create a negative attitude towards entrepreneurial opportunities among the people of Muksudpur UP. These examples provide an indication of the presence of conservative attitudes responsible for creating obstacles for a2i to be effective in promoting women empowerment through entrepreneurship. To become effective in empowering women via entrepreneurship, the entrepreneurs' risk-taking attitude and the enabling environment are crucial. The lack of these two is turning a2i's women entrepreneurship ineffective or less effective in such places.

In sum, different barriers in Muksudpur UP influenced the women entrepreneurs to discontinue their work at the Muksudpur UDC. The reasons are both internal and structural. Structural reasons such as the low literacy rate among girls, the high tendency to marry off the girls at an early age need both people and the GoB to come forward to find a suitable solution. For changing internal reasons, such as risk-averse behavior, preferring jobs to business/entrepreneurship, women being perceived as immoral/sinful/impure if they are working with men, women preferring to remain at the house instead of working outside etc., education, and awareness are crucial. Increasing literacy and raising awareness is central to the removal of structural limitations.

5.2 Women Entrepreneurs and Their Situation in the Shimulia Union Parishad

In Shimulia UP, the scenario is different from that of Muksudpur UP. At the time of data collection, there were two female entrepreneurs and one male entrepreneur. Though every UDC ideally should have one female entrepreneur and one male entrepreneur, two working women entrepreneurs at Shimulia indicate that the situation is better than that of Muksudpur. The question is what are the elements which created the situation better in Shimulia UP where women entrepreneurs are (continuously) working at the UDC, and how that is different from that of Muksudpur? Finally, are the women entrepreneurs truly empowered or not?

5.2.1 Higher Literacy

One fundamental difference between Shimulia and Muksudpur UPs is the literacy rate. In Shimulia UP, the literacy rate is higher (40.54%) than that of Muksudpur UP. Furthermore, girls also get the chance of continuing their studies. The participants of the FGD (male) also indicated that the girls' literacy is higher than that of the boys (there). With education, girls and women are being able to work in different sectors which were non-existent previously. Having a higher literacy rate also made it possible for women entrepreneurs to work for the UDC and continue the work unlike those of the Muksudpur UP.

Though the problem of early marriage is noticeable in Shimulia, the participants indicated that it was not rampant in every level at Shimulia. Not every family marries off their girl children early.

5.2.2 Computer Literacy

The women entrepreneurs had different levels of computer literacy. They received training on computer from different places which helped the

entrepreneurs to continue their work in their field. Computer literacy is not difficult to avail if a person had a basic education, but it is difficult to achieve if the person was illiterate. Hence, women with comparatively higher education rate in the Shimulia UP are more adaptable and suitable for working as a woman entrepreneur. This idea has been echoed in the discussion of women entrepreneurs as well.

“...Four or five years ago I got the opportunity to work for the birth registration project at the UP. There we needed to work on computers. Since I was educated, I could learn the techniques quickly. While I was working on that project, I also got the opportunity to meet the Chairperson and other members of the UP and learned about an opening for a woman entrepreneur position at the UDC. When the time came, I got selected with another male entrepreneur. That is how having a computer literacy helped me get the job.”

(From the IDI with 1st female entrepreneur, Shimulia, August 24, 2016)

The aforesaid discussion shows that having computer literacy did make a substantial difference for women entrepreneurs of Shimulia UDC which lacked at Muksudpur UP. This case shows that women were capable of working in a new and challenging context if given opportunities and training.

5.2.3 The Attitude of the Community

As it was discussed earlier that the conservative and rigid attitude of Muksudpur community made it difficult for women to work outside of the house, travel from and to a long distance for work, talk to men for the purpose of work and so on. These attitudes did not seem to be widespread at Shimulia. However, careful interpretation is required before eliminating the presence of a parochial mentality in Shimulia UP completely. The important aspect to understand about Shimulia UP is the community is not creating any hindrances for women entrepreneurs with such limiting attitudes. A quote supporting this attitude is:

“...People around the place used to be negative about the activities of women entrepreneurs or working women at the UDC previously. The reason behind that notion was there were times when the women entrepreneurs had to stay late in the workplace due to work pressure. This has never been an accepted action in this community. But now the scenario has changed. People these days understand the importance of a working woman. There is nothing wrong about being a working woman.”

(From the FGD (female), Shimulia, August 18, 2016)

It is important to understand that there might be a tendency to view working women outside of the house negatively, but it is changing with the practice of women entrepreneurs under the a2i program. If any (woman) entrepreneur was working in a conservative place and did not receive cooperation from the locality/community, it became difficult and sometimes impossible for her to operate in an environment such as that. Hence, having an open-minded, cooperative locality/community is crucial to helping women entrepreneurs succeed.

From the discussion above, it is clear that the women entrepreneurs of Shimulia UP were operating in a relatively flexible social-structure compared to that of Muksudpur UP. How does this situation translate into the effectiveness of the a2i program in promoting women empowerment through entrepreneurship? The answer to this question is given in the next section.

6. Discussion

6.1 Is a2i Effective in Promoting Women Empowerment?

As the theoretical framework showed in the Literature Review section, to have a sustaining women entrepreneurship under the a2i program, three different sorts of activities are important: 1) Stimulating Activities, 2) Supporting Activities, and 3) Sustaining Activities (details are discussed in the literature review section). Under the a2i program, the GoB successfully initiated both the stimulating activities and the supporting activities. But seemingly the GoB could not provide enough support for the sustaining activities. Sustaining activities, for entrepreneurship, deals with addressing the challenges any entrepreneur face while operating. These challenges can come in a variety of ranges. For example, in Muksudpur, the challenges were associated with social barriers, low literacy among girls, low computer illiteracy among girls, the parochial mindset of the community, and a lack of a fixed salary for the entrepreneurs from the GoB.

In Shimulia, on the contrary, these challenges were less visible. Though no such evidence was found that the GoB directly provides any support/creates any infrastructure to minimize these challenges under a2i at Shimulia. What was important for the Shimulia UP was that the entire socioeconomic structure worked for the sustaining of women entrepreneurs under the a2i program.

In a nutshell, despite providing initial stimulating and supporting activities for women entrepreneurs under a2i program, the GoB remained less effective in providing a (socioeconomic) structure able to handle different internal and external challenges. That is why the initiative did not work effectively to enable a sustainable environment for women entrepreneurs under the a2i program at Muksudpur unlike Shimulia. That shows, only a single program without the cooperation of the socioeconomic structure and vice versa is not enough to establish and sustain initiatives such as women entrepreneurship.

The theoretical framework used for the research adopted three elements to measure the empowerment of women entrepreneurs under the a2i program, those are: 1) Meaningful decision-making ability, 2) Control over surroundings, and 3) Economic ability. Let us examine the effectiveness of a2i in empowering women through entrepreneurship based on these elements.

6.2 Meaningful Decision Making

IDIs with female entrepreneurs at Shimulia and their family members advocated joining UDCs and starting to earn money did make them able to negotiate and make meaningful decisions in their lives (such as the marriage of daughters, decisions on the education of siblings, investment decisions etc.). Listening to the opinion of female entrepreneurs and giving value to their voices by family members, particularly by male family members only started after their work at UDC. Although they yet need to depend on the male family members for making the important decision, this change is a milestone for their lives. Thus, the a2i program is definitely helping women to be able to make meaningful decisions in their lives and for the family. However, to give the answer to the question if they are empowered in terms of meaningful decision making, the answer is, still they do not have the sole decision-making ability.

Examination of the existence of meaningful decision making for female entrepreneurs at Muksudpur UP was not possible as there were no female entrepreneurs at the Muksudpur UDC.

6.3 Control over Surroundings

In Shimulia UP, the appointment of the two women entrepreneurs and their success stories changed a number of things in the lives of them and their surroundings. They gained remarkable confidence in them in comparison to other women. The community members mentioned in the FGD (female) that they often went to the women entrepreneurs to ask for their opinion on different issues and received meaningful, practical, and feasible advice.

Women entrepreneurs of the Shimulia UP furthermore mentioned their ability to exercise vast freedom in terms of mobility because of the respect they gained from their work at UDC.

Similar to the meaningful decision-making ability, the above-mentioned elements could not be examined in the Muksudpur UP as there were no women entrepreneur working there.

6.4 Economic Ability

Economic ability is a determinant in measuring empowerment. Women entrepreneurs at the Shimulia UDC achieved an economic ability that was absent before starting their entrepreneurship. After starting their work, they had the ability to save money for their own use in the future. They also reported being able to buy different small things for themselves and the family when needed. Groceries at different times, clothes, educational materials etc. were some of the small purchases. However, they still needed to depend on the decisions of elderly male family members to make any big purchase (i.e. a mobile device).

Furthermore, in the case of Shimulia, it was seen that the women entrepreneurs were able to save for the future, but should it be called capital or not that is another question. As these women used these savings for small purchases, but for big purchases they had to depend on the decisions of the family which indicates they had a partial economic ability. For economic ability, like the other two components, Muksudpur could not be analyzed as there were no woman entrepreneurs.

Based on the above discussion, the question is if it could be said that women entrepreneurship under the a2i program increased women empowerment effectively? The answer is 'partial'. It definitely improved the lives of the female entrepreneurs in Shimulia, but, due to innumerable obstacles, the initiative of creating women entrepreneurs never became effectively sustaining at Muksudpur UP. That indicates the success of the a2i program in creating and sustaining women entrepreneurs is area and context-specific. It cannot be and should not be generalized. The initiative is magnanimous in terms of women entrepreneurship and women empowerment, but not adequate enough to bring a nationwide change. Additionally, this research shows that such a program functions within a social structure. If the social structure deters the progress of women empowerment with different social barriers, any single program is not enough to bolster women's progress. There should be mutual cooperation between the socioeconomic structure and program implementation so as to make it more effective and fruitful.

Moreover, the a2i program wanted to change the narrative of entrepreneurship. It popularized the term “entrepreneurship” going beyond the conventional ideas of an entrepreneur. The idea of entrepreneurship promoted by the GoB is more of a job for the GoB but without the provision for a secured salary by the end of the month. An interesting finding of the research is that the decision and the step taken by the GoB was a risky one, and had the possibility to fail within a rigid socio-cultural structure such as the one of the Muksudpur UP. This decision was risky as this ‘change of the narrative’ was trying to put focus only on the positive sides of being an entrepreneur and excluded the potential risks of entrepreneurial activities. The intention of the GoB and the a2i program was perhaps to encourage people to join as new entrepreneurs. However, when people realized there were risks associated with it, people started becoming risk-averse (i.e. in Muksudpur UP).

To summarize, a2i as a program is contributing to women empowerment by developing women entrepreneurs; however, only partially. Furthermore, this partial achievement of a2i in terms of empowering women via women entrepreneurship cannot be generalized as this is very much context and place specific. When programs such as a2i are designed, general applicability instead of context-specific applicability is taken into consideration. The most important aspect is to create a flexible atmosphere where programs, for example, a2i, can act with the flexibility to interact with the rigid socioeconomic structure given the limited resources available to work with.

7. Conclusion

a2i, although it is not a women-centered program, has the potential to become a catalyst for empowering women through entrepreneurial development. It tried to activate an environment where women can become the agency for changes in their lives and the lives of others around them and become empowered. This research examined the effectiveness of the a2i program to empower women through women entrepreneurship.

a2i as a program provided supports to establish women entrepreneurs around the country. Women entrepreneurship was believed to work as an effective catalyst to empower women under the a2i program. This research examined two places to understand the implication of the a2i program: The Shimulia UP and the Muksudpur UP. While analyzing these two places, it was understood that there is a presence of several barriers – social, poverty-related, low literacy rate, a rigid attitude of the locality, and not perceiving

entrepreneurship positively. These barriers prevail around the country but the extent of these varies depending on the place/location. a2i remained ineffective where the social structure was rigid and worked more effectively with a more flexible society. Hence, it can be concluded that the a2i program is not entirely effective in helping women entrepreneurs become empowered, but rather only partially. a2i program can address the situation with different creative policy-oriented steps which provide the opportunity for the a2i program and the GoB needs to design, redesign, and implement the a2i program in a more adaptive way to address different challenges women entrepreneurs experience.

A great array of research is taking place on a2i to understand its effectiveness and contribution to governance, poverty alleviation, education, and innovation. However, there is yet a lack of academic research on the relationship between the a2i program and its effectiveness on promoting women empowerment via women entrepreneurship. Hence, this research provides an opportunity for further research on this aforementioned relationship and on how to develop the relationship in the future. This exploratory research used two sites as cases and is not generating any generalizable data by acknowledging that only two UDCs are not representative enough for this purpose. For future research, the number of sites needs to be increased. A longitudinal study of these two sites and the existing entrepreneurs is strongly recommended. Thus, with further research and analysis, a general pattern between the a2i program and its effectiveness in promoting women empowerment can be defined. In a nutshell, this research calls forth future research on a larger scale across the country to understand the relation between the a2i program and women empowerment.

a2i as a program is not essentially a women-centered program but it tried to promote women entrepreneurship in every UP of Bangladesh. This is markedly a praiseworthy and remarkable initiative. Yet, the above discussion substantiates that there is room for improvement in this program for future sustainability.

First, at the program level, there is no alternative to training women entrepreneurs. As the UPs are directly associated with the District Commissioner (DC) offices, the women entrepreneurs can be invited and given training upon joining on the computer for one-two weeks by any of the government officials appointed to the DC office. If the a2i program initiates this step, the dropout rate of women entrepreneurs can be expected to plummet.

Second, the locations of the UDC should be chosen more carefully. Best location for a UDC probably is near the local market. Since it is close to a public place such as the local market, the rate of clients visiting the UDC for services may increase. This will reduce the risk of earning less money by entrepreneurs. Having a better-earning opportunity can increase the motivation for young educated, and computer literate persons to get more involved with the a2i program and entrepreneurs.

Third, local important and respected position holders should be communicated via the a2i program who can help raise awareness about the entrepreneurial activities.

Fourth, to increase the motivation of the entrepreneurs, particularly women entrepreneurs, the a2i program can start providing formal recognition and affiliation certificate. Since there is no formal salary structure provided by the a2i program or by the GoB to the entrepreneurs, this often demotivates people to join the program as entrepreneurs. The formal recognition (may be in the form of a certificate of affiliation) can compensate for the situation.

At the policy level, to start with, empowering women and encouraging entrepreneurship both demand a holistic approach. In a country such as Bangladesh where resources are limited, prioritization is necessary. Education can be a starting point which is also effective in changing the mindset of the general people. The GoB made tremendous progress in spreading education across the country already. This needs to be continued with further meticulous strategies to reach all places and all groups of people in Bangladesh.

Furthermore, the a2i program can include some of the middle-aged/elderly people as entrepreneurs in place of all young people. This will be an interesting and out of the box approach by dint of which the a2i program can directly engage that portion of the population who play a vital role in maintaining the dogmatic socioeconomic structure of Bangladeshi society.

Although the recommendations are practical and policy-specific, it is important to understand that a2i as a program cannot alone remove all the barriers to women entrepreneurship and women empowerment in Bangladeshi society. The a2i program should be designed, redesigned, and implemented in such a flexible way that it can work to remove those barriers from within the scope of the a2i program.

8. Limitations

This research has a sample size limitation. With the available amount of funding, designing research with a vast array of the dataset was not feasible. Hence, the findings of this research are not generalizable and representative. Rather, this research should be categorized as an exploratory and comparative case study. To overcome the limitations of non-heterogeneities, the data collection instruments were designed to get an in-depth picture of the two sample sites.

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Performance Assessment of a Bangladeshi E-commerce Enterprise: A Case Study

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Abstract

This research has assessed the performance of a reputed Bangladeshi e-commerce enterprise as a case study to unearth the glitches in operations and supply chain of e-commerce industry. The study has three parts namely identifying and evaluating the magnitude of potential failures in relevant processes; inventory analysis; and correlating the failures with various inventory classifications. Service mapping or blueprint were created to understand the standard of operations in the enterprise. Failure Mode Effect Analysis (FMEA) tool was used to measure the magnitude of the problems and possible solutions. In addition, ABC analysis was used to classify inventory in three different categories. The analysis of data reveals that mistake in order taking and processing, warehouse mismanagement; and in-appropriate delivery are major failure points with significant impact on operations.

Keywords: e-Commerce, Operations, Supply Chain Management, Service Mapping, Failure Mode Effect Analysis, Inventory Classification, Warehouse Management.

1. Introduction

Electronic commerce (e-commerce) has rapidly grown in terms of transactions all over the world (Business Insider, 2017). Bangladesh is one of the most densely populated countries in the world with a population size of 166 million and nearly half of these populations are internet users (Islam, 2018; WPP, 2018). Despite the fact that there is a large potential of e-commerce business in Bangladesh, the growth is still low, only 4.8%,

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compared to 28% and 34% in Pakistan and India respectively (Islam et al, 2015). It is believed that infrastructure, culture, and attitude are the main barriers to e-commerce (Debnath & Mahmud, 2007). However, the situation is significantly changing in Bangladesh with increasing number of e-commerce platforms and foreign direct investments in the sector. There are many driving factors for this trend which include high speed internet connectivity, busy schedule of consumers and enhanced electronic money transaction infrastructure among others.

The e-commerce operators often have difficulties in product sourcing, encounter lack of coordination with delivery partners, face issues related to quality, accuracy and on time delivery (Lin, 2011). In summary, the enterprises in the sector are often bogged down by a variety of operations and supply chain related issues. This research, in view of the situation in the sector, conducted a case study on a reputed Bangladeshi e-commerce enterprise to unearth the operations and supply chain related problems, causes and subsequent effect on the organization.

2. Literature

The e-commerce enterprise deals with a large quantity of inventories. The operations and supply chain failures occur in dealing with these inventories. However, all inventories are not equally valuable. Therefore, inventory classification is required. ABC classification is a commonly applied inventory classification technique where all inventories are classified into three categories namely A, B and C in terms of importance. It is based on Pareto's principle or the 80/20 rule, which assumes that 20% of the items in a list will account for 80% of the significant measurement. ABC analysis has many benefits including in cycle counting where A class items will be counted more frequently than B or C class items (Stevenson et al., 2007). Order quantity and safety stock levels are also established according to the criticality and cost of each item. Usually this is approached from a monetary accuracy perspective. Inventory replenishment systems also vary according to the importance of the inventory items. For example, C class items may be controlled with a simple two-bin system if they are not particularly bulky (Ng, 2007). In addition, as A class items form a larger investment in inventory, these items are closely analyzed to ensure appropriate order quantities and safety stocks are used. Furthermore, A class items are always the focus of attempts to improve inventory turnover as changes in the way A class items are procured and managed will have the most significant effect on the overall inventory investment level.

To understand and solve the operations and supply chain problems impacting e-commerce enterprises in Bangladesh, it is imperative to identify the causes, effects and potential mitigation strategies regarding the problems. A potent tool for the above-mentioned purpose can be Failure Mode Effect Analysis (FMEA), which is a system reliability and safety review technique created in the 1960s as part of the U.S. Minuteman rocket program to find and mitigate unanticipated design problems. FMEA is a proactive analysis tool allowing engineers to define, identify and eliminate known and/or potential failure, problems, errors and so on from the system, design, process and service (Stamatis, 2003). Such a tool is used to analyze process and allows to identify areas of the process that most impact customers. It also helps to identify how the process is most likely to fail and points of process failures, which are most difficult to detect (Gary et al., 2016).

A successful FMEA activity helps a team to identify potential failure modes based on the experience with similar products or processes or problems, enabling the team to design those failures out of the system with minimum efforts and resourced expenditure, thereby reducing development time and cost. The technique has successfully been utilized to analyze service and manufacturing processes by researchers and practitioners. However, understanding the process is a prerequisite to use FMEA tool. For that to happen, service maps or blueprints are needed to be created. Service mapping simultaneously depicts the service process, the points of customer contact, and the evidence of service from the customers' point of view. Service maps are used in operations management to assess whether the service is rendered as promised and manages failures, training systems, and quality control (Fitzsimmons et al., 2008). Typical service mapping starts with identifying the process to be mapped, followed by identifying the customer segment. The next step includes mapping the process from the customer point of view and resultant action of the service delivery staff. The service mapping literature further suggests documentation of evidence that is tangible items that the customer comes into contact during the service delivery process.

3. Methodology

In view of the discussion provided in the previous section, this research pursued the following objectives:

Objective 1: Conduct ABC Classification of inventories in the e-commerce enterprise

Objective 2: Map typical operations and supply chain related service processes in the case study organization

Objective 3: Conduct FMEA of the processes and suggest problem mitigation approaches.

Objective 4: Correlate process failures with category of inventories

This research predominantly used the case study method to investigate the problem*. The organization studied is an e-commerce start-up venture in Bangladesh. The enterprise is an online lifestyle store. The inventory available at the online store includes a range of fashion products, gadgets and electronic items. The enterprise operates a front office, back office and multiple logistics facilities including warehouses and transportation capacity. Researchers have previously advocated the use of case study method to generate qualitative data (Lambert et al., 1996; Geertz, 1994) especially when investigating contemporary issues (Yin, 2013). The research deemed that qualitative data was required to understand and map the processes.

The research team conducted field visits at the warehouse, distribution center and corporate office premises of the selected organization. The research team conducted multiple semi-structured interviews with mid and top-level management; had informal discussion with employees; and observed various operational activities and business processes. The major topics of discussions in the semi-structured interviews are as follows:

- Major processes
- Problems in executing processes
- Impacts of the problems identified
- Reasons behind the problems
- Potential mitigation strategies to solve the problem
- Inventory control.

In addition, the management of the organization studied shared official reports related to customer complaints; inventory assessment and turnover; and warehouse capacity status. The interviews were recorded, and research memo created. The data was coded and analyzed.

ABC analysis was conducted using combination of interviews and assessment of existing documents and performance reports. After successful mapping of the business process, FMEA tool was used to identify

* Fitzsimmons, J. A., & Fitzsimmons, M. J. (2004). *Service management: Operations, strategy, and information technology*: Irwin/McGraw-Hill.

- the fail points in the process; effects and mitigation strategies. An elicitation exercise was carried out to generate data required for the use of FMEA. Elicitation is a process of formulating a person's knowledge and belief about one or more uncertain quantities into a (joint) probability distribution for those quantities. The operations manager of the case study organization participated in the exercise. The manager was chosen for the exercise because of his extensive experience, knowledge and expertise on the studied process. Correlation between failures and category of inventory was developed using subjective judgment acquired through interviews and informal discussion with staff. Table 1 provides details of the interviews and the elicitation exercise. Further details on the elicitation exercise are provided in the results section.

Table 1: Interview details

Interviews	Elicitation Exercise
Participants: 5	Participants: 1
Interview type: semi-structured	Interview type: Structured, FMEA sheet used
Length: 40- 60 minutes	Length: 2 sessions (40- 60 minutes each)
Role in the organization: Warehouse manager, operations manager, logistics and delivery in-charge	FMEA sheet populated
Transcripts were created	

4. Results and Discussion

This section presents the results of this study and interprets the findings. Section 4.1 summarizes the findings of the ABC analysis. Section 4.2 discusses the service map and results of FMEA, followed by assessment of correlation between identified process failures and inventory categories (section 4.3).

4.1 ABC Analysis

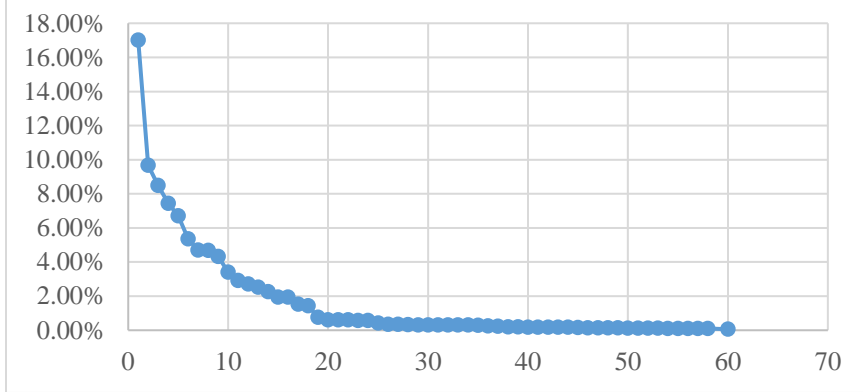
The research started with the ABC analysis of inventory at the organization. The analysis was done through a combination of existing document analysis and semi-structured interviews. It should be mentioned that the analysis was not exhaustive; in total 60 Stock Keeping Units (SKU) were analyzed. These inventories were mostly kept at the enterprise's own warehouse. Consumption value is needed in order to categorize the inventories. The equations to calculate the consumption value and percentage of total consumption value are provided below. The equations were applied for each item or SKU. Figure 1 illustrates the percentage of consumption value in BDT by item (SKU) in the decreasing order.

Equation 1: Consumption value by item (SKU) = Per unit value of item × Annual usage of item

Equation 2: Percentage of consumption value by item (SKU)

$$\frac{\text{Consumption value by item (SKU)}}{\text{Total consumption value}} \times 100$$

Figure 1: Percentage of consumption value (in BDT) by item (SKU)



A category inventories: A category items are goods for which the annual consumption value is the highest. The range of price is between BDT 5,250,000 and BDT 1,450,000. The top 59.39% of the annual consumption value of the company typically accounts for only 11.6% of total inventory items.

B category inventories: B category items have medium consumption value. The range of price is BDT 1,450,000 to BDT 450,000. 30% of annual consumption value typically accounts for 16.5% of total inventory items.

C category inventories: C category items are on the contrary items with the lowest consumption value. The range of price is BDT 1,440,000 to BDT 19,500. The lower 20% of the annual consumption value typically accounts for 71.1% of total inventory items.

4.2 Service Map and FMEA

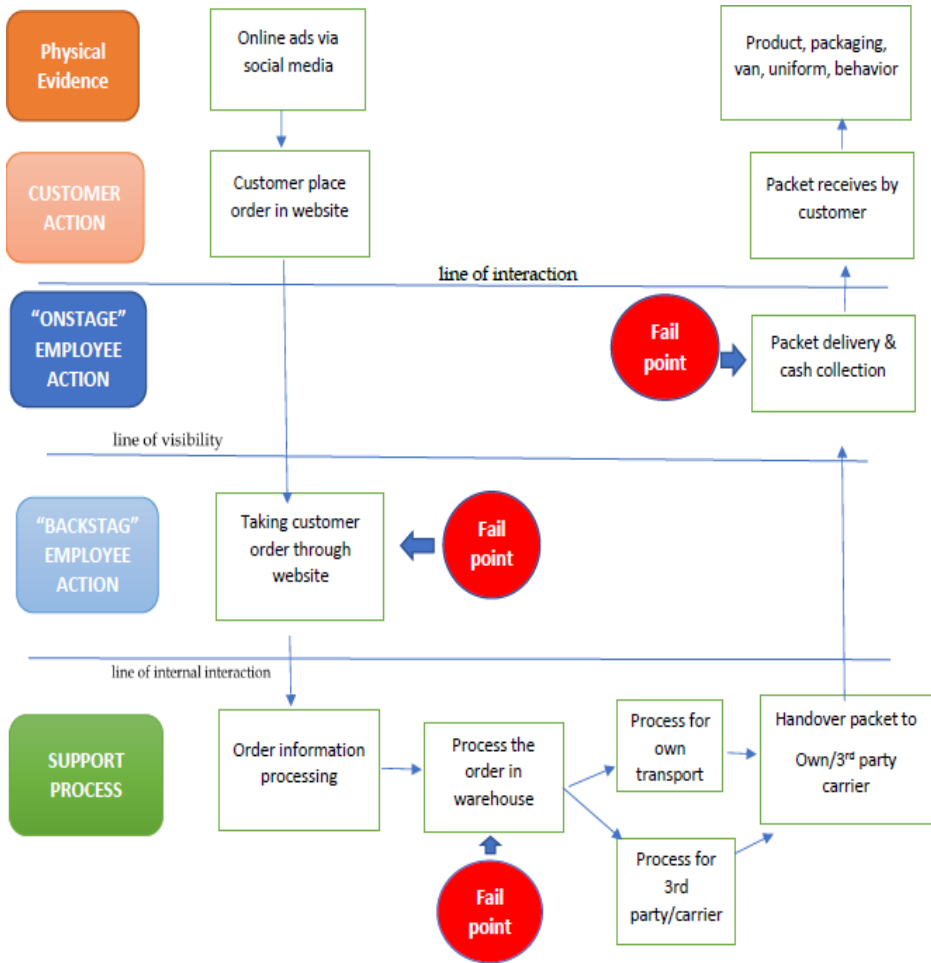
The major supply chain and operations related activities of the e-retailer include sourcing, storing, processing and distribution. Following is a discussion on each of those activities.

Sourcing: These activities are tactical in nature. The business development and procurement teams continuously collaborate on negotiating deals and

terms with suppliers. However, detailed assessment of the sourcing practices was not possible due to unavailability of data.

Storing: After receiving the products, the quality assurance department of the organization checks the quality of the products. After the quality assurance process is completed the inventory is stored according to the shelf plan and database updated.

Figure 2: Service blueprint of the customer order management process



Processing: After an order is placed, the warehouse processing unit completes the shelf picking and packaging work and the inventory is ready for transportation.

Distribution: Depending on the product type and inventory management decision, products are transported using in-house or third-party transportation.

Based on the analysis of the interviews conducted, a service map or blue print of the order management process of the organization is created (Figure 2). The service blueprint is based on a standardized format and utilized by many researches and industry reports (Chuang, 2007; Geum and Park, 2011; Park, 2011; Baum, 1990).

It should be mentioned that the customer order management process encompasses two of the major operations and supply chain activity of the organization namely processing and distribution. As explained in the literature review section, a service blueprint maps the process from the customers' point of view. The service is triggered by the customers' action of placing an order. In general, there is no customer interaction with any onstage employee; the former refers to staff of the organization having face-to-face or over the phone communication with customers. The line of visibility means beyond this point the customer has no knowledge of the e-retailers action regarding the order. The customer order is processed by backstage employees of the organization and request is posted in the information system for the warehouse. The latter upon inventory picking and packaging handover the product to own- or third-party transporter for customer delivery. All these activities can be considered support sub-processes. The product is finally delivered to the customer by on-stage employees and the interaction is visible to the customer. The physical evidences refer to tangible matters that the customer comes into contact in acquiring the service. In the process the physical evidences examined includes the dissemination materials that the customer comes in contact such as advertisements, the final product, packaging, and the delivery person's belongings. This research identified three potential fail points in the customer order management process which include: i) placement of accurate order from customer, ii) processing the order in warehouse, and iii) delivery. Fail points or failure modes are the way in which a process could fail to perform its intended function. It refers to matters that can go wrong with detrimental consequences.

The identification of the fail points allowed this research to conduct the FMEA. This is critical since assessing the significance of the potential failures is requisite to take corrective actions by the organization. FMEA assesses failures on three criteria namely severity, occurrence and detection

capacity. Severity determines the importance of the effect on operations in case the failure occurs. Table 2 summarizes the root causes of the fail points and potential mitigation strategies. This section further summarizes the issues in detail.

Table 2: FMEA rating scales

Fail Points	Reasons for the Problem	Mitigation Strategy
Accuracy of customer order upon placement	Inaccurate data entry by the backstage employees	Upgrade information system
Processing the order in warehouse	Mismanagement resulting in picking wrong inventory for packing	Enhanced training Improve monitoring of employees Automate inventory control using in house delivery and transport service
Delivery	Use of third-party delivery service Inaccurate handover of inventory by the warehouse	Enhanced training Improve monitoring of employees Automate inventory control

Occurrence stands for frequency at which a certain cause occurs and generates a failure mode; whereas the existing robustness of the system to prevent the failure is termed detection. As mentioned in the methodology section, an elicitation exercise was carried out to get subjective judgment regarding the severity, occurrence, and capacity of the system to detect the failures. The operations manager of the case study organization participated in the exercise as an expert. The participant of the elicitation exercise was asked to rate each failure in a scale of 1-to-5 across the three criteria. Table 3 provides details of the scale and interpretation. This research using the expert assessment calculated the risk ratings of the failures identified. Equation 3 is used to calculate the Risk Priority Number (RPN).

Table 3: FMEA rating scales-2

Severity (S)	Occurrence (O)	Detection (D)
Range: 1- not severe, e.g., minor effect on operations	Range: 1- Unlikely to occur	Range: 1 – Confidence to either find or prevent the failure
Range 5- very severe, e.g., severe effect on operations	Range 5– Regularly occurs based on existing data	Range: 5: System unlikely to prevent failure

Equation 3: $RPN = Severity (S) \times Occurrence (O) \times Detection (D)$

Applying equation 3, RPN ratings for all the three fail points are calculated. Table 4 tabulates the results of the RPN calculations. It is apparent from the RPN ratings of the fail points that problems with delivery are the greatest risk, followed by customer order processing and inaccurate placing of customer orders. FMEA further includes assessment of the causes behind the problems and identifying potential mitigation strategies. The discussion below addresses the issues.

Table 4: RPN rating

No.	Fail Point	Severity (S)	Occurrence(O)	Detection (D)	RPN
1	Accuracy of customer order upon placement	3	4	2	24
2	Processing the order in warehouse	4	3	3	36
3	Delivery	4	4	3	48

Causes and potential mitigation strategies for fail point 1 (Accuracy of a customer order): the results of this research indicate that customer orders are often not accurately placed in the system. The fail point with an RPN of 34 can be considered medium risk. The main cause of the problem is inaccurate data entry by the backstage employees placing the order. The problem can be mitigated by simplifying the process. At present, once customer places an order, a ticket is raised which is processed by the backstage employees and subsequently the request is transferred to the warehouse and transportation department for action. This action by the backstage employee does not add much value and can be eliminated with customer order directly placed at the warehouse through the information system. Hence, it is suggested that the information system be upgraded with accurate visibility of inventory.

Causes and potential mitigation strategies for fail point 2 (Processing the order in the warehouse): the fail point has an RPN of 37 which is substantial and signifies that operation is hampered by this problem. The main cause of the problem is mismanagement resulting in picking wrong inventory for packing. To solve the problem, the organization should impart enhanced training and improve monitoring of employees working at the warehouse. In addition, the inventory control system can be automated by using bar code or RFID for inventory tracking within the warehouse.

Causes and potential mitigation strategies for fail point 3 (Inaccurate delivery): this is the most severe fail point impacting operations and supply chain activities of the organization. The RPN of the problem is 48. There are two reasons for this type of failures namely- use of third-party delivery

service and inaccurate handover of inventory by the warehouse. The first cause can be mitigated by using in house delivery and transport service where control would be higher. The second case is in fact related to fail point 2, hence similar solutions can be applied.

4.3 Correlation between Process Failure and Inventory Category

The overall failure in process was found to be 11.5%. This research further analyzed and correlated the process failures with inventory categories. Table 4 illustrates the results. Care should be taken while interpreting the results of table 3. For example, 2% “delivery” related failures for A category inventory means, among the total delivery related failures 2% were related to A category inventories. For the process failure “accuracy of customer order upon placement” 50% of instances were in the case of B category inventories and 43% failure occurred in dealing with C category inventories. 5% of the A order processing failures occurred while dealing with B category inventories; whereas 40% and 55% were B and C category respectively. The data shows similar trends for delivery failures with as high as 63% failures occurring for C category inventories.

It can be interpreted that the current process adequately addresses replenishment, distribution and tracking of A category inventories as illustrated by low percentages of failures in relation with inventory of such category.

However, it should be of concern that majority of failures are related with B category inventories. The overall failures percentage should be reduced by steps suggested in the previous section.

Table 4: Failure percentage - inventory category wise

No.	Fail Point	Severity (S)	Occurrence(O)	Detection (D)	RPN
1	Accuracy of customer order upon placement	3	4	2	24
2	Processing the order in warehouse	4	3	3	36
3	Delivery	4	4	3	48

5. Conclusion

This research had an agenda to understand operations and supply chain problems hampering e-retailers in Bangladesh. In this regard, a typical customer order management process was mapped and FMEA tool was used to analyze the performance of operations. In addition, inventory classification technique such as ABC analysis was used. The results indicate

that the failures, such as inaccurate delivery; wrong processing of order at the warehouse; and mistakes in order placement are significant issues, which need to be resolved.

The research further revealed that there is a failures percentage of 11.5% in the processes analyzed which needs to be reduced. Correlation analysis between the process failures and category of inventory, for which the failure occurs, indicates that a high percentage of failure occurs for B and C category inventories, whereas the results are acceptable in case of A category inventories. The research suggests that the management of the e-business enterprises should consider implementing process simplification, electronic inventory control system, enhanced training of front stage and backstage employees to mitigate the current failures. In particular, attention needs to be paid for reducing failure occurrences of B category inventories.

The findings of this research are based on a study conducted only in one e-commerce enterprise. Further research needs to be conducted in order to generalize the findings of this research. Besides, a comprehensive quantitative research method, such as sample survey, in multiple e-commerce enterprises needs to be pursued based on the findings presented in this research.

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Living with Recurrent Flooding Risks in Bangladesh: Understanding Households Perception of Riverine Flood Disaster Risks and its Determinants

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Abstract

Riverine people are often affected by floods because of their proximity to the riverbank. Numerous studies were conducted on the physical characteristics of floods; however, there is still inadequate knowledge on the perception of flood risk of riverine households in Bangladesh. The present study explores the risk perception of riverine households to recurrent flood disaster and its associated determinants. Using systematic random sampling technique, 377 members from 377 households (one person from each household) were interviewed from the right bank of the Teesta River, Bangladesh. The results revealed that the sex of respondents, household's income, house location, and extents of damage to the houses significantly influenced respondent's risk perception. Male and female had a different perception of flood risk. Respondents whose houses were destroyed completely were found to be more fatalists to report their concern about the future flood. The majority of the respondents underestimated the likelihood of future flood occurrence. The findings of this study offer important implications for the risk managers to provide training to the riverine people to raise their awareness and perception about flood risk.

Keywords: Flood Risk Awareness, Teesta River, Preparedness, Mitigation.

1. Introduction

Bangladesh is ranked 7th on the "2020 Global Climate Risk Index" in terms of the worst affected countries owing to the extreme weather events (e.g., storms, floods) during 1999-2018 (Eckstein, Künzel, Schäfer, & Wings, 2019). The country is considered one of the most flood-prone countries globally (Kundzewicz et al., 2014). Flash flood, rainfall-induced flood, riverine flood and storm surge flood are the four major types of floods in Bangladesh (Mirza, Warrick, & Ericksen, 2003) and the characteristics of

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these kinds of floods are different from each other (Raaijmakers, Krywkow, & van der Veen, 2008). Among these floods, riverine floods are distinct for Bangladesh because the country is situated at the lowest riparian zone of the Ganges, Brahmaputra, and Meghna basin. Bangladesh has a complex network of 230 rivers including 57 transboundary rivers and these rivers drain around 1200 billion m³ of water annually (Ali et al., 2018). River floods are caused by the overflow of riverbanks (Mirza et al., 2003), typically affect the people who reside near the rivers (Mondal, Murayama, & Nishikizawa, 2020). The spatial and temporal extent of flooding in Bangladesh is determined by the synchronization of peak discharges in the major rivers, and the magnitude and duration of floods (Rahman & Salehin, 2013). Hence riverine floods are associated with the amount of rainfall accumulation in the upstream catchments and the volume of water carries from the upstream countries.

Riverine people in Bangladesh face regular flooding (Mondal, Murayama, & Nishikizawa, 2021). Normal flooding is expected as people have developed their own strategies to enable them to withstand and reap the maximum benefit of flooding (ADPC, 2005; Sultana & Thompson, 2017). A severe flood can occur when the peak discharges of the major rivers coincide, causing widespread damages. As risk perception is hazard-specific, understanding the factors that influence household's perception of riverine flood disaster risk is thus necessary.

Earlier studies in Bangladesh examined the awareness of floodplain residents' towards large-scale flood structural measures (Chowdhury, 2003; Paul, 1999; Paul, 1995). Mamun (1996) examined awareness and preparedness measures of riverbank erosion-prone households. Although numerous studies investigated the risk perception of riverine people (Alam, Alam, & Mushtaq, 2017; Hasan & Kumar, 2019; Sarker, Wu, Alam, & Shouse, 2020), these studies explored risk perception from the climate change perspective. Conversely, limited studies have been conducted to identify the determinants of risk perception particularly, in the context of a riverine flood. Studies on awareness and concern about floods that are directly associated with demographic characteristics, experience and exposure to floods are very limited in Bangladesh. This presents an important limitation since people's risk perception is largely influenced by a host of socio-economic variables (Qasim, Nawaz Khan, Prasad Shrestha, & Qasim, 2015). While some studies were carried out recently in the Teesta floodplain looking at issues of food risk assessment (Mondal, Murayama, & Nishikizawa, 2020), and choice of coping strategies during or immediately after a flood disaster (Mondal, Murayama, & Nishikizawa, 2021), no study to date has examined the risk perception focusing on 2017

flood in the Teesta River, Bangladesh. Considering the current research gap, this study aims to explore riverine people's awareness and concern for recurrent flood risk. More specifically, this study aims to (i) evaluate respondents' perception to the changing flood exposure, and (ii) examine the factors that determine respondent's flood risk perception. It is, therefore, necessary to understand the perception of flood risk of people from riverine areas. This will guide risk managers on the ways to promote knowledge and awareness of riverine people by identifying target variables to enhance the adaptive capacity of riverine people. The Teesta River flood serves as a case example for this study.

2. Flood Risk Perception

Risk is the probability of harm that an individual or person experiences (Short, 1984). Risk perception is an important part of risk management (Kellens, Zaalberg, Neutens, Vanneuville, & De Maeyer, 2011). Perception of risk differs widely between the general public and experts (Dwyer, Zoppou, Nielsen, Day, & Roberts, 2004). Risk perception of an individual is important as it influences an individual's response against any harmful event (Burn, 1999). A wide range of literature has investigated the influential factors of individuals' perception of flood risk (e.g., (Miceli, Sotgiu, & Settanni, 2008; Qasim et al., 2015; Ullah, Saqib, Ahmad, & Fadlallah, 2020)). Literature noted that flood risk perceptions and preparedness are interlinked as people with a greater risk perception tend to adapt more action to avoid risks (Qasim et al., 2015). Studies found that socio-demographic characteristics influence an individual's risk perception (Bradford et al., 2012; Bubeck, Botzen, & Aerts, 2012; Bustillos Ardaya, Evers, & Ribbe, 2017; Lin, Shaw, & Ho, 2008; Pelling, 1997), experience with a flood (Botzen, Aerts, & van den Bergh, 2009; Miceli et al., 2008; Bradford et al., 2012) and distance from the water sources (Miceli et al., 2008; Botzen et al., 2009; Miceli et al., 2008).

According to Becker, Aerts, & Huitema (2014), risk perception is the perceived severity of a hazard with its probability. Raaijmakers et al. (2008) suggest that flood risk perception is the relationship among preparedness, awareness, and worries. Awareness is the consciousness/knowledge of flood risk perceived by individual's/groups who are exposed to risk, and preparedness is the control over that risk. Worries results from a higher level of risk awareness and improper preparedness to cope with that risk (Raaijmakers et al., 2008).

In this study, flood risk perceptions have been defined as the individual's views of (i) the changes in flood severity in the last two decades (flooding

was getting worse), and (ii) the changes in floods frequency in future (whether flooding will occur more frequently in future). This study assumes that there is an association between socio-demographic variables, flood experience and flood risk perception.

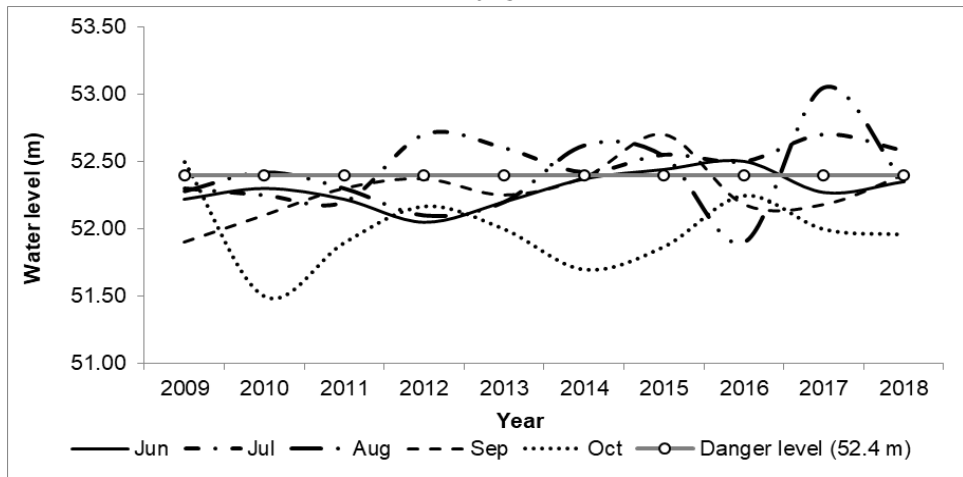
3. Methodology

3.1 Study Area

This study was carried out in the active Teesta River Floodplain in Bangladesh (TRFB). The TRFB is located in the northern region of the country. Teesta is one of the most important rivers in the Teesta River Floodplain (Mondal & Islam, 2017). Bangladesh has built a barrage, namely Teesta Barrage (TB), across the Teesta River, situated 16 km downstream of the Bangladesh border (Islam, 2016; Mondal, 2018; Mondal & Islam, 2017). On the other hand, India has built a barrage at Gozoldoba (in Indian Territory), located 66 km upstream of TB in Bangladesh (Islam, 2016). India controls Teesta River water flow unilaterally. For example, sudden water release through the Gozoldoba Barrage causes unexpected floods in Bangladesh.

Floods are recurrent in the TRFB. Recent notable severe floods in the Teesta River have occurred in 2004, 2008, 2017, 2019 and 2020.

Figure 1: Monthly maximum water level at dalia station from 2009 to 2018



Source: Prepared from Bangladesh Water Development Board

In particular, the devastating 2017 floods in the northern region of Bangladesh caused severe damage to crops and houses with over 150 casualties (NDRCC, 2017). The water level of the Teesta River at Dalia station crossed the danger level four times with a historical peak at 53.05 m. The water level data of the Dalia station were collected from the Bangladesh Water Development Board and presented in Figure 1. During

2014 and 2018, the water level of Dalia station reached/crossed the danger level by 29 times (danger level at Dalia station is 52.4 m) (Figure 1). These data showed an upward trend of peak discharges in the Teesta River in recent years.

3.2 Sample Design

A household-level questionnaire survey was administered in the three administrative districts of the Rangpur division: Nilphamari, Rangpur and Gaibandha (Figure 2). A face-to-face interview technique was adopted to collect data from the households. The questionnaire consists of several questions related to flooding hazard characteristics, exposure, vulnerability, capacity and risk perception (awareness and concern about Teesta River flood considering 2017 flood). The questionnaire was designed with both open and closed questions and was pre-tested in June 2018. The survey team consisted of ten enumerators who were familiar with the socio-cultural contexts of the study area. The original version of the questionnaire was drafted in English and was translated to Bengali. The household survey was conducted between April and May 2019. All respondents were informed about the purpose of the survey before the interview and agreed to participate in the survey voluntarily.

3.3. Data Collection and Sampling

This study used two stage sampling techniques: (a) selection of unions and (b) selection of households from the targeted unions. The right bank side of the Teesta River in Bangladesh was selected purposively. Three administrative districts are situated on the right bank: Nilphamari, Rangpur and Gaibandha (Figure 2). From each district, one upazila (sub-district) was selected, based on the criteria that the upazila is situated at the point of entrance of Teesta River in each administrative district. The selected three upazilas were: Dimla upazila from Nilphamari, Gangachara upazila from Rangpur and Sundarganj upazila from Gaibandha. Then, one union was selected randomly from each upazila* based on the criteria that the union is exposed and experienced recurrent river flooding from the Teesta River. The selected three unions were: Purbachhatnai from Dimla upazila, Gajaghanta from Gangachara upazila and Belka from Sundarganj upazila. Purbachhatnai union is located 10 km upstream of Teesta Barrage Project in Bangladesh. On the other hand, Gajaghanta union and Belka are situated

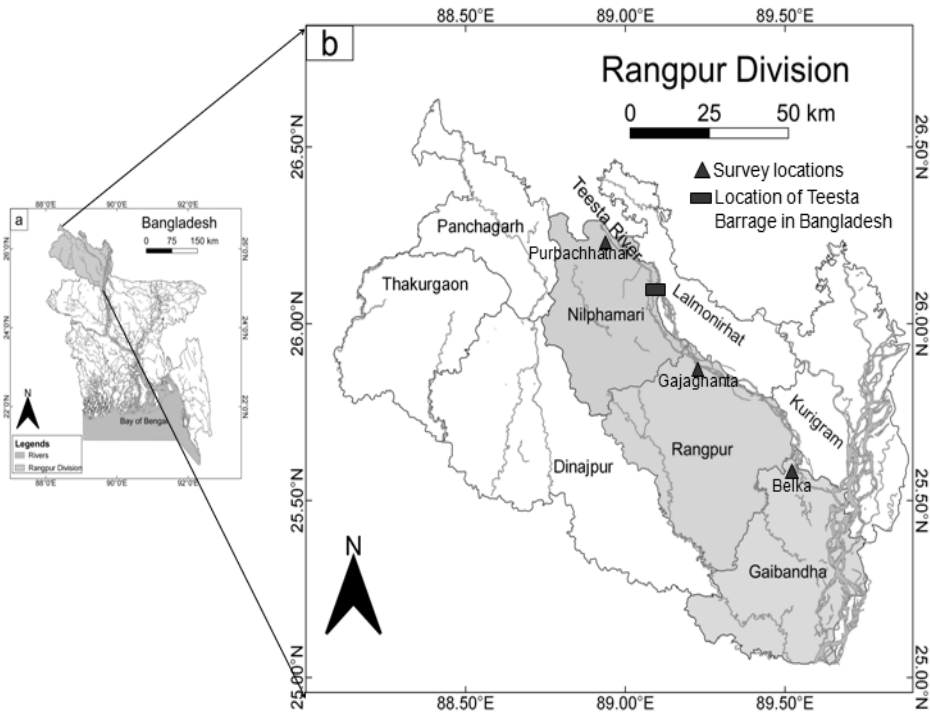
* Dimla upazila: Gayabari union, Jhunaganchh Chaphani union, Khalisha Chapani union, Khogakharibari union, Paschimchhatnai union, Purbachhatnai union, Tepakhari-bari union.

Gajaghanta upazila: Kolkanda union, Gajaghanta union, Lakshmitari union, Nohali union, Marania union.

Belka upazila: Belka union, Chandipur union, Haripur union, Tarapur union.

40 km and 85 km downstream of the Teesta Barrage Project in Bangladesh (on Google maps).

Figure 2: Map of the study area



The following equation is used to determine the sample size for this study based on Cochran (1977). The total number of households for the targeted three unions are 18972 (3435 households in Purbachhatnai, 7929 households in Gajaghanta and 7608 households in Belka unions)(BBS, 2013). Then the proportional allocation technique was applied to determine the sample sizes for these three unions: 68 for Purbachhatnai, 158 for Gajaghanta and 151 for Belka, respectively.

$$n_0 = \frac{Z^2 pq}{e^2} \tag{1}$$

$$n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}} \tag{2}$$

where,

N= Population size (total number of households in targeted three unions)

n= Sample size

n₀= Sample size for infinite population

Z= Z value (Z= 1.96 at 95% confidence level)

p = percentage picking a choice expressed as a decimal

q = 1-p

e = confidence interval (5% margins of errors)

This study used a systematic random sampling technique to a select household for interview. Every fifth or sixth house situated along the riverbank was considered as the starting point of each interviewer. The interviewers conducted the questionnaire survey with every third or fourth house on the vertical paths. On vertical paths, one interviewer collected data from a maximum of 10 households. The respondents were the household head, spouse or elderly. In total, 377 members from 377 households (one person from each household) were interviewed. The data collectors were trained on data collection procedures before the survey.

3.4. Variables Selection

The indicators of this study were selected based on the literature and data availability (Table 1). Demographic characteristics, house location and flood experience was considered as the explanatory variables for risk perception. Demographic variables include the respondent's age, sex, education and occupation, and income of household. Location was measured by one item: location of the house from the riverbank. Experience with the flood was measured by two items: frequency of house inundation in 2017 and house damaged by a flood in the last 5 years.

To measure the perception of flooding risk, a three-point rating scale (agree, disagree, no idea) was used to assess awareness about the changes in flood severity, and concern about the likelihood of changes in flood frequency in future (Table 1).

Table 1: Variables for analysis

Category Name	Variable Name	Variable Description
Flood Risk Perception	Awareness	Flooding in Teesta River is getting worse (agree, disagree, no idea)
	Concern	Flooding in Teesta River will happen more frequently in future (agree, disagree, no idea)
Socio-demographic	Sex	Sex of the respondents (male, female)
	Age	Age of the respondents (below 35 years, 35 to 50 years, above 50 years)
	Education	Education of the respondents (below primary, secondary or more)

Category Name	Variable Name	Variable Description
	Income	Monthly income of household (Tk. 4999 or less, Tk. 5000 to Tk. 10,000, Tk. 10,001 and above)
	Occupation	Occupation of the respondents (agriculture, housewife, others)
Flood Exposure	Location	Location of house from the riverbank (0-500 m, within 501-1000 m, more than 1000 m)
Flood Experience	Inundation	Frequency of house inundation in 2017 (numbers)
	Damage	House damaged by flood in the last 5 years (completely, partially, no damage)

Source: Variables derived from questionnaire dataset for analysis

3.5. Data Analysis

Data analyses were performed in Statistical Package for Social Sciences (SPSS v.26). Two bivariate tests were employed to achieve the given research objectives: the Chi-square test and the Kruskal-Wallis test. The Chi-square test of independence is a non-parametric test used to explore the association between two categorical variables. The Kruskal-Wallis rank sum test is also a nonparametric test, used to discover the differences between two or more groups of an independent variable on a continuous or ordinal dependent variable. Differences in risk perception can be revealed using these tests.

4. Results and Discussion

4.1 Socio-demographic Characteristics

The average age of the respondents was 44 years (SD=14 years): 36% respondents were below 35 years, 31% within 35 to 50 years age group and rest of them (33%) were more than 50 years age group (Table 2). More than half of the respondents (55.2%) were the heads' of the households, while 36.3% were the spouses and 8.5% senior members of the households. The selected sample had an over-representation of males (59%). The majority of the respondents had no formal education (65%), while 19% had primary level education and 16% secondary level or more. Agriculture was the main occupation for the majority of the respondents (41%), followed by a housewife (37%). A majority of the respondents (76.1%) earn less than Tk. 10,000 BDT* per month. Around one-third of the respondents had been living in their present residence since birth.

* 1 USD= 84.25 Bangladeshi Taka(Source: Bangladesh Bank, as of April 2019).

Table 2: Characteristics of surveyed respondents (n=377)

Variables	Percentage
Age of respondents (years)	
<35	35.8%
35-50	31.3%
>50	32.9%
Sex of respondents	
Male	58.9%
Female	41.1%
Education of respondents	
No formal education	65%
Primary level	19%
Secondary level	13%
Higher secondary or more	3%
Occupation of respondents	
Agriculture	41.1%
Housewife	37.1%
Others	21.8%
Income of household (monthly)	
Tk. 4999 or less	25.5%
Tk. 5000 to Tk. 10,000	50.7%
Tk. 10,001 and above	23.9%
Years of living in current residence	
≤ 5 years	30%
6 years or more	38%
Since birth	32%

Source: Field survey, 2019

4.2 Flood Exposure and Experience

Around 85% respondents have their dwellings within 1000 m from the riverbank (Table 3). Almost one-third (31%) of the respondents informed that their houses were completely damaged by a flood in the last five years. Only 3% of respondents' houses were not inundated by the 2017 flood, while around 46% reported that they faced inundation twice or more.

Table 3: Flood exposure and experience of respondents

Variables	Percentage
Location of House from the Riverbank	
0-500 m	66.8%
Within 501-1000 m	17.8%
More than 1000 m	15.4%
Experience with Flood	
Average number of house inundation in 2017	1.6 (± 0.8) (minimum: 0 and maximum: 3)
House Damaged by Flood	
Completely	31%

Variables	Percentage
Partially	55%
No damage	14%

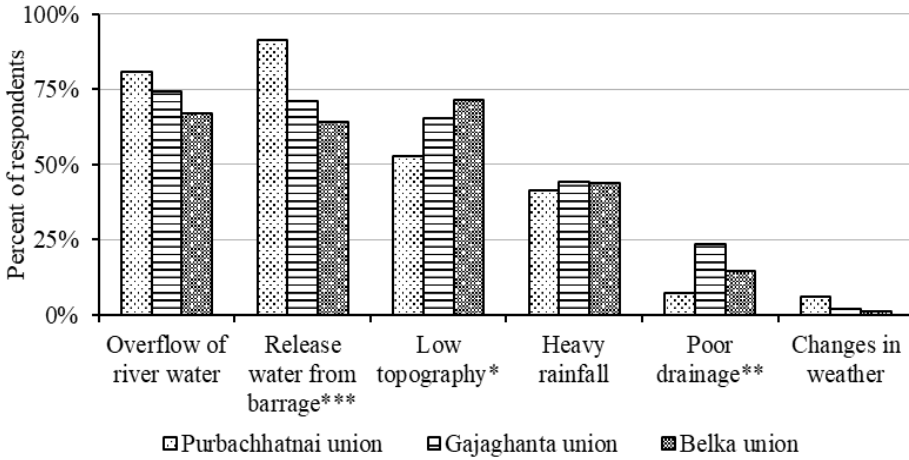
Source: Field survey, 2019

4.3 Perception of Causes of Flooding

The respondents identified numerous causes of flooding including the overflow of the riverbank (72.4%), the release of water from the barrage (71.9%) and low topography (65.5%) (Figure 3). Further analysis of survey data revealed that a significantly ($\chi^2=17.0$, $df=2$, $p<.001$) higher proportion of respondents from Purbachhatnai reported that water release from the Gozoldoba Barrage (Indian Territory) causes flood. This is because Teesta River enters Bangladesh at Dimla upzaila, Nilphamari and thus water carried from India enters directly in Purbachhatnai (upstream of Teesta Barrage in Bangladesh). The respondents from Purbachhatnai unanimously reported that the water release from India is the major causes of flood in their locality.

Respondents from the downstream of Teesta Barrage reported that both barrages (Bangladesh and India) are responsible for flooding in their areas. On the other hands, a higher proportion of respondents from Belka ($\chi^2=7.2$, $df=2$, $p=.03$) informed that low topography caused a flood in their locality. This might be because Belka is located in the downstream portion of Teesta River in Bangladesh and has a low lying, flat topography than the other two surveyed areas. Around 17.0% of respondents believed that poor drainage was the major reason for flood in their area, which was found significantly ($\chi^2=9.7$, $df=2$, $p=.008$) higher among the respondents from Gajaghanta. Another reason attributed to flooding in the study area is heavy rainfall (43.5%). A small percentage of respondents (2.4%) attributed that flooding is caused by the changes in weather. This presents an important indication that the respondents were aware of the causes of floods in their locality. It should be noted that anthropogenic factors such as the release of water from the barrage, which have become more pronounced in the last two decades leaves people in the uncertainty of flooding (Mondal & Islam, 2017).

Figure 3: Causes of flood (multiple responses considered) (n=377)



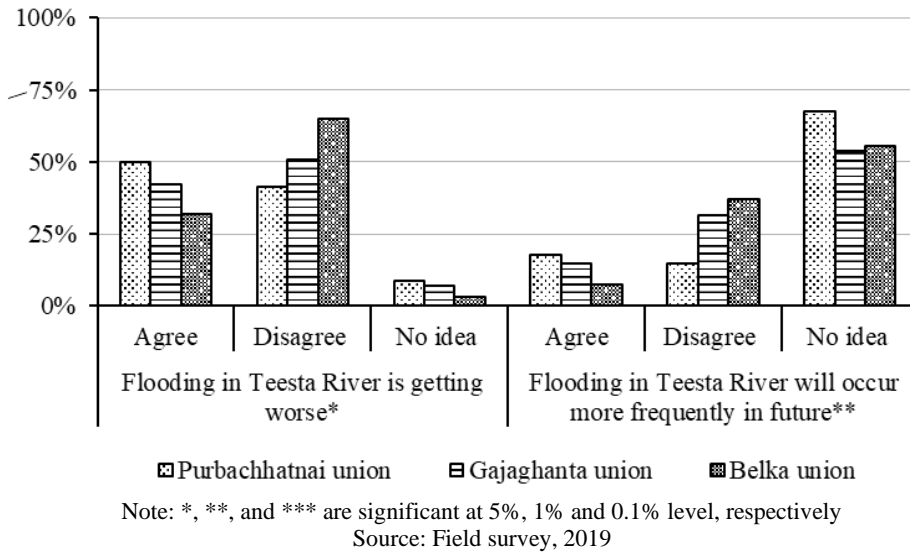
Note: *, **, and *** are significant at 5%, 1% and 0.1% level, respectively

Source: Field survey, 2019

4.4 Flood Risk Awareness and Concern

Figure 4 present an overview of the perceived flood risk by the respondents. The awareness ($\chi^2=13.2$, $df=4$, $p=.01$) and concern ($\chi^2=14.7$, $df=4$, $p=.005$) of respondents about the Teesta River flood were significantly different among the study areas. Among the three survey locations, there were significantly ($p=.01$) higher proportion of respondents from Purbachhatnai (50.0%) who agreed that the flooding in Teesta River is getting worse while the lowest percentage of respondents was from Belka (31.8%). However, the majority of the respondents disagreed (55%) that flooding in the Teesta River is getting worse. Fatalism plays a vital role in shaping respondents' risk perception when inquired about the likelihood of a flood(concern). Around 57% of respondents reported that they had no idea about the likelihood of future flood occurrence, although they have been living in the riverine area for a long time. One possible explanation of this finding could be that uncertainty of water release from barrages and dams built upstream which blocks the natural flow of water, makes it difficult to predict floods using people's traditional knowledge. Overall, respondents from Purbachhatnai had better risk perception as compared with Gajaghanta and Belka. This may be because Purbachhatnai is situated upstream of the Teesta River Barrage in Bangladesh and water enters there directly from India. These findings were consistent with Haque, Aich, Subhani, Bari, & Diyan (2014) which reported that unions adjacent to the barrage experience more flooding events.

Figure 4: Summary of flood risk perception (N=377)



4.5 Determinants of Flood Risk Perception

The results of the bivariate tests are presented in Table 4. The findings showed that a significantly higher proportion of female respondents agreed that the severity of the flooding was increased as compared to male respondents ($p=.014$) (Table 4). On the other hand, a higher proportion of male respondents agreed that the frequency of flooding will be decreased in future ($p=.012$). Awareness about flooding was higher among the female respondents. It is possible, however, all of the female respondents were married, and the 47% female respondents' age was below 35 years. Therefore, female respondents were only aware of the most recent floods that they experienced after coming to the new place after their marriage. Several studies identified that females have higher risk perception than males (Liu, Li, Shen, Xie, & Zhang, 2018; Kellens et al., 2011). The sex of respondents was significantly related to concern about future floods. These findings contradict the findings of Adelekan & Asiyanbi (2016) that reported insignificant relation between concern about flooding and sex of respondents in Nigeria.

Table 4: Relationships between risk perception variables with sex of respondents

Awareness: Flooding in Teesta River is Getting Worse		Sex of respondents		
		Male	Female	Total
	Agree	77 (34.7%)	72 (46.5%)	149 (39.5%)
	Disagree	135 (60.8%)	71 (45.8%)	206 (54.6%)
	No idea	10 (4.5%)	12 (7.7%)	22 (5.8%)
	Total	222 (100.0%)	155 (100.0%)	377 (100.0%)

Chi-square test: $\chi^2=8.6$, degrees of freedom=2,

p=.014

Concern: Flood- ing in Teesta River Will Hap- pen More Fre- quently in Fu- ture		Male	Female	Total
	Agree	21 (9.5%)	25 (16.1%)	46 (12.2%)
	Disagree	80 (36.0%)	36 (23.2%)	116 (30.8%)
	No idea	21 (54.5%)	94 (60.6%)	215 (57.0%)
	Total	222 (100.0%)	155 (100.0%)	377 (100.0%)

Chi-square test: $\chi^2=8.8$, degrees of freedom= 2, *p*=.012

Source: Field Survey, 2019

The findings revealed that age was not significant with any risk perception variables (Table 5). The result was similar with Qasim et al., (2015) in the context of developing country like Pakistan but different from developed countries' context such as Germany (Grothmann & Reusswig, 2006) and Belgium (Kellens et al., 2011) that found significant association. This may be because flood is a recurrent phenomenon in the study area.

Table 5: Relationships between risk perception variables with age of respondents

Awareness: Flooding in Teesta River is Getting Worse	Age of Respondents			
		Below 35 years	35 to 50 years	Above 50 years
Agree	51 (37.8%)	51 (43.2%)	47 (37.9%)	149 (39.5%)
Disa- gree	78 (57.8%)	61 (51.7%)	67 (54.0%)	206 (54.6%)
No idea	6 (4.4%)	6 (5.1%)	10 (8.1%)	22 (5.8%)
Total	135 (100.0%)	118 (100.0%)	124 (100.0%)	377 (100.0%)

Chi-square test: $\chi^2=2.7$, degrees of freedom=4, *p*=.62

Concern: Flooding in Teesta River Will Hap- pen More Frequently in Future	Age of Respondents			
		Below 35 Years	35 to 50 Years	Above 50 Years
Agree	17 (12.6%)	15 (12.7%)	14 (11.3%)	46 (12.2%)
Disa- gree	45 (33.3%)	36 (30.5%)	35 (28.2%)	116 (30.8%)
No idea	73 (54.1%)	67 (56.8%)	75 (60.5%)	215(57.0 %)
Total	135 (100.0%)	118 (100.0%)	124 (100.0%)	377(100. 0%)

Chi-square test: $\chi^2=1.1$, degrees of freedom=4, *p*=.89

Source: Field Survey, 2019

Education plays an important role in determining risk perception as education enhances individual risk perception. Although previous studies found a significant relationship between the level of education and risk perception (Adelekan & Asiyanbi, 2016; Botzen et al., 2009; Qasim et al., 2015), this study did not produce any significant relationship between those two variables (Table 6). This may be because of the lower level of education in the study area, and the level of education was thus addressed by the de facto system.

Table 6: Relationships between risk perception variables with education of respondents

Awareness: Flooding in Teesta River is Getting Worse	Education of Respondents		
	Below Primary	Secondary or More	Total
Agree	128 (40.4%)	21 (35.0%)	149 (39.5%)
Disagree	170 (53.6%)	36 (60.0%)	206 (54.6%)
No idea	19 (6.0%)	3 (5.0%)	22 (5.8%)
Total	317 (100.0%)	60 (100.0%)	377 (100.0%)

Chi-square test: $\chi^2=0.8$, degrees of freedom= 2, p=.660

Concern: Flooding in Teesta River Will Happen More Frequently in Future	Education of Respondents		
	Below Primary	Secondary or More	Total
Agree	38 (12.0%)	8 (13.3%)	46 (12.2%)
Disagree	93 (29.3%)	23 (38.3%)	116 (30.8%)
No idea	186 (58.7%)	29 (48.3%)	215 (57.0%)
Total	317 (100.0%)	60 (100.0%)	377 (100.0%)

Chi-square test: $\chi^2=2.3$, degrees of freedom= 2, p=.309

Source: Field Survey, 2019

Households' income plays an important role to deal with a disaster. The findings suggest that a significantly ($p<.001$) higher proportion of households that had an income of more than Tk. 10,000 per month reported their concern about the increase of flood frequency in future (Table 7). This may be because higher income groups are more capable of responding to flood disaster more quickly and have taken more actions to mitigate disaster risk (Shah, Ye, Shaw, Ullah, & Ali, 2020). However, some scholarly evidence (Qasim et al., 2015; Botzen et al., 2009) showed that income has no significant effects on risk perception. The variable occupation was not significant in this study (Table 8).

Table 7: Relationships between risk perception variables with income of households

Awareness: Flooding in	Income of Respondents			Total
	Tk. 4,999 or Less	Tk. 5000	Tk. 10,001	

Teesta River is Getting Worse		to Tk. 10000	and Above		
Agree	35 (36.5%)	81 (42.4%)	33 (36.7%)	149 (39.5%)	
Disagree	53 (55.2%)	100 (52.4%)	53 (58.9%)	206 (54.6%)	
No idea	8 (8.3%)	10 (5.2%)	4 (4.4%)	22 (5.8%)	
Total	96 (100.0%)	191 (100.0%)	90 (100.0%)	377 (100.0%)	
Chi-square test: $\chi^2=2.7$, degrees of freedom=4, $p=.60$					
Concern: Flooding in Teesta River Will Happen More Fre- quently in Fu- ture		Tk. 4,999 or Less	Tk. 5000 To Tk. 10000	Tk. 10,001 and Above	Total
Agree	8 (8.3%)	16 (8.4%)	22 (24.4%)	46 (12.2%)	
Disagree	26 (27.1%)	61 (31.9%)	29 (32.2%)	116 (30.8%)	
No idea	62 (64.6%)	114 (59.7%)	39 (43.3%)	215 (57.0%)	
Total	96 (100.0%)	191 (100.0%)	90 (100.0%)	377 (100.0%)	
Chi-square test: $\chi^2=19.3$, degrees of freedom =4, $p=.001$					

Source: Field Survey, 2019

Table 8: Relationships between risk perception variables with occupation of respondents

Awareness: Flooding in Teesta River is Getting Worse	Occupation of Respondents			
	Agriculture	Housewife	Others	Total
Agree	57 (36.8%)	64 (45.7%)	28 (34.1%)	149 (39.5%)
Disagree	91 (58.7%)	68 (48.6%)	47 (57.3%)	206 (54.6%)
No idea	7 (4.5%)	8 (5.7%)	7 (8.5%)	22 (5.8%)
Total	155 (100.0%)	140 (100.0%)	82 (100.0%)	377 (100.0%)
Chi-square test: $\chi^2=5.3$, degrees of freedom=4, $p=.26$				
Concern: Flooding in Teesta River Will Hap- pen More	Agriculture	Housewife	Others	Total
	Agree	15 (9.7%)	23 (16.4%)	8 (9.8%)
Disagree	56 (36.1%)	35 (25.0%)	25 (30.5%)	116 (30.8%)

Frequently in Future	No idea	84 (54.2%)	82 (58.6%)	49 (59.8%)	215 (57.0%)
	Total	155 (100.0%)	140 (100.0%)	82 (100.0%)	377 (100.0%)
Chi-square test: $\chi^2=6.6$, degrees of freedom =4, $p=.16$					

Source: Field Survey, 2019

The location of the house from the riverbank might reflect the degree of exposure of a household to flood hazard (Liu et al., 2018). This study found significant differences between location and concern about the future flood ($p=.01$) indicating higher proportions of respondents living more than 1000 m from the riverbank agreed that the frequency of flood will be decreased in future as compared with those who live within 1000 m (Table 4). Nevertheless, irrespective of their locations around 57% of respondents neither agreed nor disagreed about the changes in future flood. The finding of this study corroborates with findings of other studies (Adelekan & Asiyanbi, 2016; Heitz, Spaeter, Auzet, & Glatron, 2009; Liu et al., 2018; Qasim et al., 2015; Ullah et al., 2020) that found positive correlation between the location of house from the water sources (rivers or seas) and flood risk perception.

Table 9: Relationships between risk perception variables with location of respondents from riverbank

Awareness: Flooding in Teesta River is Getting Worse	Location of House from Riverbank			
	0-500 m	Within 501-1000 m	More than 1000 m	Total
Agree	105 (41.7%)	22 (32.8%)	22 (37.9%)	149 (39.5%)
Disagree	131 (52.0%)	41 (61.2%)	34 (58.6%)	206 (54.6%)
No idea	16 (6.3%)	4 (6.0%)	2 (3.4%)	22 (5.8%)
Total	252 (100.0%)	67 (100.0%)	58 (100.0%)	377 (100.0%)
Chi-square test: $\chi^2=2.8$, degrees of freedom=4, $p=.59$				

Concern: Flooding in Teesta River Will Happen More Frequently in Future	Location of House from Riverbank			
	Less than 500 m	Within 500 m to 1000 m	More than 1000 m	Total
Agree	37 (14.7%)	6 (9.0%)	3 (5.2%)	46 (12.2%)
Disagree	63 (25.0%)	26 (38.8%)	27 (46.6%)	116 (30.8%)
No idea	152 (60.3%)	35 (52.2%)	28 (48.3%)	215 (57.0%)

Total	252	67	58	377
	(100.0%)	(100.0%)	(100.0%)	(100.0%)

Chi-square test: $\chi^2=14.6$, degrees of freedom=4,

$p=.006$

Source: Field Survey, 2019

Though earlier studies (Liu et al., 2018; Brilly & Polic, 2005; Liu et al., 2018) identified that previous experience with the flood was an important determinant of flood risk perception, this study did not find a statistically significant relationship between hazard experience and risk perception variables (Table 10). One possible explanation might be associated with the definition of the indicator. Respondents were asked whether their houses were inundated in 2017, the last flood. Flood is recurrent in active Teesta floodplain, and over two-thirds of the respondents whose houses were not inundated in 2017 flood lost their standing crops. It is interesting to notice that the risk perception was higher for the households that did not face inundation compared with those that faced inundation. This may be because they became afraid to see the severity of the last flood, and thus expected that both severity and frequency of flood will be increased in future. However, the findings are consistent with those of (Grothmann & Reusswig, 2006) that argued experience does not influence risk perception.

Table 10: Relationships between risk perception variables with experience with flood

Risk Perception Variables	Experience with Flood: Average Number of House Inundation in 2017		
	χ^2	df	p
Awareness: Flooding in Teesta River is Getting Worse	3.9	2	.14
Concern: Flooding in Teesta River Will Happen More Frequently in Future	2.2	2	.39

Note: Kruskal–Wallis test, df=degrees of freedom.

Source: Field Survey, 2019

House destroyed by a flood was considered an important indicator as this indicator influenced all perception variables significantly: (i) awareness ($p<.001$) and (ii) concern ($p=.01$) (Table 11). It may be because personal experience such as property loss is correlated with an increased risk perception (Miceli et al., 2008; Perry & Lindell, 1990). Overall, among the respondents whose houses were partially damaged, they reported that the severity of flood decreased and the flood frequency will be decreased in future. This may be because this explanatory variable act as a proxy variable for the ownership of a house as there is a significant difference between ownership of house and house destroyed by a flood, with a higher percentage of respondents whose houses were completely damaged living

in rented/government/relatives' land ($p < .001$). Households using rented or government or relatives' land have lesser options or lack of willingness to strengthen their houses; as a result, vulnerability of household increases (Mondal et al., 2020).

Table 11: Relationships between risk perception variables with extent of damage of house

Awareness: Flooding in Teesta River is Getting Worse		House Damaged by Flood			
		Com- pletely	Partially	No damage	Total
Agree	72 (62.1%)	62 (29.8%)	15 (28.3%)	149 (39.5%)	
Disa- gree	36 (31.0%)	136 (65.4%)	34 (64.2%)	206 (54.6%)	
No idea	8 (6.9%)	10 (4.8%)	4 (7.5%)	22 (5.8%)	
Total	116 (100.0%)	208 (100.0%)	53 (100.0%)	377 (100.0%)	
Chi-square test: $\chi^2=39.5$, degrees of freedom=4, $p < .001$					
Concern: Flooding in Teesta River Will Happen More Fre- quently in Future		House Damaged by Flood			
		Com- pletely	Partially	No damage	Total
Agree	18 (15.5%)	22 (10.6%)	6 (11.3%)	46 (12.2%)	
Disa- gree	21 (18.1%)	74 (35.6%)	21 (39.6%)	116 (30.8%)	
No idea	77 (66.4%)	112 (53.8%)	26 (49.1%)	215 (57.0%)	
Total	116 (100.0%)	208 (100.0%)	53 (100.0%)	377 (100.0%)	
Chi-square test: $\chi^2=13.2$, degrees of freedom=4, $p=.010$					

5. Conclusion

The objective of this present study was to evaluate the risk perception of respondents to riverine floods. This study revealed that males and females had different notions on flood risk. However, a larger proportion of respondents believed that flood will decrease in future, which is not supported by the recent trend of increasing flood peaks in the Teesta River. Experience with flood hazard appeared to be linked with the risk perception in a complex manner. Respondents who experienced complete damage to their houses were found more fatalistic in reporting about the severe flood in the coming years. Flood exposure also influences respondents' concerns about flood risk.

The challenge for flood risk reduction is closely associated with the risk awareness and concern of individuals, households and community for collective actions. Flood is not a new hazard for the studied communities. Changes in the level of concern are not the direct outcome of a policy, but the result of a change in preparedness and awareness (Raaijmakers et al., 2008). This study, therefore, advocates that risk awareness and concern should be improved at the local level regardless of age, sex, educational background, occupation and exposure to hazard. On the other hand, risk awareness and concerns are not just related to taking proactive actions but also closely linked with decision making on evacuation. Therefore, it is necessary to consider the awareness and concerns of residents before designing and implementing any kinds of flood risk reduction programs. It is also necessary to focus attention on how to motivate people to take risk-reducing measures in the context of recurrent hazards that become the part of people's life.

This study attempted to assess flood risk perception of riverine people in Bangladesh, which is based on self-reported data. This self-reported data can produce response bias. Although bivariate analysis between two variables does not provide a causal relationship between them, multivariate analysis can be applied in a future study to identify the factors that influence risk perception. This study was conducted around two months before the 2019 flood when only 12% of respondents expected severe floods in future. Another study on risk perception can be conducted to understand the changes in risk perception in the same locations.

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High-Performance Work Systems in the Australian Higher Education Sector: A Critical Review and Future Research Agenda

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Abstract

The advocates of the configurational perspective view high-performance work systems (HPWS) as a complementary bundle of strategically driven and contextually specified human resource management practices that leads to employee and organisational performance through positive attitudinal outcomes. A study of the contemporary context could better configure the HPWS bundle for any industry undergoing significant transitions. Australia's higher education (HE) sector has observed significant changes since 2009 that have potentially redefined how human resource (HR) management practices interact and counteract within the system. No study to date has explored these changes and their impact on the HPWS configurations in the Australian HE industry. This study explores the changes in the Australian HE sector in recent years and identifies their strategic HR implications through a systematic review of the literature. The result will benefit the key decision-makers to configure the bundle of HPWS by confirming the external and internal fit within the transitional context of the Australian HE sector. Future researchers can use the proposed framework to design empirical studies in similar contexts.

Keywords: HPWS, Australian Higher Education Sector, Strategic Human Resource Management, Systematic Literature Review, External and Internal Fit, Context.

1. Introduction

High-Performance Work Systems (HPWS) is a popular term across the academic fields of human resource management, industrial or employment relations, organizational behavior and operations management. Government ministries, think tanks, Human Resource (HR), professional associations, trade unions and management consultants widely use the HPWS frame work (Zacharatos et al., 2005). HPWS in any job environment demands a well-designed system that ensures engaged employees who are intellectually and emotionally capable of producing strategic outcomes

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(Zacharatos et al., 2005). Research has shown positive relationships between HPWS, HR outcomes and organizational performance (Zacharatos et al., 2005). HPWS is now viewed as an integrated system of HR activities, where employees are interconnected through empowerment, motivation, and shared values, and they work together to achieve personal, group and organizational outcomes in a particular context (Boxall & Macky, 2009).

To accomplish these desired outcomes, it is essential to understand the dynamics of internal and external strategic fits between different HR Management practices within its context (Boxal, 2012; Boxall & Macky, 2009; Budhwar & Debrah, 2001; Newell & Scarbrough, 2003). Many extant HPWS literature has explored the importance of internal and external contexts in selecting the strategically aligned bundle of human resource management practices leading to performance (Humphrey, Nahrgang, & Morgeson, 2007; Khan, 2013, 2015; Mittal, 2015). Even the best set of HR and operational practices can be proven counterproductive in a changing context. Therefore, a periodic and systematic study of the contextual transitions in the industry has been recommended for the HR practitioners to appropriately configure HPWS for a specific sector (Khan, 2013, 2015).

Several authors have focused on exploring the uniqueness of context to advance SHRM research, where the influence of HPWS on organizational performance varies (Combs, Liu, Hall, & Ketchen, 2006; Derely, 1998). Furthermore, industry context has been suggested as a potentially significant moderator that deserves attention (Combs, Liu, Hall, & Ketchen, 2006; Batt, 2002; Datta, Guthrie & Wright, 2005). Boxall and Macky (2009) emphasised the importance of understanding contextual differences in service industries due to the wide range of strategic choices available (e.g., mass service vs. professional service) within the same industry. The service industry could gain maximum benefit from HPWS instead of the manufacturing sector since employees in the service industry usually have more discretion over their work (Rosenthal, Hill & Peccei, 1997). Moreover, the effects of HPWS on employee behaviour directly influences the quality of services, as service industry employees maintain close contact with customers (Batt, 2002).

The higher education (HE) sector is one of Australia's most economically significant service industries that could use a contextually configured HPWS framework to attain sustainable competitive advantage in a rather dynamic global business environment. This study responds to the call for qualitative HPWS research to propose an updated and customized bundle of HR and managerial practices for a unique and unexplored context like the Australian HE sector. Our findings will guide future researchers to gather empirical evidence in similar contexts.

2. The Significance of Studying HPWS in the Australian HE Sector

The Australian HE sector underwent significant reformative changes in the new millennium. Along with many other western economies, Australia gradually moves from an industrial economy to a knowledge-based economy. This trend elicits a further expansion of the tertiary education system, where the increasingly diverged student body and HE providers bring in new challenges to the sector (Goedegebuure & Schoen, 2014). Moreover, the rapid changes in technology and government policy (fund cut and increased quality assurance requirements) influence all aspects of the Australian HE industry and value delivery to the key stakeholders (Marginson, 2013).

Under the current transitional stage, the Australian HE sector seems to be an interesting context to study HPWS. According to MacDuffie (1995), innovative HR practices, i.e., HPWS, may contribute to economic performance subject to the fulfilment of the following three conditions: (1) employees possess knowledge and skills that managers often lack; (2) employees are motivated to apply these skill and knowledge through discretionary effort; and (3) achievement of firm's business and production strategy depends on such discretionary effort. Australian HE sector essentially accommodates all these conditions.

The economic significance of this sector in Australia is considerable as well. According to the latest studies, this sector directly employs more than 120,000 staff and supports education to over one million students, contributing around \$25 billion to the Australian economy (Deloitte Access Economics, 2015). International students and their visitors contribute \$17.1 billion to Australian GDP in 2014-15, and the Australian HE sector attracts the lion's share of these international students. Professional, Scientific and Technical Services (\$735 million), Finance (\$603 million), Non-residential Property Operators and Realtors (\$427 million) and Employment, Travel Agencies and Other Administration Services (\$345 million) have been identified as the indirect beneficiaries from international students in Australia (Deloitte Access Economics, 2016).

Despite the economic significance of this sector, there is still no evidence of HPWS studies in the higher education setting in Australia. HPWS generally entails high skills of employees who have discretion and opportunity to use their skills in collaboration with other workers and an incentive structure to enhance employee motivation and commitment (Batt, 2002). The education sector fits the typical profile of a sector that may benefit from a carefully configured HPWS. HPWS commonly includes

strategically driven HR practices such as systematic selection, incentive pay, profit sharing, the use of job analysis and redesign, information sharing, empowering leadership style, employee autonomy, reduced status distinction, performance appraisal, teamwork, continuous training and development, opportunities for internal promotion, management development and so forth (Hartog & Verborg, 2004; Khan, 2013; Way et al., 2002). These classic compositions of HPWS may not be successfully operationalized or linked to produce desired HR outcomes in the Australian education sector facing counteracting strategic goals in the contemporary business environment. For example, well-intended continuous training and development, teamwork and information sharing can be viewed as an excessive workload that causes occupational stress and burnout. Therefore, a strategically aligned and contextually specified configuration of HPWS for the sector warrants exploration and understanding of this context at the contemporary, transitional stage.

To address the persisting gap in the HPWS literature, this study aims to explore the context of the Australian HE sector over the past ten years through a critical review of HPWS literature and HE reports. Furthermore, the study will investigate the black box of HR that connects the contextually specified configuration of HR and operational practices to the desired employee outcomes in this sector to propose a customized HPWS framework for further empirical studies.

The paper is structured in four major sections. First, the methodology of the research has been outlined. Second, the key findings from the systematic search and critical review of literature have been presented. Third, the implications of the significant findings have been discussed, and finally, the conclusion and scope for future research have been outlined.

3. Methodology

HPWS studies have predominantly applied various quantitative research methods and tools such as correlational, cross-sectional, regression, factor analysis, multi-level analysis, Structural Equational Modelling (SEM), and ANOVA using LISREL, SPSS and AMOS. However, the growing application of the configurational approach and divergence arguments instead of the universalistic or convergence approach calls for more in-depth qualitative studies to verify the strategic fit of HPWS composition in a selected context. The proposed study plans to investigate what and how the type of questions that calls for the application of a qualitative research design, according to Yin (2012), to gain a deeper understanding and holistic view of the current HPWS configuration in the Australian HE sector. In recent years, systematic literature review is gaining popularity in business

studies and management science (Kerañen et al., 2012; Mainella et al., 2014). Since no research on HPWS has covered the Australian HE sector to date, acritical review of literature has been used to propose an HPWS framework based on emerging issues and challenges faced by this sector. We have used three extensive databases and VOS viewer software to conduct a systematic search and critical review of literature for the study. The remaining segments of the methodology section outline the search, selection and analysis of the articles that were finally used as the source data for discussion.

3.1 Search and Selection of Articles:

The Web of Science, Scopus and EBSCO were used to search peer-reviewed academic articles. These databases cover many peer-reviewed journals, conference proceedings and edited books in economics and management sciences (Anees-ur-Rehman, Wong, & Hossain, 2016). Different combinations of three keywords have been used separately to search for peer-reviewed journal articles, notes, reviews, editorial, conference proceedings, edited book chapters, government-funded or authorized reports and documents through the selected databases from October 2017 to January 2018 (Table 1). Though the concept of strategic human resource management and HR best practices were shaping the HPWS construct since early 1980s, the exact term (i.e., HPWS) was not essentially used in all relevant literature. Therefore, A critical review of HR literature from 1980 to 2000 has been used to study the early stages of evolution of HPWS concept. For a systematic literature review, the time range was selected from 2001 till date (which is the 31st of January 2018) with special consideration to the journal articles in the search engines. The following table provides a summary of 128 articles and its categories.

Table 1: Selected HPWS Literature (2001-2018)

Reference categories	Frequencies
Research articles	123
Conference proceedings	2
Academy of Management Annual meeting forum	3

Note: Discipline: Educational research, management, operations research/management science, business finance, business, industrial relations labor and psychology

The keywords used for the search are high-performance work systems or HPWS, Australia and the higher education industry. After the elimination of the duplication, we found 761 HPWS literature. Only 128 of this Literature were considered relevant to the field of management and business. However, none of this literature has studied HPWS in the context of the education sector in Australia, which indicates a literature gap.

Two authors were engaged in extracting the relevant information from the articles and recording them on a spreadsheet at this stage; the information recorded includes but are not limited to the author's name, the title of the article or report, year, source title, volume, issue, page count and number, ranking of the journal (publishers' name in case of a report or document), citation profile, an affiliation of the publication, authors' affiliations, abstracts (where applicable), keywords used by the authors, document type, database sources, and the web source. The spreadsheet records were then crosschecked individually by the authors to correct anomalies and duplications and apply further exclusions to be used as a complete set of information for the analysis. The criteria used for exclusions are incomplete information or document and relevance to the scope of current research. The authors discussed and agreed on the articles and documents' relevance, clarity, and reliability and selected them for the analysis. This procedure is considered standard in review articles (e.g., Anees-ur-Rehman, Wong, & Hossain, 2016; Dahlander and Gann, 2010).

3.2 Method of Analysis:

A critical review of literature was used to explore the evolution of HPWS concept. For the systematic search of literature from 2001-2018, we also used VOS viewer software to identify the actual cluster of the research area. The VOS viewer software identifies the critical areas in the HPWS research from 2001 to 2018. The Scopus, web of science and Ebsco have searched 1286 articles. Among these 1286 articles, 761 articles were related to the concept of HPWS (i.e. high involvement work system, performance management system, performance commitment, performance, performance management system). The next round of the filtering process included extracting the core 128 articles that are purely focused on HPWS literature based on the web search database engines mentioned earlier. The VOS viewer software is an intervention tool that helps to extract the essential items, themes and core critical words from the databases that this study used. VOS viewer has used 761 articles to provide a graphical presentation, which predominantly includes scholarly articles. The main advantage of VOS analysis is that it has a 'non-intrusive nature, using the literature generated in a scientific or non-scientific field to identify and visualize knowledge structures (García-Lillo et al., 2016). Moreover, NVivo was used to identify the key HPWS related themes from the Australian HE sector reports (see Figure 3).

4. Findings and Analysis

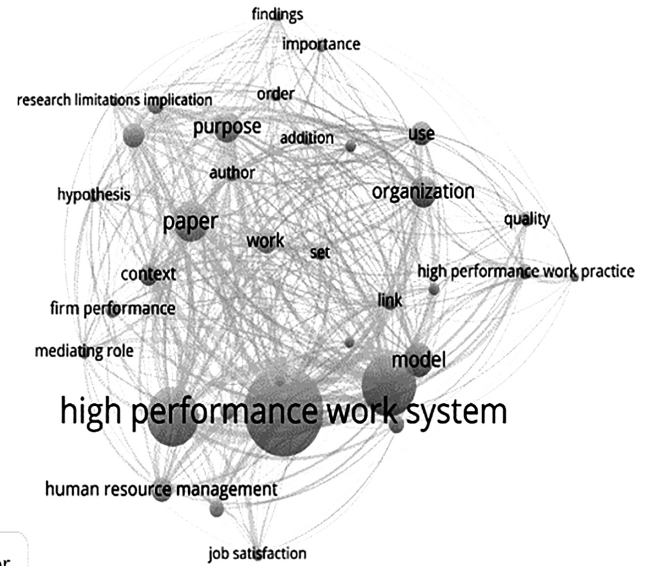
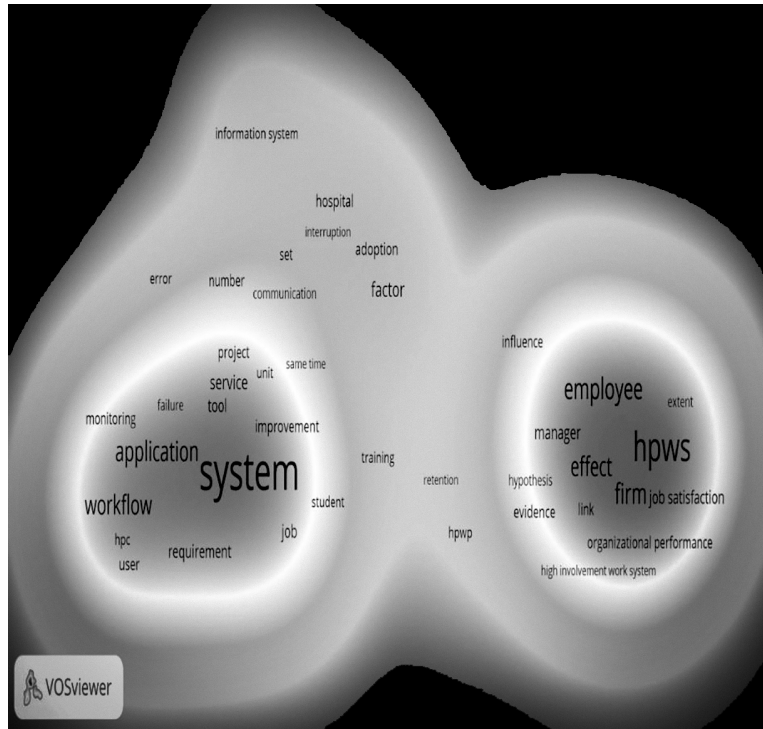
This section has been organized in two major parts: (1) Evolution of the HPWS Concept, and (2) Transitional Context of Australian HE Sector.

4.1 Evolution of the HPWS Concept

The study by Posthumam et al. (2013) refers to the human resource as 'architecture' that includes four different levels such as principles, policies, practices and products. This four-level of human resources establishes an organization's vision, mission, values, strategies, tactics, and competencies. These strategic HR systems that enhance employee competencies, commitment and productivity are often called 'high-performance work systems' (Appelbaum, Bailey, Berg and Kalleberg, 2000; Dutta, Guthire and Wright, 2005). Selection, training, appraisal and reward are the four commonly used contents of HPWS (Posthuma et al., 2013). Ichiniowski, Shaw and Prensushi (1997) identified six high-performance work practices (HPWP): incentive pay, recruiting and selection, teamwork, employment security, flexible job assignment and labor relation. Comparably, Wright and Boswell (2002) ascertained a bundle of six HPWP that includes selection, training and development, recruitment, compensation, performance management, participation, and work/design.

Figure 1 shows two dominant clusters of HPWS research. The green cluster represents the service and manufacturing sectors covered by HPWS literature. The red cluster identifies a research trend linking HPWS to employee job satisfaction, commitment, retention, and organizational performance. The red cluster also highlights the human resource management (HRM) discipline, where researchers have usually conducted quantitative research in the service sector. The red cluster has gained academic recognition due to its high impact. One of the main contributions of this research is that it focuses on the systematic search and critical review of HPWS related literature. This research design provides a precise instrument to identify new directions within the Management, HRM research, and prevailing paradigms, which can be highly useful for future management, education, behavioral science, and business discipline researchers. The following sections chronologically explore the HPWS research paradigm for future direction. Four major time frames have been identified to structure the discussion in this section.

Figure 1: The key themes, discipline and industries covered in the HPWS literature



Source: Intellectual structures of the HPWS discipline; visualization performed using VOS viewer© – map created without applying any normalization.

4.1.1 The early stages of development (1900-1970):

Performance-based management practices have been advocated in the form of best practices by the scientific management community during the 1900s (Parks, 1995). Taylor and his followers mainly focused on finding best practices driven toward productivity, as productivity was the only regular performance outcome of that time (Cappelli & Newmark, 2001). Later, behavioral scientists redirected the focus of this best practice trend towards finding the Industrial Relation practices that lead to increased job satisfaction and motivation, and eventually employee performance. Herzberg's (1966) and Hackman and Oldham (1980) are examples of the above trend. From the 1960s, research was directed towards finding the best HR practices for improving employee motivation and performance (Kling, 1995; Parks, 1995).

4.1.2 The early conceptualization stages (1970-1990):

The concept of high-performance work systems (HPWS) emerged from the human resource management (HRM) discipline with the initiation of Japanese high-quality production systems in the 1970s through to 1980s (Boxall & Macky, 2007). These production systems initially included quality circles, just-in-time inventory and delivery, and a flexible team-based production (Boxall & Macky, 2007; Bartram, 2005; Boxall & Purcell, 2003). In the early 1980s, the strategic human resource management concept (SHRM) became popular. This perspective linked HR strategies to business strategy as the primary tool for gaining competitive advantage (Schuler & Jackson, 1987; Schuler & MacMillan, 1984). Since then, several HR practices have been used to observe causal relationships between individual HR practices and organizational outcomes (Huselid & Becker, 1996). Since 1986, a comprehensive list of HR best practices was tested in the U.S. context by Delaney, Lewin and Ichniowski. Their research findings were published in 1989. However, the term 'HPWS' was not widely used (e.g., Delaney, Lewin, & Ichniowski, 1989).

4.1.3 Conceptualization stage (1990-2000):

In 1990, the Bipartisan Commission on the Skills of the American Workforce, led by two former Secretaries of the U.S. Department of Labor, coined the term 'High-Performance Work Organization' in 'America's Choice: High Skills or Low Wages!'. The term 'High-Performance Work Practices (HPWP)' was first used in a study published by the U.S. Department of Labor in 1993, and it has been used ever since (Huselid & Becker, 1995; U.S. Department of Labor, 1993). Later, HRM practices were linked to the performance of U.S. manufacturing industries (Ichniowski & Shaw, 1999).

Parks (1995) pointed out that the contents of a high-performance workplace vary across writers, academic disciplines, companies, production plants and countries. The original list of HPWPs developed in the USA was further extended and customized for use in specific strategic contexts (like the service industry) in different studies during this period. However, these studies mostly covered Anglo cluster countries or western developed economies. Researchers started to critically contest the idea of best practices inherent in the early conceptualization of HPWP with a more logical best fit perspective. A significant shift in the theoretical perspective from resource-based view (RBV) towards institutional or new institutional theory in the HPWS literature was observed at the end of this period (Paauwe & Boselie, 2003). In line with this shift, Storey (1995) defined HRM as a distinctive approach to employment management that seeks to achieve competitive advantage through the strategic deployment of a highly committed and capable workforce, using an integrated array of cultural, structural and personnel techniques.

The HPWS concept primarily included comprehensive employee recruitment and selection procedures, incentive compensation, performance management systems and extensive employee involvement and training at this stage (Delery, Gupta & Shaw, 1997; Huselid & Becker, 1995; Jones & Wright, 1992). A consistent stream of contributions to the area of the HPWS extended this concept beyond traditional HR activities by linking them to performance (Huselid & Becker, 1995; Jones & Wright, 1992). Table 2 highlights the seminal contributions that shaped the HPWS concept from 1990 till date.

4.1.4 The entire formation of the HPWS concept (2000-2018):

From 2000 onward, the configurational perspective and divergence view gained popularity in HPWS literature instead of the universalist and convergence perspectives. SHRM literature now defines HPWS as an inimitable bundle of HR practices with unique internal and external fit to the organization that improves organizational outcomes through a causal chain or a somewhat mysterious black box. The foundation of the contemporary HPWS framework inherently triangulates RBV and new institutionalism perspectives with due acknowledgement of both 'inside out' and 'outside in' view of strategic direction and adaptation of HR practices in an organization. Boxall and Macky (2009: 9) pointed out the importance of considering the diverse range of strategic focus and associated work practices within the service industry and units, contending that "between the extremes of mass and professional services, there are industries and market segments in which firms compete through quality as well as costs, and the

potential exists for more empowering forms of management that enhance customer satisfaction and retention".

The operational definition of HPWS was still considerably varied in this period. Harley (2005) defined HPWS as the systematic use of mutually reinforcing human resource management, which has an emphasis on selecting the right employees, developing their skills, organizing work so that employees have the right to solve problems creatively and use the reward system effectively to motivate employees to achieve organizational goals. Harley et al. (2007) study showed that HR practices are positively associated with autonomy, affective commitment and job satisfaction but negatively associated with turnover intentions, psychological strain and work effort. Similar findings in this period instigated further investigations in uncovering the so-called black box of HPWS-performance link.

Gulzar, Moon, Attiq and Azam (2014) explained the ‘black box’ of HPWS by understanding and determining the effect of HPWS on employees’ counterproductive psychological outcomes and their impact on employees’ behavior (e.g., job satisfaction, job-related stressors, negative thoughts and inconsistency towards positive thinking). Similarly, Messersmith, Patel, Lepak (2011) and Gould-Williams (2011) have also suggested unlocking the black box of HPWS by understanding job satisfaction, commitment and empowerment as mediating variables in the HPWS-performance link. The adverse effects of counterproductive HR practices have been associated with employee turnover and burnout in various studies (Flinkman et al., 2010; Chau et al., 2009; Jourdain and Chenevert, 2010).

Table 2: HPWS studies from 1990 to 2018

Year	Concepts of HPWS	Seminal HPWS paper
1990 to 2000	The link between HPWS/ HPWP and organizational performance	Jones & Wright (1992)
	The link between HPWS/ HPWP and employee performance	Hughlied et al. (1993)
	Best practice versus best-fit debate	Huselid & Becker, (1995)
	Convergence versus divergence	Ichniowski & Shaw, (1999)
	Importance of context in HPWS study	Appelbaum, Bailey, Berg, & Kalleberg (2000)
	Resource-based view	Paauwe & Boselie (2003)
	Focused on quantitative research design	Bowen & Ostroff (2004)
2001 to 2010	Strategic human resource management	
	Internal and external fit	
	HR strength/ climate	
	HR black box	

Year	Concepts of HPWS	Seminal HPWS paper
	HR causal chain	Boxall & Macky (2009)
	Perceived HPWS/employee attribution	
	Institutionalism and new institutionalism	
	Introduction of mixed-method research design	
2010 to 2018	Importance of studying HPWS in developing country context	Boxall, Ang & Bartram (2011)
	Use of case study research design	Boxall (2012)
	Adaption of HPWS as a bundle	Zhang, Di Fan et al. (2014)
	Increased focus on the implication on HR practitioners	Huselid & Becker (2017)
	Extension of empirical studies in different cultural and industrial contexts	Argyris (2017)
	Cross-cultural and comparative studies	Safavi & Karatepe (2018)
	Increase of meta-analysis and multi-level study	
Beyond 2018	Emerging trends in HPWS research	Our study uses
	Systematic literature review (SLR) for a comprehensive model	systematic search and critical review
	Scope for more theoretical integration/tri-angulation with other contemporary concepts such as sustainable HRD and decent work	of literature to propose a comprehensive HPWS
	A more comparative and longitudinal study.	framework for the Australian HE context.

4.2 Transitional Context of Australian HE Sector:

Unlike many other sectors, the performance of higher education institutions includes both immediate and long term complex mix of outcomes influencing the institutional factors at the industrial and national level. This section explores the HR challenges the Australian HE sector faces due to the recent pervasive transformations in the external environment. In line with the institutional isomorphism concept introduced by DiMaggio & Powell (1983) within the theoretical precincts of institutional perspective (see Meyer & Rowan, 1977; Paauwe & Boselie, 2003), we have presented our findings under three major themes in this segment. These three themes are coercive, normative and mimetic forces.

The isomorphism theory within the institutional paradigm has been used to generalise the impact of the institutional changes within the Australian HE sector for this study. We acknowledge that individual institutions within this sector may develop their unique strategy to deal with the challenges. Nonetheless, the recent transitions imposed by external factors have posed

some common challenges to all HE institutions in Australia, leading to some isomorphic changes in the HR policy and practices within the industry. The analysis in this segment is limited to the common HR challenges faced by all Australian HE Institutions.

4.2.1 Coercive forces

Coercive pressures are often embedded in the regulatory process and may formally or informally be enforced in various proportions on different organisations (DiMaggio & Powell, 1983; Meyer & Rowan, 1977; Paauwe & Boselie, 2003). HR managers and agents within a sector may face these coercive forces at the international (e.g., ILO conventions), national (e.g., government policy and regulations on wage or employment) and industrial level (e.g., sector-specific regulatory or policy changes) (Paauwe & Boselie, 2003; Tsai 2010).

The widespread economic and public sector reform in government and especially the concepts of competition and contestability significantly impacted Australian universities (Storey and Armstrong 2003). Table 3 highlights the four significant periods of reform and expansion that took place in this sector. It is visible that considerable expansions took place in the Australian university sector after the late 1990s. Successive governments had to take different measures to monitor the ever-widening range of activities and sector performance (Lokuwaduge & Armstrong, 2014; Middlehurst, 2004; Swansson et al., 2005). Out of the 170 higher education providers in Australia, 43 were operating in mid-2016 as universities, including one specialist university and two overseas universities. The pervasive reformative measures have been transformed into coercive pressure on Australian HE institutes. These regulations impact all aspects of HRM, including job description and specifications, recruitment and selection, training and development, employee relations, conflict management, teamwork, performance management and reward administration.

Table 3: The policy reforms in the Australian HE sector (1945-2018)

Years	Policy reforms and critical focus areas
Phase 1 (1945-1960)	Establishment and building of new Universities, i.e., infrastructure development
Phase 2 (1960-1988)	Growth of binary system of universities and degree-granting colleges of advanced education and abolition of university fees.
Phase 3 (1988-2008)	Removal of the binary divide and introduction of HECS by Minister John Dawkins (Dawkins reforms).
Phase 4 (2008-2018)	2008: Bradley Review 2012: Demand-driven deregulations

Years	Policy reforms and critical focus areas
	Outcomes: The shift in regulatory paradigm from structure to quality The uncapping of undergraduate places TEQSA Role of technology in learning and teaching Multi-campus coordination, enquiry based learning, blended learning programs.

Source: Compiled from various government and HE industry reports. The references are included in the list.

4.2.2 Normative forces

Normative forces are shaped by the link between the management policies and the professionalisation of a particular occupation that affects the nature of management control (DiMaggio & Powell 1983; Paauwe & Boselie 2003). Professionals' shared norms and values in a specific industrial community are acquired through similar formal education, skills and experiences, and professional networks (Boon et al., 2009; Paauwe & Boselie 2003). The normative force of professionalisation has been defined by DiMaggio & Powell (1983) as 'the collective struggle of members of an occupation to define conditions and methods of their work, to control the production of producers, and to establish a cognitive base and legitimacy for their occupational autonomy' (p. 151).

The value of knowledge sharing and collaboration within and across academic disciplines and beyond the institutional boundaries is one of the unique features of the academic community. The professional norms and academic integrity generally supersedes any institutional policies or interests in the academic community, whereas non-academic staff are guided by corporate culture and a different set of normative forces. This separation and contradiction of the normative values between two significant communities (academic vs non-academic staff) in the HE sector create additional HR challenges. This tension is becoming more prominent as non-academic staff are gradually becoming as important as the academic staff from an operational point of view. According to recent reports and data available on the Australian HE sector, this is a significant transition in this industry.

4.2.3 Mimetic forces

In line with March and Olsen's (1976) conviction, DiMaggio and Powell (1983) contented that symbolic uncertainty in the environment, goal ambiguity and lack of understanding of technology may force the organisations operating within a similar set of environments to imitate each

other's policy and practices without much consideration or understanding of their strategic fit. According to Tsai (2010: 1692), "related to HRM, firms may apply, for example, practices of HPWS such as sophisticated selection, intensive training and performance-related pay, in order to cope with uncertain situations or to keep up with their competitors". These mimetic processes at a transitional phase or uncertain environment may lead to isomorphic adaptation of some counterproductive HR practices. In recent years, the Australian HE sector has experienced uncertainty from competition posed by various emerging forms of HE providers. Table 4 presents the various forms of HE providers in Australia according to the latest government reports.

Table 4: HE providers in Australia in 2016/2017

Name of the HE provider	Scope	Number
Universities	Traditional HE degree provider	43
Non-university higher education providers (NUHEPs)	Teaching intensive usually provides undergrad degrees or runs masters programs but no research higher degree programs	128
Non-profit NUHEPs		58
For-profit colleges owned by public universities		No specific figure is found.
For-profit HE institutions (mainly colleges)	Includes all types of for-profit HE providers except faith-based	34
Public institutions offering degrees	The Australian Film, Television and Radio School, the Australian Institute of Police Management, and the various TAFEs	No specific figure is found, but 9 TAFE programs are listed in the TEQSA report 2017
Multinational for-profit higher education companies operating in Australia	Only American private HE providers are operating in Australia now. Teaching intensive usually provides undergrad degrees or runs masters programs but no research higher degree programs	2

Source: Australian Bureau of Statistics website (2017) and TEQSA 2017 reports

According to the Australian Bureau of Statistics (2017), the private sector education and training industry exhibited strong growth reflected by

a 17.7% increase in the sales and service income and a 19.6% increase in earnings before interest, taxes, depreciation, and amortization. This growth of private for-profit HE institutes intensified the competition in the industry.

Traditionally, the teaching-oriented NUHEPs focus on their teaching aspects, while the universities rely on quality research. Essentially, the sharply contrasting strategic orientation across the private for-profit and public, non-profit H.E.s would elicit different work practices and HR outcomes to achieve their desired organisational outcomes. However, TEQSA is putting exceeding importance on the quality assurance aspect of NUHEPs that is driven by research and knowledge sharing (Marginson, 2013). Due to the scarcity of government funding and changes in local student fees and loan policy, most universities are forced to increase their revenue from student fees. The transition of the public and private sector (due to coercive forces) towards the same strategic space creates intense competition and uncertainty in the sector that exaggerated the mimetic and normative isomorphism in this sector (Goedegebuure & Schoen, 2014).

The transitional phase of higher education driven by the government policy, globalisation, I.T. integrated learning, and the changing nature of the market elicits a thorough understanding of the employee performance in this sector, leading to the strategically desired outcomes. To deal with the challenges posed by various reforms and complex demographic mix in the market, most of the high performing universities in Australia today tend to invest in fostering international engagement through collaboration with the industry and provide an inclusive culture for creating more significant impact and achieving sustainable development (Marginson, 2013).

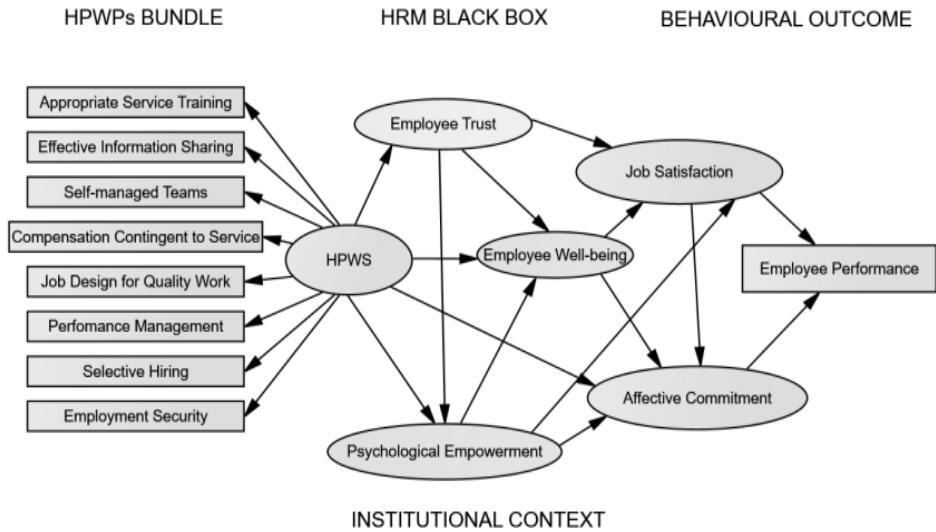
The sector faces several HRM challenges in attaining these strategic outcomes. Research shows that a quarter of its academic workforce is aged 55 and over, compared to 15 per cent for the rest of the workforce in Australia (Coates, Dobson, Edwards, Friedman, Goedegebuure, & Meek, 2009). The proportion of full-time and casual faculty members are also an important strategic issue in terms of the quality assurance aspect as the universities are becoming more consumer-driven and competitive. Universities today operate in a global environment and need a human resource with soft skills to effectively navigate this complexity, including engagement with governments, academic and research community and industry both nationally and internationally. This confirms the importance of the discretionary effort of human resources within the higher education sector to create the desired strategic outcome.

5. Discussion

This study was set out to propose a contextually configured HPWS framework for the contemporary Australian HE institutions. The findings from the critical review of HPWS literature revealed that HPWS has evolved into a well-developed concept over the years with some widely accepted underlying assumptions. We have directly incorporated three of these leading theoretical assumptions in our proposed HPWS framework for the Australian HE sector: (1)HPWS is a bundle of strategically aligned HR practices; (2) HPWS positively predicts strategic HR and organizational outcomes through the mediation of employees' attitudinal and behavioral outcomes; (3)HPWS composition and black box for each case study context is unique.

5.1 HPWS Framework for the Australian HE Sector

Based on the framework proposed by Pfeffer (1998), Zacharatos et al. (2005), and Liao, Toya, Lepak, and Hong (2009: 372) proposed extensive service training, information sharing, self-management service teams and participation, compensation contingent on service quality, job design for quality work, service-quality– based performance appraisal, internal service, service discretion, selective hiring, employment security, and reduced status differentiation in their HPWS composition to promote quality outcomes in service sectors. However, this list needs to be customised according to a selected case's internal and external contexts. We have extracted a range of frequently used words from the selected reports on Australian HE sector literature in NVivo as qualitative input. After cleaning up the words unrelated to the HPWS framework, we have selected contents such as training/development, hiring, pay/benefits, service, information, teams, security, a quality that seems relevant to the HPWS construct. After further analysis and use of NVivo trees and nodes (some examples in Figure 3), we have suggested eight relevant items for the HE sector in our proposed bundle of HPWP. These are (1) appropriate service training; (2) effective information sharing; (3) self-managed teams and participation; (4) compensation contingent on service quality; (5) job design for quality work; (6) service-quality– based performance appraisal; (7) selective hiring; and (8) employment security (Figure 2).

Figure 2: A proposed HPWS framework for the Australian HE sector

Psychological empowerment and employee trust are two widely used mediators in HPWS-performance links in extant literature. Some studies have shown that psychological empowerment positively predicts employee trust, while others indicated that employee trust could make them feel psychologically empowered and more committed. We have used the most popular assumptions about these links in our proposed framework and acknowledge that they could work differently in different case study contexts. We have used employee well-being in our proposed HPWS framework to represent employee's mental and physical health and outcome of less job stress and burnout in the Australian higher education sector. Figure 3 (Appendix) represents a few NVivo outputs that indicate significant visibility of stress, burnout and well-being issues in the contemporary Australian HE related reports and literature.

Emotional well-being is associated with the outcome of employees in HPWS studies. Bartram et al. (2012) contended that the strength of the positive relationship between emotional labor and burnout decreases as perceived HPWS increases. Emotional labor, occupational stress and burnout are significant determinants of career-change intentions in the service sector (Chau et al., 2009; Jourdain and Chenevert, 2010). The findings of the Bartram et al. (2012) study suggest that job security,

selective hiring, extensive training, teams and decentralized decision-making, information sharing, transformational leadership and high-quality work—depend on focused human resource management (HRM) action. Bartram et al. (2012) study provide suggestions for well-being for hospital nurses, which requires the unit managers to display transformational leadership with skills in information sharing and the ability to encourage teams and decentralize decision-making to reduce the adverse effects of emotional labor. HPWS literature predominantly confirms that in a wide variety of industries, the effective use of HPWS is positively related to employee attitudes and performance, unit-level outcome and organizational outcomes (Bartram et al., 2012; Bonias et al., 2010; Khan 2013).

5.2 HPWS, Attitudinal Outcomes and Performance Outcomes

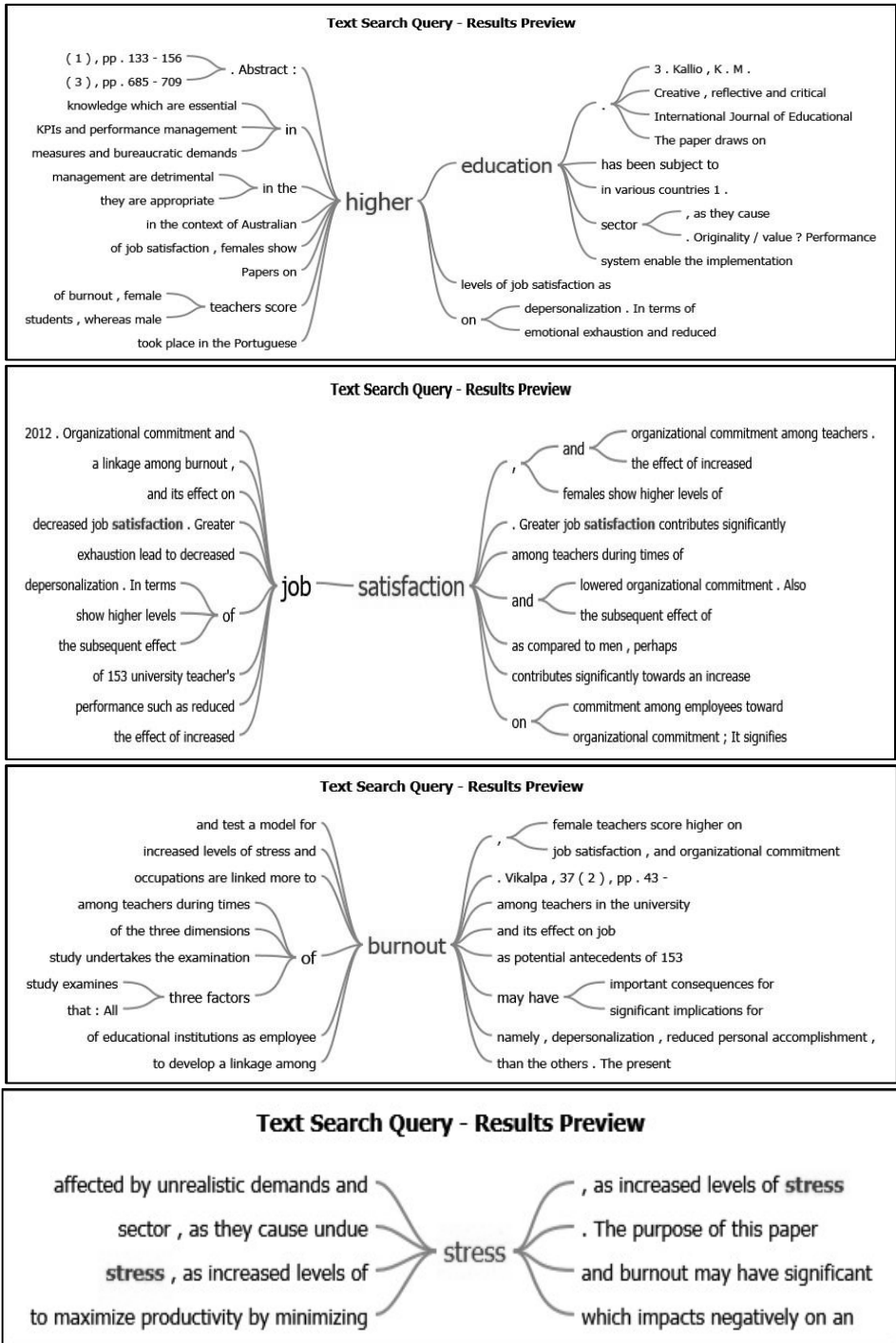
A performance-oriented organizational environment is best described when employees' well-being is essential and employees do not feel psychologically strained (Hartog and Verburg, 2004). Sparks et al. (2001) addressed occupation psychology in four significant areas in the workplace, such as job insecurity, work hours, control at work, and management style. These four aspects impact employee health and well-being, especially psycho-social health and mental health (Sparks et al., 2001). In terms of psycho-social manner, employee health and well-being can be vital for organizational performances (Hartog and Verburg, 2004; Sparks et al., 2001). Employees who have the freedom to choose their work-time schedule and have higher performance ratings reported less stress and better well-being (Sparks et al., 2001). Sparks et al.'s (1997) study has also found a relationship between pro-longed work hours and employees' mental and physical ill-health. Attempts at more in-depth theorization have applied the demand-control theory of stress associated with Karasek (1979), which hypothesizes that increased control or discretion for workers reduces psychological strain and enables them to cope better with higher demands. The study by Sparks et al. (2001) has provided various indications for future research that needs to be explored and investigated. These include social support and efficacy that supports employee well-being and providing healthy food, exercise, weight loss, and smoking and stress management techniques.

Zacharatos et al. (2005) investigated the relationship between human resource management practices and safety performances at the organizational level. The study then explored factors that mediate the relationship between the high-performance work system and safety performance. HPWS predominantly focuses on employees' perspectives regarding organizational performance and outcome. Employees' attitudes, behavior, or other psychological issues are also explored to comprehend

HPWS in an organization better. Hartog et al. (2004) explored the link between high-performance work systems, firm performance and organizational culture from the management point of view. Hartog et al. (2004) study found that the manager's role in rewarding, training and developing the employees works as a motivation for their psychological and physical well-being. Psychological well-being is also mentioned in various studies in recent years in regards to HPWS. The perspective of HPWS aimed to create a competitive advantage for organizations that often tends to neglect the individual employee that results in an increased role overload, burnout and increasing pressure for individuals (Barney and Wright, 1998). Employee outcomes are either ignored or used as an intermediate variable to enhance performance ultimately.

We did not include organizational performance in our proposed framework as many authors consider that link a distal approach (Boxall & Macky, 2009). Nonetheless, organizational performance is connected to the psychological well-being of the employees. Gulzar et al. (2014) contended that employee psychological outcomes (anxiety, burn out and role overload) could serve as a potential mediating link that has been neglected in HPWS studies. We have found overwhelming traces of job stress and burnout in the contemporary Australian HE reports (Figure 3). Chowdhury (2009) has suggested that HPWS can reduce strains, anxiety, frustration, burnout, and overload caused by intensity and stress in the workplace. Gulzar et al. (2014) study found that employees working under pressure can have physical (headache, long term pathology and increased blood pressure), behavioral and psychological effects linked to counterproductive behavior at workplaces. Our proposed HPWS framework has incorporated the variables suggested by the HPWS for the service industry that seems relevant to the contemporary Australian HE sector reports.

Figure 3: Selected NVivo output on some of the key components of HPWS framework



Data Source: Extant Australian HE reports and literature

Research Gap in the Extant Literature

Posthuma et al. (2013) suggested various future directions for researchers in the HPWS area, such as attracting, retaining and reducing employee turnover in an organization. On a similar note, future research based on national culture using different HPWS of local labor market conditions such as wages and unskilled labor pool has been suggested by Posthuma et al. (2013). Posthuma et al. (2013) indicated some understudied aspects of HPWS: planning, incentives system, strategy, job security, and turnover rate. These issues have considerable implications on academic staff performances, university ranking, and student outcomes (Bell et al., 2012).

Moreover, a handful of studies have examined employee well-being related to work-life balance, job stress, physical and mental health issues, and employee performances within the area of HPWS in the higher education sector (Bell, Rajendran & Theiler, 2012). Gulzar et al. (2014) recommended qualitative research using one-to-one interviews to explore the insights and perceptions of HPWS to develop a holistic framework for positive employee behavior at workplaces. Gulzar et al. (2014) study also recommended employee well-being as one of the variables to include in future studies of HPWS.

Despite its importance, there is a research gap in exploring the appropriate bundle of HPWS and its impact on employee well-being and performance. Our proposed framework will help future researchers to address this gap in the higher education sector in Australia.

6. Conclusion and Scope for Future Researchers

The extant literature predominantly supports the configurational view as opposed to the universalistic view in defining HPWS. This approach emphasizes the study of context to strategically configure HPWS composition and unveil the HR black box that links these systems to the desired employee and organizational outcomes. Despite the economic significance of the Australian HE sector, no study to date has explored the impact of the recent transformative changes on the HPWS configurations in the Australian HE industry. Due to the multidimensional and somewhat contradictory performance outcomes, the inherent complexity makes this context more interesting for HPWS research. This study provided the basic HPWS framework that can be tested empirically by future researchers. Based on the critical review of HPWS literature and Australian HE reports, we have proposed eight strategically linked bundles of HPWPs. This composition should positively predict strategic HR and organisational outcomes through the complex mediation of attitudinal outcomes such as

employee well-being, job satisfaction, affective commitment, psychological empowerment and employee trust. This study leaves room for future researchers in the education and management field to design empirical research to explain further or revise this proposed HPWPs bundle and the HRM black box to ensure a better internal and external strategic fit to their selected case study context. The results from further HPWS studies will motivate the HR practitioners and strategic decision-makers of the Australian HE sector to apply innovative HR practices for promoting decent work and achieving sustainable competitive advantage.

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The Role of Institutional Pressures on the Use of Quality Assurance Practices in Enhancing Effectiveness: A Case Study of Higher Education Institution of Bangladesh

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Abstract

The focus of this study is to explore the institutional pressures and their influence on the use of quality assurance (QA) practices in the higher education institution (HEIs) of a developing country. The findings show that the use of QA practices was the result of three institutional pressures, i.e., coercive, mimetic, and normative pressures. The findings reveal the gradual changes in the nature and intensity of institutional pressure. The changes in institutions QA practices arose due to coercive pressures, including the preferences of stakeholders and regulatory bodies including the University Grants Commission (UGC), Bangladesh Accreditation Council (BAC) aimed at improving the academic standards including academic content and academic programs, curriculum review, research, and establishment of formal QA framework. While mimetic pressures were attributed to the high competition and the resultant uncertainty within the HEI, the normative pressures emerged due to the influence of top management support and training. Moreover, results reveal the effects of QA practices on the effectiveness of the case in terms of increased satisfaction of stakeholders, public image, employability, improved internal and external processes, and stakeholders' confidence. The study contributes to the quality management literature and developing country literature by providing knowledge about institutional pressures and their subsequent impact on QA practices in HEI within a developing country.

Keywords: Quality Assurance Practices, Institutional Pressures, Higher Education Institutions, Case Study, Developing Country.

1. Introduction

Globalization, technological advancement, and the impact of liberalization have brought several changes in organizations. The increasing competition has been challenging organizations to employ various quality improvement approaches that facilitate production of quality goods and services (Ferdousi et al., 2019; Duh et al., 2012). These challenges resulted in enhanced use of Quality Management (QM) practices including Just-in-

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Time (JIT), Total Quality Management (TQM), Quality Assurance (QA), Six Sigma, Lean Production, and so on (Ferdousi et al., 2019; Talib et al., 2013).

Among these tools, QA has brought changes in management practices which in turn result in organizational effectiveness. QA refers to the design and implementation of both evaluation and accreditation processes (Harvey and Green, 1993).

However, the increasing recognition of higher education (HE) as a major driver of economic competitiveness has made quality in higher education more important than ever before (OECD, 2010). The stakeholders' concern regarding the quality of programs offered to students led to public assessments and international comparisons of higher education institutions (OECD, 2010). HE is a comprehensive system of creativity and innovation, which has a significant impact on the sustainable socioeconomic development of a nation (William, 2014). The urge for excellence and learner satisfaction represents a commitment of HE to quality and accountability (Rosa, 2012). Higher Education Institutions (HEIs) have emphasized quality as a key tool to survive and make a difference from others (Aly and Akpovi, 2001). Given the importance of quality, HEIs have started to emphasize adoption of QA practices through strengthening QA policies evolving from relevant national educational legislation and directives. Therefore, they are in search of a formal framework for continuously changing the QA practices in academic programs while maintaining and improving the academic standards.

The term QA in HE indicates the practices that facilitate the attainment of academic standards (Dill, 2007). QA is a holistic approach that covers all processes in HEIs to serve students and other stakeholders following expected quality standards. It is a set of well-structured processes that facilitates educational institutions to achieve their desired goal, thereby to fulfill their objectives. In other words, the QA process determines whether the graduates coming out of institutions achieve the expected standard in terms of skills, attitudes, and values that meet the expectations of society (William, 2014). "Consequently, quality assurance (QA) has an important role in monitoring an institution's processes and performance of achievements, whereby it serves in a consistent application and continuous improvement of processes and reduces the scope for variability" (Gamage et al. 2020). Academic program indicates the integration of courses for educational attainment that satisfies the requirements of any degree or certificate etc. (Self-Assessment Manual, 2016).

Academic standards refers to the level of academic achievement attained by higher education graduates are maintained and improved (Dill, 2010).

However, there are a large number of studies that have examined the adoption of QA in HE (Mok, 2000; Marock, 2000; Kis, 2005; Hoecth, 2006; Ryan, 2015; Kahveci et al. 2012). Some studies have looked into the factors that influence organizations to use QM practices, including QA practices. These studies have examined the association of various contingency factors including, globalization, legal framework, enrollment, expansion policy, and socio-cultural factors in the association between QA and HE (Mok, 2000; Kashsay, 2012). These studies have not included the impact of institutional pressures derived from the changes in the institutional environment (changes attributable to the government, regulatory bodies, accredited companies) (Ferdousi et al., 2016), which influence organizations to adopt QA. It is important to understand these institutional pressures by the organizations as their QA practices need to change along with their institutional environment (Munir et al., 2013). Therefore, the present study is an attempt to provide an insight into the influence of institutional pressures on the adoption of QA.

According to the institutional theory, institutions can enforce the behavior of organizations (Scott, 1995:2001; Meyer & Rowan, 1977; DiMaggio & Powell, 1983). The foundation of institutional theory is based on the ideas of Meyer & Rowan (1977) and DiMaggio & Powell (1983). According to their view organizations conform to pressures exerted by institutions. This study uses the idea of DiMaggio and Powell's (1983) institutional pressures and explores the influence of institutional pressures, namely coercive, mimetic, and normative pressures on the use of QA. According to DiMaggio and Powell (1983), the dependency on other organizations for various resources results in coercive pressure; while mimetic pressure arises when organizations face uncertainty and imitate approaches similar to other organizations to gain legitimacy. Normative pressure derives from professionalization and arises when professional bodies develop specific rules, norms, and values to follow and the managers within an organization follow them (Munir et al., 2013; Papadimitriou and Westerheijden, 2010).

Some recent studies that have focused on institutional perspective to examine the use of different quality improvement approaches, including Six Sigma (Braunscheidel et al., 2011), inter-organizational linkages (Teo et al., 2003), environmental management accounting (Jalaludin et al., 2011), ISO-oriented quality (Papadimitriou, 2010), and TQM (Ferdousi et al. 2019; Ahmed and Ferdousi, 2020; Ferdousi et al. 2016; Westphal et al., 1997). However, little (Seyfried et al. 2019; Geda, 2014) is known regarding the

use of QA from an institutional perspective. Moreover, most of these studies mainly concentrated on the influence of institutional factors that affect organizations operating within developed countries (Westphal et al., 1997; Zinn, 1998).

However, it is not reasonable to use the findings of studies conducted in the developed countries for the purpose of developing countries as these two groups have different characteristics in many aspects, including economic, social, political, and cultural environments that surround an organization (Hawkins and Mihaljek, 2001). Therefore, given their unique environment, it is thus important to consider developing countries as a research setting given their unique environments. Therefore, given the limited studies (Seyfried et al. 2019; Geda, 2014), this study further adds value and contributes to the literature examining the use of QA in higher education institution from a developing country perspective.

Moreover, there are only a few researches (Karumba and George, 2013; Seyfried et al., 201; Lillis, 2012) that demonstrate the effect of QA in enhancing the effectiveness of HEIs. These studies (Karumba and George, 2013; Seyfried et al., 2019; Lillis, 2012) have shown effectiveness in terms of improved customer satisfaction, improved organizational outcomes, and increased revenue inflows. Therefore, the study further contributes to the literature by extending its focus on examining the effect of QA in increasing the effectiveness of HEI in Bangladesh. Accordingly, the study focuses on the following research question:

What is the influence of institutional pressures on the use of QA practices in enhancing the effectiveness of higher education institution in Bangladesh?

Based on this research question, the study focuses on the following research objectives: (1) to explore the nature and extent of QA practices in the higher education institution in Bangladesh (2) to explore the influence of institutional pressures on the use of QA practices in the higher education institution in Bangladesh (3) to explore the impact of QA practices on enhancing the effectiveness of higher education institution in Bangladesh.

2. Theoretical Framework

The New Institutional Sociology (NIS) strand of institutional theory indicates that the elements of the wider environment influence the behavior of organizations. According to the NIS, to gain legitimacy organizational behavior focuses more on environmental pressures, particularly, organizations on which they are dependent. Previously, the emphasis was

on the technical environment, resources, and technical know-how; however, institutional theory has shifted to emphasize the importance of the social and cultural environment, particularly social knowledge and cultural practices (Buhrman, 2011). The institutional theory views institutions as social structures which can enforce behavior (DiMaggio & Powell, 1983). According to the notion of institutional theory by DiMaggio & Powell (1983), organizations conform to pressures exerted by institutions. The theory implies that an organization is a system under which the members are involved in changing the organizational arrangement and practices (Scott, 1998). DiMaggio & Powell (1983) viewed organizational similarity as a consequence of legitimacy and it is found to be beneficial to conform to institutional pressures. The increased level of legitimacy, social status, commitment, loyalty, and conformity may derive from the conformity of institutional pressures (Meyer & Rowan, 1977; DiMaggio & Powell, 1983; Scott, 1995). There are three types of institutional pressures identified by DiMaggio & Powell, (1983) namely, coercive pressure, normative pressure, and mimetic pressure. Coercive pressures arise when organizations are forced to conform to institutional rules and regulations. These types of pressures may occur between organizations where there are power differences. For instance, in HEIs the stakeholders place pressure on institutions to maintain specified policies and guidelines to increase the quality of the output. In addition, stakeholders give preferences to those institutions that comply with the preferences.

Normative pressures driven by professional bodies that encourage institutions to accept certain processes, structures, and systems, thereby placing pressure on organizations that feel obliged to adopt them (Burns, 2000). According to Braunscheidel et al. (2011) university specialists and professional organizations indicate the professional bodies that advocate the rapid diffusion of changes. In HEIs, top management and faculty members influence institutions to adopt various practices through organizing training, workshops and educational programs.

Furthermore, mimetic pressure arises due to environmental uncertainty (Munir et al., 2011). In this respect, Braunschedel et al. (2011) mentioned, under uncertain environmental conditions, organizations tend to copy or imitate the practices of similar successful firms. Mimetic pressure describes an organization's adoption of similar structures and processes (DiMaggio and Powell (1983). For example, the competition and the resultant uncertainty led institutions to imitate teaching-learning tools and techniques, procedures, or QA practices of other effective HEIs to maintain their position.

Using DiMaggio and Powell's (1983) notion of institutional theory, this study will explore the influence of coercive, mimetic, and normative factors on the use of QA and its effectiveness of HEI.

3. Literature Review

This section provides a review of literature concerning the use of QA in organizations, in particular, in HEIs. In addition, this section provides related literature on the institutional pressures that affect the QA practices of HEIs. This section also covers the studies that focused on the impact of QA on the effectiveness of HEIs. The rapid increase in competition, fast changes in technology, increasing quality standards, demographic changes, and privatization in education have resulted in the use of QM practices in higher education (Abubakar et al. 2016). In line with that, Dill (2007) mentioned that the increasing importance of human capital in the development of economic and social aspects of societies led to a search for new methods of assuring and improving academic standards. The review of literature suggests that QA is considered as a key aspect of HEIs as articulated in the development of policies, structures and systems (Geda, 2014). Some view QA as how an institution maintains and enhances its quality standard (Petersen, 1999). In line with that, Borahan and Ziarati (2002) viewed QA as a way to increase confidence in assuring its quality requirements by HEI. Similarly, QA indicates a set of methods targeting to satisfy the purpose of HEIs, in addition to meeting other quality standards at a program or institutional level (Ryan, 2015).

However, a large number of studies have examined QA in the context of higher education. While some studies have addressed QA as a concept (Elassy, 2015; Harvey & Green, 1993; Harvey & Knight, 1996; Lomas & Ursin, 2009), some have focused on its dimensions (Owlia & Aspinwall, 1996; Lagrosen et al., 2004), a few have focused on the practices of QA (Asiayi, 2020). However, the advanced research on QA emphasized more on justifying the practices to develop an understanding of the effect of context on use of QA. For example, few studies have used contingency based research to search for conditions that facilitate the use of QA (Mok, 2000; Kashsay, 2012). There are only a few studies (Sayfried et al. 2019; Geda, 2014) which have examined the use of QA from an institutional perspective. The study by Geda, (2014) shows the impact of organizational environments on the use of QA in HEIs. The results indicate that there are very few steps taken by the public HEIs in enhancing quality activities, whereas legitimacy is found as a dominant factor for securing stability and survival. It also emphasizes that organizations may respond to environmental pressures through formal and symbolic steps. In this respect,

Seyfried et al. (2019) mentioned the impact of coercive, mimetic and normative pressures on the use of QA practices in the perspective of higher education. Findings reveal that isomorphism is a leading driver behind the adoption of QM practices, including the QA practices in German higher education institutions. However, considering these limited studies, this study aims to provide further insight into the influence of three pressures, namely coercive, mimetic and normative pressures on the use of QA in the HEIs.

However, there are a few studies (Karumba and George, 2013; Seyfried and Pohlenz, 2018; Lillis, 2012) that have focused on the impact of QA in increasing the effectiveness of HEIs. In line with that, Karumba and George (2013) showed the impact of QA strategy on the increased satisfaction of customer and organizational outcomes; and increased revenue inflows. In a similar vein, Lillis (2012), concluded that social-program evaluation has significant potential in evaluating the effectiveness of QA initiatives in higher education. Moreover, Seyfried and Pohlenz, (2018), expressed effectiveness in terms of structural variables and activities related to quality assurance. The results show that support by HEIs' top management and cooperation with other educational institutions are relevant preconditions for perceived degrees of quality assurance effectiveness. Therefore, considering the limited studies, this study also aims to provide further insight into the impact of QA practices in enhancing the effectiveness of HEIs in a developing country. However, in developing countries, higher education confronts issues including expansion, resource scarcity, increased competition, accountability to more stakeholders and the growing complexity of knowledge (Materu, 2007). Moreover, over the last decade there has been a significant growth of tertiary institutions and increased enrollment of students made Bangladesh an exemplar phenomenon of massification of HE. However, because of this improved access to HE (Trow 2007), one of the greatest limitations lies in the lack of QA policies which warrant best teaching and learning practices in Bangladeshi HEIs while maintaining and continually improving its standard (Rahnuma, 2020). Therefore, it is critical to explore the extent of QA practices adopted by the HEI's and the factors that drive the QA practices.

3. Method

The HEI is chosen because of the importance of this sector as affected by various constraints ranging from lack of accountability for performance among institutions and weak QA mechanisms (Mannan, 2015). One case HEI (here after Case 1 from the private institutions) was purposively chosen based on their reputation, the number of PhDs as well as their important

contributions to society. Considering the time constraints the researcher only considers the Faculty of Business and Economics. The 'Faculty of Business and Economics' for Case 1 was considered as it is the largest consisting of two departments with around 80 faculty members. The result of the study may not be generalizable.

A qualitative approach was used to gain a better understanding of the influence of institutional pressures, in particular coercive, mimetic and normative pressures on the use of QA and its impact on the effectiveness of HEI. Using an interview schedule (open ended questions), data was collected to obtain information concerning the context, changes, and various internal and external organizational factors that brought such changes. Data was collected by the researcher and the research associate.

Purposive sampling was used to conduct 10 to 11 face-to-face interviews with faculty members, top management, and relevant quality officers from the case institutions (Tables 1). Interviewees were required: (i) to have had involvement with QA activities in case institutions; and; (ii) to be willing to participate in the study. The interview was continued until the repeat of the responses. Due permission was taken from the respondents through email or over the telephone. While participants were allowed to conduct the interview in both Bangla and English, a large number of respondents responded in English and only a few respondents gave their response in Bangla. Accordingly, the Bangla interviews were transcribed and translated. Data was analyzed using NVivo software (NVivo is a software which is used for qualitative research and facilitates the analysis of text, audio, video, and image data, including interviews, focus groups, surveys, social media, and journal articles).

Table 1: List of participants

Case 1 (Faculty of Business and Economics)	
Respondents	Department
Respondent 1	Department of Business Administration
Respondent 2	Department of Business Administration
Respondent 3	Department of Economics
Respondent 4	Department of Economics
Respondent 5	Department of Business Administration
Respondent 6	IQAC
Respondent 7	Department of Business Administration
Respondent 8	Department of Economics
Respondent 9	Top Management
Respondent 10	Department of Business Administration
Respondent 11	Department of Economics

While at the early stage of data analysis, the data was grouped into many codes. Finally, these codes were specifically categorized into coercive pressures (directives from UGC, BAC, and top management), mimetic pressures (competition and resultant uncertainty) and normative pressures (top management support, professional institutions, employee training and programs; changes in company culture). The documents used included meeting minutes, bulletins and institutions' websites. Furthermore, evidence was also collected from other records, including the UGC's instructions. The triangulation method (within method) was incorporated where the responses of the interviews and the documents collected from various sources as well as observation were compared (McKinnon, 1988). The use of multiple data sources reduces the risk of validity issue because it is related to different research contexts or to different information about the same research that is comparable. The reliability was ensured through the use of archival documents.

4. The Context of QA in HEIs in Bangladesh

The quick expansion of higher education systems led to different types of higher education providers, including public and private institutions, cross-border institutions and distance education institutions. However, whatever the type, the economic and other constraints are always considered as inhibiting factors that impact the quality of HEIs in many developing countries. There is always a negative view about the quality of higher education in Bangladesh (Islam, 2007). Research showed that many HEIs in Bangladesh failed to produce skilled graduates that are ready for industry (Chisty et al. 2007). It is claimed that despite having excellent academic results, graduates have poor communication skills to meet the requirements of the industry (Khan 2010).

In Bangladesh, till 2015, there was no national level quality assurance system covering the entire HEI sector. There is no effective QA wing at the University Grants Commission (UGC) to ensure QA in HEIs. However, the strategic plan for Higher Education emphasized this issue (Institutional Quality Assurance Cell Fund Operations Manual, 2015) and suggested a formal body (Accredited Council) that facilitates both public and private institutions. The Government of Bangladesh (GoB) prepared the Higher Education Quality Enhancement Project (HEQEP) with the World Bank's financial support and started its implementation in 2009. Accordingly, the HEIs are instructed to establish IQAC to ensure institutional level QA. Moreover, The Ministry of Education, The People's Republic of Bangladesh has also approved Bangladesh National Qualifications Framework (BNQF) as per section 15 (1) of the ACT 2017.

4.1 Case 1

Case 1 is a private university providing education at a reasonable cost in Bangladesh. It was first initiated by a group of leading academicians, distinguished educationists, corporate leaders and professionals. It is one of the top private universities in Bangladesh, providing tertiary education, at a reasonable cost in a range of subjects to satisfy the current and anticipated social needs. While Case 1 is highly dedicated to maintaining high quality in every aspect of education and research (meeting minutes, Bulletin and brochures), it also provides community service through several activities, including circulating information, arranging training programs, and other activities. Case 1 is always committed towards offering an environment of productive learning and innovative thinking (Source: EWU Website).

However, among the other faculties, the Faculty of Business and Economics (as it is the focus of the case) is focused on creating opportunities for career advancement and leadership positions (meeting minutes and website). The programs are designed to enhance global business and economic skills, flexible technological knowledge, thereby to meet current and future challenges. Faculty members are research-oriented and are dedicated to creating knowledge through research (meeting minutes, brochure, and bulletin).

4.2 The Nature and Extent of QA Practices of Case 1

Prior to 2015, Case 1, used to follow an internal QA mechanism that was not fully structured. A number of respondents mentioned that initially, while Case 1 started with a very simple QA practice, gradually it developed an internal framework of QA which was led by the founders (revealed from observation). The key focus of this framework was to monitor and evaluate its teaching methods, teachers' performance, teacher selection, staff selection, student assessment, student admission, curriculum development, among other things. Respondents indicate that the given framework enabled them to manage the quality to some expected level. In this respect, respondent 5 expressed that, while there was only a small number of private universities operating in Bangladesh, Case 1 was not under much pressure to change the existing pattern of their QA mechanism. But due to the competition led by the increased number of public and private institutions, the existing quality practices began to change (revealed from observation). In this respect, respondent 2 indicates:

" while there were only a small number of private universities in Bangladesh, the competition was not that fierce, our internal framework of QA worked well to manage quality to some expected level".

However, respondent 1 also stated that at the beginning, the requirements of stakeholders' regarding QA were very minor and they were satisfied with the quality maintained by Case 1. The respondents' view suggests that Case 1 was not agitated about frequent changes in QA practices as management found the existing QA practices going well. In regard to that, respondent 2 expressed:

"..... Our existing QA practices were found as satisfactory as there was no major complaint from the stakeholders. Due to less pressure from stakeholders, we were little concerned about changing the existing QA practices".

However, it was apparent that there was a significant change occurred in Case 1's environment following the change in the requirements in the QA mechanism by the government through the University Grants Commission (UGC) in 2016. For example, the parameters for QA activities in this institution have become harder, which led to an urgent need for a framework that must have to ensure appropriate program delivery disciplines and governance. Accordingly, Case 1 developed a formal Framework of QA. These changes led to institutional pressures which subsequently led Case 1 to introduce the Institutional Quality Assurance Cell (IQAC). However, participants' view revealed that the changes in QA practices occurred due to various institutional pressures and some of these pressures were found to have a greater influence than others, as discussed in the following sections.

4.3 Institutional Pressures to Change QA Practices

4.3.1 Coercive pressures

The initial coercive pressures arose due to the stakeholders. Their concern regarding the quality of HE led to the pressure on Case 1 to look back to their existing QA practices. The gradual changes in stakeholders' preferences started to influence Case 1's processes, especially concerning the quality of academic standards, including academic programs and academic content. In particular, Case 1 felt pressure to upgrade certain quality practices to comply with the expectations of the stakeholders. Under these circumstances, Case 1 was forced to upgrade the performance indicators and skills required for both faculty members and students. With an emphasis on graduate quality, Case 1 firstly, focused on student selection criteria which mainly focused on the admission process where the academic results with specific skills are emphasized (computer literacy, speaking ability) (respondent 3, 5, and 6). In line with that, the directives from top management led to a little harder assessment in terms of admission test questions, marking, and viva. However, these changes were the results of the stakeholders' expectations and viewed as a way to get the quality input

to produce good output (graduates) (respondent 9). However, following the stakeholders' pressure, secondly, the top management forced Case 1 to focus on improving relevant skills and abilities of students, including the 'Critical Thinking skills', 'Analytical skills', 'Communication skills', 'Presentation skills' in enhancing the effectiveness of students to face the fierce competition. In this respect, the top management prioritized the critical role of faculty members in enabling students to do all kinds of learning through curricular and co-curricular activities (respondent 5). However, respondents mentioned that students were encouraged to be involved in different club activities and participate in various competitions where faculty members used to take the lead, thereby enhancing their skills and abilities. In line with that, respondent 4 expressed:

".....It was important to emphasize student activities in responding to the fierce competition. The directives from top management were crucial in bringing these changes... "

However, over the time, the directives from top management led Case 1 to follow a framework that assists the institution in monitoring the quality of teachers and students, and thereby to track the satisfaction. As claimed by respondent 3, to enhance the faculty quality, Case 1 had to integrate a wide range of changes such as establishing visible quality measures (teaching/learning activities and assessments must have to align to the course objectives; participation in conferences, seminars, and workshops, research symposium), thereby to ensure a continuous improvement. In this regard, respondent 5 expressed:

".....while the academic achievement of graduates largely depends on faculty quality, the top management always focused on enhancing teachers' quality through creating various learning opportunities."

In respect to enhancing the quality of teaching, respondent 1, expressed:

"... the increased awareness of improving academic standards led us to revise the criteria of academic appointment as well as the performance indicators of faculty members. However, these changes facilitated our institution by satisfying the stakeholders' expectations (Respondent 1). "

Following the quality target by Case 1, PhD received additional emphasis to enhance the capability of the faculty member. While a PhD was previously required only for the most senior positions, Case 1 critically emphasized PhD as a mandatory requirement for the appointment of other academic positions as well as promoting faculty members from junior to senior positions under top management directives. As mentioned by the respondents, while Case 1 showed its concern in appointing the most

efficient faculty members, additional instruction from UGC led them to be more strict in this respect. Furthermore, respondent 3 stated that, in addition to a strict selection process, top management established slightly more stringent criteria for faculty and staff promotion. In addition, it is found that the faculty members were consistently instructed to publish research papers in peer-reviewed journals. According to respondent 7, these complex quality requirements were targeted by the stakeholders to enhance the quality of faculty research.

In line with that, respondent 6 mentioned:

"... it was a great initiative by the top authority to set harder appointment and promotion criteria, which we believe to be the best way to improve many aspects of faculty performance.in addition, the research fund as well as the faculty development fund were found as significant motivating factors for the quality improvement..."

To meet quality requirements set by stakeholders, top management also prioritized faculty evaluation as an important measure of improving faculty quality. Following the stakeholders' requirements, Case 1 initiated "Research Fund" to motivate individual research or research in collaboration with others from within or outside the institution (respondent 1). Moreover, a "Faculty Development Fund" was in place to encourage participation in conferences, workshops, and training.

Hence, the directives from the founder member coerced Case 1 to obtain 'Permanent Sanad' to satisfy stakeholders' requirements. While respondent 3 indicated that obtaining the 'Sanad' was a difficult process, this was accomplished through continuous support from all levels of people. As mentioned by respondent 3, among many other conditions to obtain the 'Sanad', the transparency of Case 1 in respect to student admission, teachers' recruitment, financial matters, governance is one of the conditions and a key requirement of stakeholders which is satisfied by Case 1.

No other significant changes occurred until 2016. However, the initiation by the government of a national level QA Framework further forced Case 1 to ensure institutional accountability for performance. This external assessment process was in place to assess the existence, adequacy, and effectiveness of internal institutional QA mechanisms within institutions. Respondent 4 viewed that, similar to other institutions, Case 1 was also under pressure to establish IQAC as a means of improving quality continuously, thereby complying with the requirements of the stakeholders. Following this, a Director of IQAC has been appointed with prior

experience in QA activities. Under this cell, firstly, a "Self-Assessment" was conducted to identify the strengths, weaknesses, and the gap of Case 1. Following the report of Self-Assessment by "External Reviewers", the convener of SAC (Self -Assessment Committee) held several follow-up meetings. In these meetings, Case 1 emphasized the revision of the "Course Curriculum", and increasing some infrastructural facilities. As a result, a committee was formed to revise, update, and include new content in the existing curriculum as per requirements. However, respondents' view revealed that after 2016, UGC and top management led to further pressure to revisit all the aspects of QA practices concerning student, faculty, and academic programs as per national guidelines. Subsequently, the UGC and Bangladesh Accreditation Council (BAC) led additional pressure to adopt the 'Outcome Based Education' (OBE) system and accreditation of the programs. Hence, it was apparent that the preparation for accreditation was a rational decision by Case 1 to secure its position in the competitive market.

4.3.2 Mimetic Pressures

The extensive competition resulted from the inclusion of many private and public universities affected Case 1's operations. Accordingly, the focus on increasing the number of job placements led Case 1 to observe the competitors and the placement of their graduates. In this respect, the case institution needed to review the top-ranked other universities. The review of competitor institutions facilitated Case 1 to identify the necessity of adopting the 'Outcome Based Education' (OBE) System, which was crucial for Case 1 to improve the quality of graduates, thereby preparing them for the job market (respondent 2 and 11). While case 1 realized that the traditional education system does not provide students with the necessary knowledge and skills which fulfill the performance expectations, the attempt to adopt OBE was to transform education into personalized learning through designing instruction models tailored to the learning preferences of students. In this respect, respondent 1 indicated:

".....many foreign institutions' [universities]" Outcome Based Education System "motivated us to introduce such a system. We were motivated to follow OBE to set clear standards for the observable and measurable outcomes for our students.

The respondent view suggests that one of the key reasons for focusing on OBE was to facilitate students with measurable skills and results. As expressed by respondent 3, along with the pressure from UGC, the competitors' success in increasing students effectiveness by adopting OBE was a motivation for case 1 to adopt such a system.

Further, the enhanced focus on increasing the rate of employability of its graduates, various industry relevant skills including adaptability skills, leadership skills, and public speaking skills were emphasized by case 1. However, the competitor institutions eventually motivated Case 1 to adopt practices including inviting experts and organizing study tours regularly. Consistent with the argument by DiMaggio and Powell (1983), the observance of successful organizations' QA practices resulted due to mimetic pressures, which encouraged organizations within an industry to adopt similar practices to gain legitimacy. Furthermore, it is revealed from the observations that while few high-performing local institutions provided high-quality education with well-equipped infrastructure, Case 1 eventually upgraded its campus facilities to maintain its market position.

According to respondent 8, Case 1 was inspired by the success of its competitors to create a well-equipped campus with amenities such as an 'open playground,' a 'study space,' a 'cafeteria,' and a 'modern auditorium.' A well-structured, highly equipped infrastructure was crucial for Case 1's success. In this respect, respondent 5 indicated:

"...the campus and facilities of peer institutions led us to establish its permanent campus with attractive and contemporary modern facilities for the students, faculties, and staff.

Moreover, while library facilities are considered as a key source for facilitating students' learning, Case 1 upgraded its library to one of the most modern libraries in Bangladesh in terms of wide collections, variety of services, modern technology, qualified manpower, user education, and service marketing. Respondent 8, mentioned that the adoption of a highly equipped library to produce better service was expected by Case 1's stakeholders.

Further, while Case 1 was aiming to enhance faculty quality and also to retain their highly qualified faculty members, directives from top management led to 'Study Leave' opportunity for young and willing faculty members to study abroad. The paid 'study leave' with an active service status was mentioned as a significant factor for faculty motivation and improvement. Respondents' view expressed that while there are only a few competitor institutions used to offer 'study leave' with pay, their success in creating faculty motivation was a pressure for Case 1 to adopt such practice. In this respect, participant 4 expressed:

..... the study leave opportunity with pay was a motivation toward higher education..... indeed, it is a good strategy to encourage faculty members to return to the workplace. This was an appropriate decision taken by the top authority.

4.3.3 Normative Pressures

Normative pressures were associated with top management support and training. The respondents and the review of the documents revealed that with support from top management, IQAC initiated faculty development programs to provide training to the faculty members. In addition, faculty members received external training and later provided training to other faculty members based on their work responsibilities. In this respect, respondent 3 expressed:

"... We encourage regular training on a variety of topics, such as teaching methods, research methodology, soft skills, and so on, in order to improve the performance of individual faculty members and students."

However, the IQAC and Center for Research and Training (CRT) were found to organize training to encourage a promising Learning environment with effective support, thereby, contributing to quality teaching. More over, the increased quality concern gradually resulted in the top management of Case 1 inculcating a culture of continuous improvements. Accordingly, at the departmental level, various workshops and training have become a common practice. In addition, respondent 4 stated that "Departmental Development Committee" (DDC) and "Academic Committee" (AC) meetings are organized regularly by the department to discuss quality-related problems and initiate progress regarding quality practices. As revealed by the respondents, the support of top management, the Director of IQAC, and departmental heads of Case 1 played a key role in effectively communicating the need to adapt and upgrade QA practices in the institution. They develop and promote a culture of continuous improvement and use their experiences, skills, and knowledge (meeting minutes, observation).

However, the respondents' view indicates that the adoption, revision, and changes in the QA practices have changed stakeholders' satisfaction, including the students, guardians, employers, and regulatory bodies. While improved institutional outcomes, increased public image, and increased acceptance of this institution were found as key indicators of Case 1's effectiveness, the importance of internal processes was also mentioned by Case 1's management.

5. Conclusion

This paper investigated the influence of institutional pressures on the use of QA practices and the impact of QA practices on the effectiveness of higher

education institution. First, the qualitative study provided evidence on the extent and nature of QA practices.

Secondly, the study identified the influence of institutional pressures, including coercive, mimetic, and normative pressures on the use of QA practices. Thirdly, the study identified the impact of QA practices on enhancing the effectiveness of HEI in Bangladesh. The contributions of this study include: QA studies within the Quality Management (QM) literature and the literature on developing countries. This study develops a practical understanding of how the institutional environment influences the changes in the use of QA practices. Specifically, using the institutional theory, this study highlights the changes that were made to the QA practices of a HEI within a developing country. This study adds to the small body of literature by investigating the impact of institutional pressures on the adoption of various QA practices in case institution. The study also contributes to identifying the effectiveness of HEI within a developing country.

The findings showed that the changes or introduction of case institution's QA practices was the result of an institutional environment that was significantly influenced by factors including government and other stakeholders' pressures, top management, competition, and regulatory bodies. Hence, the result shows that the institutional environment led to the changes in QA practices in Case 1. Specifically, the case institution brought several changes in their QA practices to satisfy the requirements of the institutional environment and to gain legitimacy.

The institutional pressures facilitated Case 1 to point out its key shortfalls related to QA practices, thereby upgrading its academic standards including academic programs and academic content, the outcome of graduates in an attempt to satisfy its stakeholders. However, results showed that following the changes, Case 1 turned its focus more on quality-oriented objectives. The management of the institution found the necessity to focus on quality and QA practices became a routine practice. More importantly, QA practices were found as the source of greater outcomes for graduates, which finally led to a culture of continuous improvement within the case institution.

The study indicates that while the three institutional pressures, including coercive, mimetic, and normative, brought several changes in QA practices, the nature and intensity of the institutional pressures changed over the period of analysis. For example, while initially the extent and types of QA practices were at a minimum satisfactory level with simple QA practices, these changed over the course of time.

The pressures by the stakeholders', directives from top management, UGC, and BAC led to the emphasis on changes in quality required and resulted in a number of measures taken by Case 1 including academic standards in terms of academic content and academic programs. Following that, changes were made to performance indicators for both teachers and students, including criteria for promotion and new appointments; student assessment process; admission criteria, classroom environment; inclusion of new departments and programs; Outcome-Based Education (OBE), research; and faculty development. Moreover, the requirements to comply with the national QA framework led Case 1 to establish IQAC. Moreover, the influence of BAC led Case 1 to prepare for accreditation.

The findings also demonstrate the increased level of competition as a source of mimetic pressure, with Case 1 imitating various QA practices such as Outcome-Based Education System (OBE); industry-focused curriculum; Interactive Learning Method; well-equipped campus with study space, modern cafeteria, playground, and modern library facilities. Moreover, normative pressures have influenced the adoption of QA practices for Case 1 further through the introduction of quality training, workshops, and development programs and top management support. Results suggest that while the three pressures, including coercive, mimetic, and normative, were found to have an influence on the case institution, the nature of QA practices was different. The findings show that the changes in Case institution's QA practices were a planned and rationally executed endeavor. Faculty members and top management showed their critical involvement in the change process. Their significant commitment and proper experience facilitated the case in identifying the right direction in respect to QA practices.

Moreover, results showed that the case institution observed various improvements in their performance. However, findings indicate that the key changes in performance indicators for case 1 include the increased number of employability, improved internal processes, increased satisfaction of the stakeholders, and increased institutional image.

There are some important implications for HE authorities operating in developing countries. First, the resultant changes observed by Case 1 will facilitate the authority of other HEIs to understand the necessity of adopting similar QA practices to improve the quality of their institutions. Second, the findings may help the HEIs of developing countries in identifying the key institutional pressures that led to changes in QA practices. These results may assist institutions to better predict the institutional pressures and their

resultant influence on QA adoption, thereby facilitating better adaptation to such pressures. Finally, while the current study focuses on QA practices in HEIs, the findings may provide HEIs an insight into how to adapt to institutional pressures to adopt other management practices.

6. Limitations and future directions

The study was conducted in one institution, particularly at the Business School, using the analysis of related documents and the data collected through interviews. Using a broader range of data, further research may be conducted by replicating the study's findings for different research sites. Although there was always a fundamental risk of missing valuable information, the researchers minimized the concern of reliability by using multiple data sources. Future research may use different data collection methods in response to minimize response bias. Finally, further study may be conducted to identify the influences of institutional pressures on other management practices.

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How to Promote Social Campaigns?-An Analysis of Media Exposure of Generations X to Z

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Abstract

Against the growing difficulty in societies to separate confusing information, development organizations are struggling to get their message through. A fundamental problem lies in the changing habit of processing information by various generations. Gen X generation who are above 40, for example, receive and process information differently than Gen Z generation who are only 25 or less. In this research, using internet-based campaign messages different generations are tracked in terms of how they receive and process information on social changes. Results show that the new generation i.e. Gen Z is harder to reach using the usual strategies like street plays, ads, and billboards. Unlike others, Gen Z uses social media to collect information. This shows that to reach the new generations on social issues, campaigners must use social media rather than the traditional print and electronic media like radio and TV whereas, Gen X and Ys still use traditional media to receive and process information, but they are also gradually switching to other electronic media outlets.

Keywords: Social Media, Media Use, Gen Z, Gen X, Gen Y, Social Campaign

1. Introduction

As the world is bracing to vaccinate the people against COVID-19, there has been a renewed interest to find out how to succeed in such a difficult and arduous task in a world mixed-up with fake and true news. The classical account of reasoning states that people ineffectively discern between true and false news headlines when they fail to deliberate (and instead rely on intuition) and that deliberation facilitates accurate belief formation and not partisan bias (Bago et al., 2020). Similar studies further reveals that fake, misleading and over-interpreted health news in social media is the potential threat for public health (Waszak et al., 2018).

On the other hand, there has been a change in the habit of individuals to receive and process information as societies are transitioning into IR4. In terms of psychological characteristics there are several definitions based on

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which age groups can be labelled as distinctively separate generations. There are some consensuses on them. For example, Gen Z are the ones born between 1997 and 2012, Millennials or Gen Ys are born between 1981 and 1996 (also divided in two groups Gen Y1 and Gen Y2 aged between 25-35, and between 36-44 years as of 2022) and Gen X are born between 1965 and 1980 (Brunjes, 2022). These generations are likely to have a completely different way of thinking and organizing their values as well as different way of processing information. As such, reaching out to them to promote social changes may become a challenging task. Psychologists have analyzed behavioral patterns of these generations and have used these terminologies in analyzing their sales, finance, employment and also information processing behavior (Black, 2010; Bristow et al., 2011; Kasasa, 2021). The primary motivation for this empirical study came from the fact that development organizations have been spending millions of dollars to alter the social psyche on human trafficking, rights of the women, violence against women, human rights and many other issues. To make them effective, the right media shall be used and so it is important to understand how different generations use media and process information related to similar issues.

A recent study relates that nearly 1/4 of a million people have died and four million people are affected either with mild or serious health problems caused by coronavirus. (Naeem et al., 2021). Similarly, there has been a rise in vaccine hesitancy which is contributing to prolonging the sequences of Covid outbreaks across the world. Much of these are fed through misleading or fake news circulating on the internet. Consequently, fighting fake or misleading news has been a major issue to deal with issues related public health, social vices, prejudices, etc. Development organizations across the world have been constantly working to alter the public opinion against many of such threats. However, with the rise the in social media, the traditional public broadcast media like TV, Radio, Billboards are losing its influences to form public opinion in many societies. In USA, for example, newspaper circulation has declined significantly with the rise in social media whereas in India, it has not happened at the same rate (Rajendran & Thesinghraj, 2014). Rejendran and Thesinghraj (2014) further reveals that the drop in circulation of print media is attributed to mostly younger population [i.e. Gen Z or Gen Alpha*], who prefer the interactive nature of the new media and its ease of access (Rajendran & Thesinghraj, 2014). Similarly, organizations working on fundraising for non-profit organizations have been promoting certain strategies to promote their causes. For example, Onecause (2022) suggests social media

* Gen Alpha are born after 2012.

campaigns and viral challenges, ambassador campaigns, virtual awareness events, etc. As some of the comment events to promote social causes in 2021 (Onecause, 2021). While these may be true for the West, is it also the same in the East or more specifically in Bangladesh?

Against this backdrop, this paper uses primary data to understand access to media (traditional as well as social) by different age groups with a view to seeing how they use the media to process information related to various social issues and whether their access and use of media have any bearing on their attitude and understanding of them. The research is part of a supervised research paper completed as a requirement for the Master of Development Studies at East West University.

2. Background

NGOs in Bangladesh used to deploy resources for open-air play of street play (*poth natok*), billboards, posters, and newspaper ads or supplements to raise awareness among its population on issues related to health, education, environment, and social and human rights. Many NGOs still employ cultural teams to write the plays for rural communities, and show-case them in rural bazaars, schools, and community halls through cultural road shows (Nair, 2019). The strategy of using cultural roadshows has been quite successful in the past, and over the past 50 years Bangladesh has been able to fight many social vices. For example, “Bangladesh is one of the top performers in ensuring nutrition and basic medical care, and health and wellness, according to the Social Progress Index 2016 prepared on a study of 133 countries” (Daily Star, 2017).

However, since the 80s, there has been a steady rise in literacy rate, and recently there has been a significant rise in access to mobile internet facilities in Bangladesh. As such, it is time to examine what alternative campaign strategies are required to address new social challenges. This is particularly true during the COVID-19 pandemic as countries around the globe are struggling hard to fight smear campaigns, fake news, etc. which are widely circulated in many social and electronic platforms.

It has been mentioned that in the twenty first century we are dealing with a different generation - Gen Z (1997-2012), who is just now entering the labor market and so policy makers need to be prepared for their arrival. While Gen Z shares many traits with the Millennial Generation (Gen Ys), they also bring in new patterns of behavior (Schroth, 2019). As such, public policy makers, social influencers, in Bangladesh, also must learn about access, use and influence of electronic media of this generations. While studies on

access to media in Bangladesh is a bit old (M. M. Islam & Hasan, 2000), it is time to revisit the information processing attitude and the habit of using social media for processing information of these generations. This will help NGOs and public policy makers to develop alternative strategies to fight the menace of misinformation and prejudice in the society.

This study is designed to understand access to electronic media and its use to process information by various generations. Results can be used to design a better public awareness campaign by the government to deal with challenges of social media. In particular, it will help Non-Governmental Organizations (NGO) and also the Government of Bangladesh to develop and create an effective public awareness campaign on various issues.

3. Electronic Media in Bangladesh

Bangladesh went through a significant transformation in terms of its literacy rate and access to internet. As of March 2021, nearly 116 million people or 70% of its population have access to mobile internet facilities and the current literacy rate is around 74.9% (Wikipedia, 2022b; World Bank, 2021). While this transformation is good news for many, it has also brought a significant challenge for public policy makers who are constantly fighting against spread of prejudice and misleading news. This is evident in every country of the world with the rise in vaccine hesitancy in recent times.

The role of NGOs in Bangladesh to make changes in the social psyche or in the social values cannot be underestimated. NGOs began to operate in Bangladesh after its independence in 1971 when patriotic people came forward to help the newly established government to begin its massive restoration and rehabilitation activities. Many of the pioneers, who established these voluntary organizations, were living abroad and they came back to Bangladesh with resources from foreign countries to build up the war-ravaged economy. Many of them were social activists in Bangladesh who worked passionately to make real changes in Bangladesh. Sir Fazle Hasan Abed of BRAC (Bangladesh Rural Advancement Committee), Md. Shafiqul Haque Chowdhury of ASA (Association for Social Advancement) established there NGOs in the early 70s. Caritas (originally known as Christian Organization for Relief and Rehabilitation – CORR and was reorganized and reintroduced as Caritas in 1976), CCDB (The Christian Commission for Development in Bangladesh) were some of the social NGO that began working in Bangladesh at around the same time (Sheikh Kabir Uddin Haider, 2011). These and many other NGOs have been working on issues related to equality and justice, human rights, relief, health, education, addictions, violence against women, human trafficking, and so on, to

transform Bangladesh into a modern society. As we have discussed above, historically they used street plays using cultural teams to reach the large number of rural communities who had no access to newspapers and TVs. The low literacy rate also prevented them from exploiting the power of print media in this regard. However, this has changed.

Since the 80s, a large number of TV stations began to operate in Bangladesh and its number has reached around 45 channels (Wikipedia, 2022a). In addition, government has also allowed 68 radio stations including FM, MW, SW, and community radio stations (Wikipedia, 2022) to diversify the entertainment world and also to reach various social groups. According to Kantar Research^{*}, a marketing research company in Bangladesh, a total of BDT 1.1 billion (equivalent of \$ 13 million) was spent on public awareness-based TV media advertisements in 2019[†]. Of this, BDT 75 million (\$ 0.9 million) was spent on TV based public awareness messages which were paid by local and international NGOs. While it is only 7% of total value of TV based public media advertisement, the rest (93%) of public awareness messages were financed by Government, Private Organizations, and other Associations in Bangladesh. TV advertisements were the most popular among all the media to promote social awareness campaigns in 2019. Media Source Ltd. provides real time data service in both Print and TV media in Bangladesh. According to Media Source Ltd. nearly 455 million[‡] taka (equivalent of \$5.4 million) was spent on print media on public awareness campaign and NGOs paid BDT 2.8 million (\$ 32.5 Thousand) to promote social awareness messages in 2019[§] which is less than 1% of the total amount. UNICEF is among the highest spender in print media-based public awareness campaign in 2019. According to the news reports, Bangladesh is a market for two thousand crore taka for Digital Advertising (M. Z. Islam, 2019). According to 'We Are Social', a creative marketing agency, 41% (66.4 million) of the population uses internet in Bangladesh and 40 million of them can be reached by Facebook which is the most dominant social media. Similarly, statistics on web data shows UNICEF and BRAC have nearly 8.4 and 1.1 million visitors on their web pages in Bangladesh and these are the fastest growing web pages in terms of visitors in Bangladesh. It is now evident that there has been a change in promoting social messages and it has moved from cultural roadshows to electronic media.

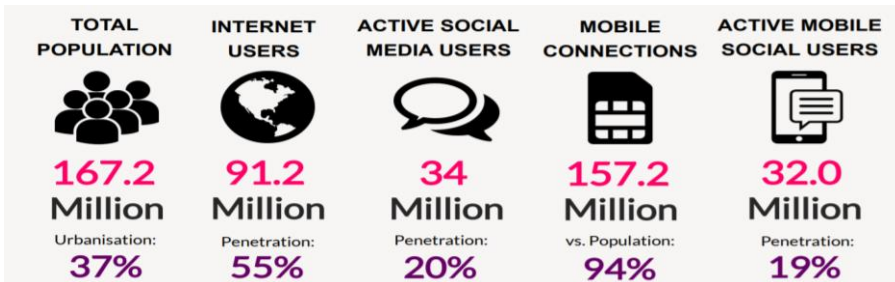
^{*} Classified information received from Kantar Research by the authors.

[†] Based on modified TV channels rate (classified information)

[‡] Classified information collected by the authors.

[§] Based on post-discount print media rate (classified information)

Therefore, this study explores the behavior of media users and their uptake of social messages channeled through electronic media. This study used a social media campaign to reach out to targeted various audiences and collected feedback on the use and attitude of using electronic media to influence social causes. Accordingly, the campaign was seen by 255 visitors of which 100 of them provided feedback for this study. According to Facebook Ads manager and NMS 2018, nearly 60% of electronic media users are within 18-34 age group. In addition, secondary data were collected from KANTAR Research (Bangladesh) and Media Source Ltd for this study. Primary data for this study was collected in 2019 using an electronic questionnaire-based survey on the individuals who participated in the campaign. Data from secondary sources show that out of 157.2 million mobile device users, only 34 million use social media. Following snapshot shows key digital statistical indicators of 2019 in Bangladesh;



Source: GSMA intelligence. Internet: internet world stats; ITU; World Bank; CIA world factbook; Eurostat; Local government bodies and regulatory authorities; mideastmedia.org; reports in reputable media. social media: platforms' self-serve advertising tools; press releases and investor earnings announcements; Arab social media report; Techrasa; Niki Aghaei; rose.ru. (Data of 2019)

4. Method of data collection

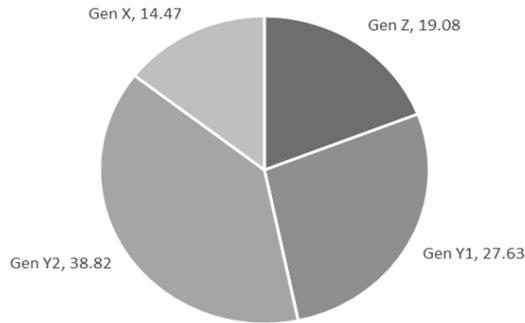
Based on the current media use pattern, the study was designed to tap electronic media users through a internet based media campaign using Facebook, Listserv and webpages, to collect information on their access, use and level awareness on social issues. The campaign ran for a month to collect information. As such, the responses are voluntary. This created a problem in terms of representativeness of the dataset in terms of media users. There is a problem of 'self-selection' in the data. Keeping this in view, the analysis utilized 'weights' to correct for over-sampling and under-sampling in terms of gender and generation.

4.1 The Sample

The study collected responses from 152 respondents using an electronic survey through web sources, email lists and Facebook groups. Figure 2 shows the distribution of various generations in the survey. Gen Z's are

born after 1997*, Generation Y1 and Y2 are technically millennials born between are born 1980 and 1997 and Gen Xs are born before 1980 (McCrindle & Wolfinger, 2009). It has been mentioned that while there is a broad consensus on defining various generations there is no one definition for them. So, in this study, we have used the age group 15-24 as Gen Z, 25-34 as Gen Y1, 35-44 as Gen Y2 and 45+ as Gen X.

Figure 2: Percent of various generations in the survey



Source: Primary Survey, 2019

The sample collected using internet-based e-questionnaire did not result in equal proportion of responses from each generation. As such, analytical weights are calculated for each generation using equal proportion in the population so that their responses are not biased with number of respondents in each generation. This will ensure that results are corrected for over-sampling and under-sampling in different generations in the primary sample.

Table 1: Distribution of generations by gender

Generations	Percent		Gender Weights		Generation Weights
	Male	Female	Male	Female	
Gen Z	41.38	58.62	1.2228	0.8427	1.3103
Gen Y1	69.05	30.95	0.7328	1.5961	0.9048
Gen Y2	79.66	20.34	0.6352	2.4287	0.6440
Gen X	68.18	31.82	0.7422	1.5525	1.7277
Total	67.76	32.24	0.7468	1.5323	1.0000

Note: Primary Survey 2019

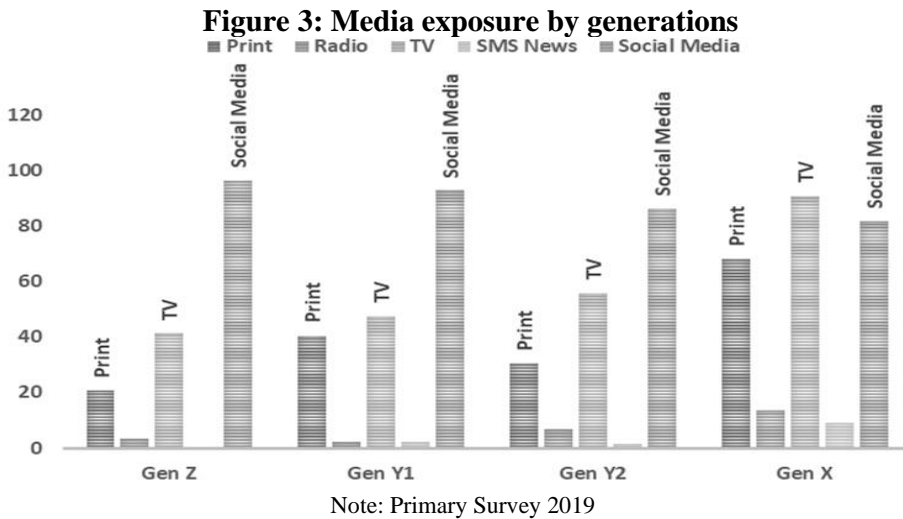
Table 1 shows the gender distribution in the sample by generations. Overall, 67.76 percent in the sample are male and 32.24 percent are female. This is different from the existing gender ratio between male and female in Bangladesh, which is 50.6 to 49.4 (World Bank Atlas, 2021). Using this ratio, we have also created analytical weights for male and female so that

* Alpha generation born after 2012 are not included in this survey.

the gender-based analysis of the data also remains unbiased. Based on the analytical weights, we have analyzed all the responses.

4.2 Media exposure of different generations

In terms of media exposure, Figure 3 reveals that while Gen X (the boomers) in Bangladesh are mostly using TV, social media and print media, the Gen Ys (the millennials) are using social media, TV and print media, and Gen Z are also using online social media, TV and print media to receive information. However, the percent of exposure varies between these generations.



4.3 TV Viewing habit

We have divided exposure to media by various categories in the following paragraphs. Table 2 shows that almost all the generations views news and drama or music on TVs. This means, reaching out to these generations, the awareness campaigners must look for placing their messages within these type of TV programs. These two types of programs will reach nearly 80 or more percent of all viewers. A further analysis by gender shows that there is no variation in their viewing behavior by gender. At the same time, our data shows that nearly 28% of the viewers are not reachable through TV and that Gen Z is among the least in watching news on TV.

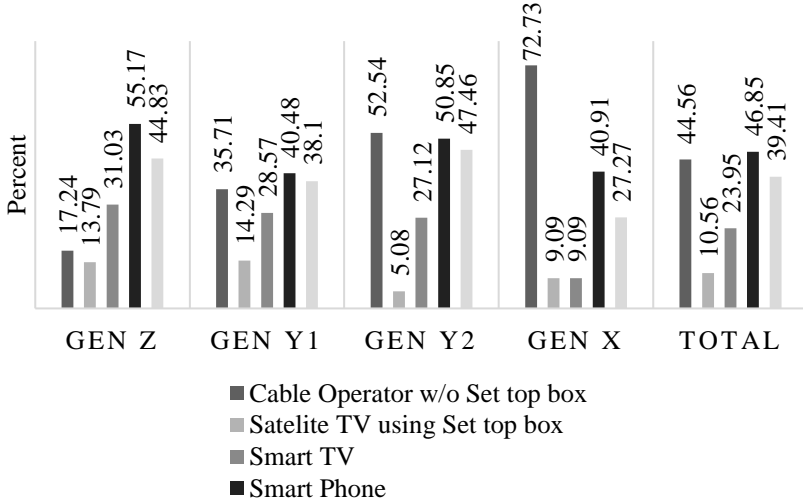
Table 2: Type of TV programs viewed by generations

Type of TV Program	Gen Z	Gen Y1	Gen Y2	Gen X
News	66.67	90	95	85
Family and Children	16.67	26.67	27.5	35
Drama, serial, music	88.89	83.33	87.5	85
Total	172.22	200	210	205

Source: Primary Survey, 2019

Figure 4 shows the sources of TV connections by viewer generations. It shows that while Gen X is still using cable operators, Gen Z has moved to smart phone and Gen Ys are using PCs and Smart Phone to view the programs.

Figure 4: Source of TV connection by Generations



Source: Primary Survey, 2019

This is important for campaigners because the device they use to view their programs has implications for designing any kind of social campaign. It shows that if a campaign is targeted towards the new generation, it must consider smart phone into their considerations while designing the campaign materials. The pattern is similar between male and female across the generations.

Table 3 shows that in terms of various programs, the most effective program to send messages to all generations are the children and family programs of TVs, followed by Talk Shows. In terms of gender of the viewers, male viewers watch children/family, talk show and sports or adventure related programs whereas female viewers watch children/family programs, talk shows, music, and drama/serials. For the Gen Z, the third most important TV program is adventure based or documentary programs.

Table 3: Type of TV program by Viewer Generations

Type of program	Gen Z	Gen Y1	Gen Y2	Gen X
Drama/serial	31.03	50	37.29	40.91
Music	41.38	33.33	33.9	45.45
Children/Family	72.41	90.48	81.36	63.64
Adventure/documentary	51.72	38.1	55.93	27.27
Sports	31.03	38.1	38.98	31.82

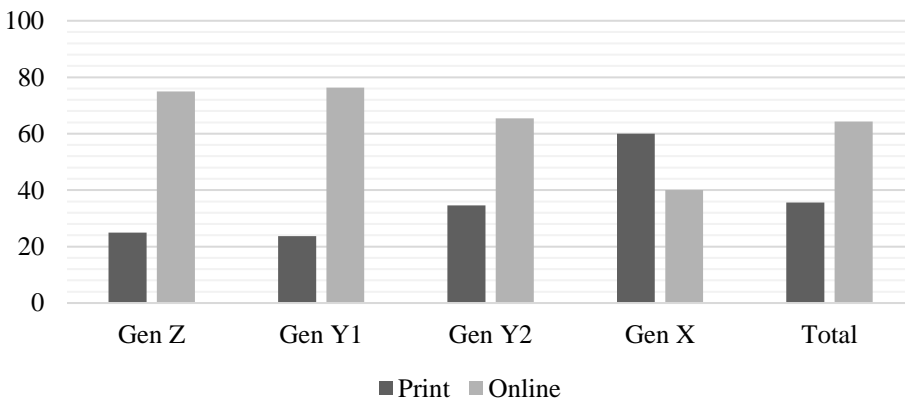
Educational	3.45	2.38	1.69	9.09
Talk Show	55.17	45.24	66.1	63.64

Source: Primary Survey, 2019

4.4 News reading habit

Figure 5 illustrates how different generations read information on print media. In Bangladesh, like other countries, print media is undergoing a transformation from hardcopy publication to also publishing their news online. The figure shows that most of the readers use online e-papers to read their information. Data also revealed that about 14.8% do not read any newspaper. While Gen X are still using printed papers but the rest are using online paper in most of the cases. This is important because online versions of the newspaper in Bangladesh still do not print the same ad on their online page. There is, however, no variation in terms of reading habit by gender across generations. Nearly 61% of all generations read newspapers regularly while 25% reads occasionally.

Figure 5: Reading habit of newspapers by Generation



Source: Primary Survey, 2019

4.5 Social Media browsing habit

Nearly 76 percent always use social media to collect information, while about 14% use it occasionally and 10% never use it. This shows the power of social media to all. However, the exposure is 86% for Gen Z while it is only 59% for Gen X. Table 4 shows that most of them use social media to receive information and so it is probably a source of misleading information that often get circulated among all generations of internet users. More than 50 percent of all users also share the information that they receive. There is also not much differences among their behavior across their gender.

Table 4: Purpose of using the social media

	Gen Z	Gen Y1	Gen Y2	Gen X	Total
To find information	86.21	87.8	87.93	76.19	84.6

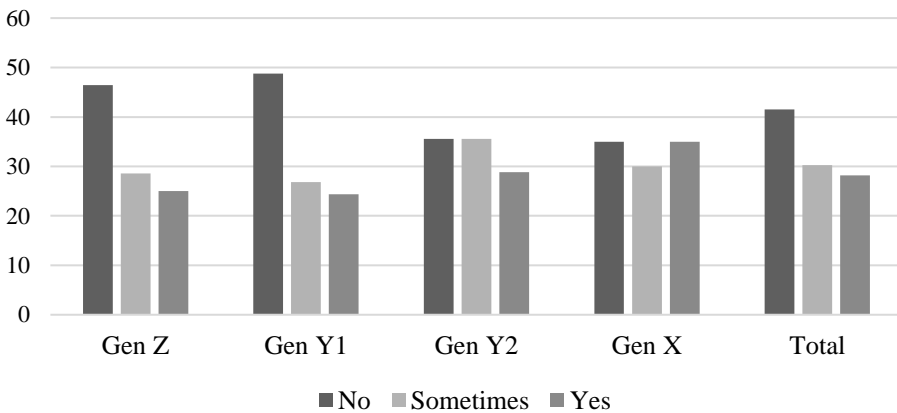
To share opinion	48.28	58.54	58.62	47.62	53.27
To meet new people	27.59	21.95	15.52	19.05	21.07
To find funny contents	62.07	56.1	43.1	23.81	46.48
To work	6.9	21.95	20.69	23.81	18.24
To do research	10.34	17.07	20.69	0	12.1

Source: Primary Survey, 2019

4.6 Following a ‘paid’ campaign

Figure 6 shows that majority of the new generations do not even watch paid ads or campaigns on TV. This is due to wide use of remote controls or touch screens which prompts them to browse other channels while there is an advertisement running on TV. This shows the difficulty of reaching them through paid TV ads – even though a huge amount of money is spent in advertising products and information on TV.

Figure 6: Habit of watching TV ads



Source: Primary Survey, 2019

Table 5 also shows the pattern of reading newspaper ads and it shows a very similar pattern for all generations. This further makes it difficult for governments and NGOs to influence opinions through advertisements. Nearly half of the newspaper readers never read ads.

Table 5: Percent of people read newspaper-based ads or promotional campaigns

	No	Sometimes	Yes
Gen Z	48.28	20.69	31.03
Gen Y1	45.24	19.05	35.71
Gen Y2	41.38	24.14	34.48
Gen X	47.62	9.52	42.86
Total	45.62	18.43	35.95

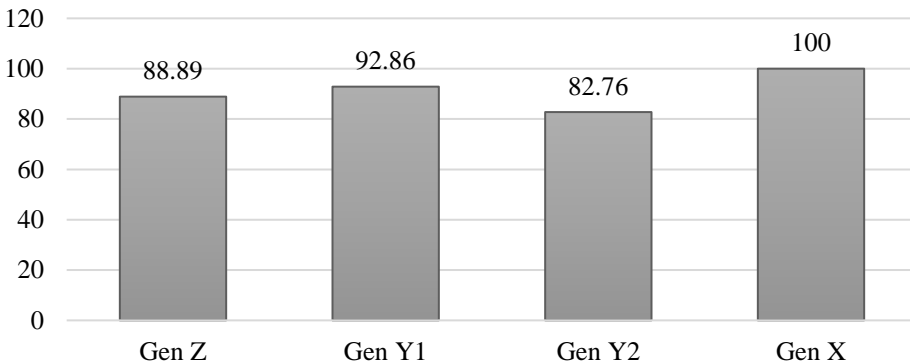
Source: Primary Survey, 2019

Furthermore, analysis of responses on reading billboards also shows a similar pattern. Only about 34 percent of respondents have read at least one information (like a campaign) on the media on raising public awareness in their life. This means nearly 66 percent never read or noted any such information even though it was on TVs or on Billboards or on Newspapers in Bangladesh. It shows that a large majority are not reachable via the traditional ads or campaigns. Interestingly, however, nearly 85% of all generations think that raising public awareness is an important task for the society.

Finally, nearly 30% of all respondents think that NGOs in Bangladesh are successful in raising awareness on many social issues while only 56% of them could remember a campaign that has influenced or touched their life or has changed their mindset.

Finally, Figure 7 shows the results of the two famous posters that were presented to the respondents and asked them to identify which one contains gender related violence in order to understand their level of public awareness of this issue. Unfortunately, it shows that only 89 per cent of Gen Z could understand the message in the poster and it is about 83 percent for the Gen Y2 (the millennials), where nearly 100 percent of Gen X could identify the poster that was made to make people aware of gender-based violence. This shows that campaign designers must also work hard to think through the lens of the new generations in order to promote their messages in the coming years.

Figure 7: Level of social awareness by generation



Source: Primary Survey, 2019

5. Concluding Remarks

Raising social awareness is an important social responsibility of NGOs but making the message heard to its target audience seems to be more difficult now than before and it probably shows why campaigns like promoting vaccination to prevent COVID-19 has failed in many countries in the world

as well as in Bangladesh. The research shows that the new generations i.e. Gen Z are even harder to reach if we use the usual strategies to reach them. Unlike others, more proportion of Gen Z use social media to collect information. This shows that to reach the new generations on social issues, campaigners must use social media rather than the traditional print and electronic media like radio and TV. At the same time, their social media use is different than others. New generation also use social media to share funny materials more than older generations and at the same time, they switch their attention when ads appear on the screen. The study used a campaign and asked respondents to identify the message from a picture. While 100% respondents in Gen X identified the message correctly it was not so for other generations.

Finally, this study used e-questionnaire to collect data and so the responses are self-reported and were not monitored like a face-to-face survey. While it is a good news because responses are probably not contaminated by the presence of an interviewer, it is also possible that some of the responses might be simple blind or random keystrokes and hence it would have been better if we had a larger sample and used a random sub-sample to analyze the responses. This was not possible in this case due to a small number of total responses. Results might be different if it was also possible to use Facebook or Google Ad features to randomly target Gen X to Gen Z users on the net. It was not done because there was no funding to cover the Ad expenses.

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