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A Strategy for Asymmetrical Measures to Reduce Bribery in Bangladesh

Strategi Tindakan Asimetris untuk Mengurangi Penyyuapan di Bangladesh

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ABSTRAK

Bangladesh adalah salah satu negara paling korup dengan skenario suap yang merajalela. Di sektor pelayanan publik negeri ini, pelayanan hampir dianggap tidak mungkin tercapai tanpa menyuap penyedia layanan. Dari sudut pandang para pakar dan akademisi ad-hoc, tindakan hukuman simetris merupakan mekanisme yang gagal untuk menghentikan maraknya suap. Studi ini awalnya merenungkan alasan di balik parahnya skenario penyuuapan di Bangladesh menggunakan dataset National Households Survey 2017 (NHS) dari Transparency International Bangladesh (TIB). Ini menganalisis yurisdiksi hukum suap terutama KUHP 1860. Dalam studi ini, mengikuti argumen Basu tentang sistem hukuman asimetris (pelecehan suap) untuk India, ukuran hukuman asimetris telah diusulkan melalui penjelasan teoritis permainan tentang bagaimana itu akan bekerja untuk Bangladesh daripada yang simetris saat ini. Analisis teori permainan ini menunjukkan bahwa hukuman asimetris lebih efisien untuk mengurangi penyuuapan yang merajalela di suatu negara daripada hukuman simetris. Studi ini menyarankan pemerintah memulai kebijakan hukuman asimetris pada suap dengan tindakan hukuman yang ketat dan pemantauan penerimaan suap yang, dengan pendekatan kualitatif dan studi kasus.

Kata kunci: Suap, korupsi, hukuman simetris, tindakan asimetris, suap pelecehan.

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ABSTRACT

Bangladesh is one of the most corrupt countries with a rampant bribery scenario. In the public service sector of this country, service is almost considered to be unattainable without bribing the service providers. From the viewpoint of specialists and ad-hoc academicians, symmetric punishment measure has been a failed mechanism to stop rampant bribery. This study initially pondered the reasoning behind the severity of the bribery scenario in

Bangladesh using the dataset of the National Households Survey's 2017 (NHS) of Transparency International Bangladesh (TIB). It analyzed the legal jurisdictions of bribery especially the penal code 1860. In this study, following Basu argument on the asymmetric punishment system (harassment bribe) for India, an asymmetric punishment measure has been proposed through a game theoretical explanation about how it will work for Bangladesh instead of the current symmetric one. This game-theoretical analysis shows that asymmetric punishment is more efficient for reducing rampant bribery in a country than symmetric punishment. The study suggests the government initiate an asymmetric punishment policy on bribery with a strict punitive measure and monitoring of bribe-taking which, with a qualitative approach and case study.

Keywords: Bribery, corruption, symmetric punishment, asymmetric measure, harassment bribe.

INTRODUCTION

Bribery is pervasive in all nation-states, especially in developing countries (CPI, 2014). It leads to an enormous wastage in revenue, social justice erosion, and human rights infringement (Verma & Sengupta, 2015). While an individual or group pays a bribe to illegally get access to a product or service (collusive bribes), and another class where an individual or a group has to pay a bribe to get a service (harassment bribes). Harassment bribes are when citizens have to pay corrupt officers for services that are legally entitled to citizens (Verma & Sengupta, 2015). Harassment of bribes has become the most widespread form of corruption in developing countries, particularly in India, and it increases inefficiency and delays in services (Verma & Sengupta, 2015).

Bangladesh is not an exception in this case. To National Households Survey (NHS)- 2017, 49.08% of service recipient households have experienced bribery or unlawful money transaction in different sectors in Bangladesh (TIB, 2018). The study TIB (2018) stated that 89.0% of the service recipient households paid as a bribe or made the illegitimate payment for services. However, Bangladesh has well-defined acts and laws against bribery, such as Penal code section 161-165(A), Prevention of Corruption Act (1947), Anti-corruption Act (1957), and Anti-corruption Rules (1957) etc. All existing legal

legislations of Bangladesh follow symmetric punishment systems in terms of bribery and corruption.

Basu (2011) has devised a new idea of asymmetric punishment for controlling bribery. He argues that if bribe-giving (not bribe-taking) is made legal, the bribe-giver (harassment bribe) will get full immunity from any punitive action by the state. However, in this paper, we examine Basu (2011) proposal for reducing bribery by analyzing the bribery and corruption scenario in Bangladesh. The paper includes a simpler analysis of what could be the game-theoretic response of the bribery counterparts - the ones who take it (government servants) and the ones who give it (households) while taking or giving bribes in Bangladesh. This analysis will help readers decide whether or not the author's argument about this administration policy (asymmetric measure along with a harassment bribe) of, for now, reducing bribery is recommendable for Bangladesh.

RESEARCH METHOD

In this study, following Basu (2011) argument on an asymmetric punishment system (bribery abuse) for India, an asymmetric penalty measure has been proposed through a game theoretical explanation of how it would work for Bangladesh rather than the current symmetric one. This study uses a qualitative approach and case study with Miles & Huberman (1994) interactive analysis techniques. To test Basu (2011) proposal to reduce bribery by analyzing bribery and corruption scenarios in Bangladesh. Whether the argument is about this administration policy (asymmetric actions along with harassment bribery), for now, bribe reduction is recommended for Bangladesh or not.

RESULT AND DISCUSSION

Result

Bribery has been practised since the initial stage of human civilization, notably in the state's economic, administrative, and political arena (Jancsics,

2019). Its purpose is to produce reciprocity of benefits through money and power politic (Anggoro et al., 2022). In contrast, an individual or group pays a bribe to illegally get access to a product or service (collusive bribes) and another class where an individual or a group has to pay a bribe to get a service (harassment bribes) (Verma & Sengupta, 2015). Basu (2011) also defines harassment bribes as 'people give to get something they are entitled to (e.g., a passport or ration card or for getting investment licenses)'. Like Basu (2011), Verma and Sengupta (2015) stated that harassment bribes are when citizens have to pay corrupt officers for services that are legally entitled to citizens.

When someone is complicit in taking or giving bribes or ensuring private interests by abusing an official position, they do not feel guilt or regret (Dixit, 2017). Bribery results in the inefficiencies of misallocation and delays, which considers the twin vices of a corrupt bureaucracy (Asea, 2018). Harassment of bribes has become the most widespread form of corruption in developing countries, particularly in India, and it increases inefficiency and delays in services (Verma and Sengupta, 2015; Basu, 2011). As a result, qualified applicants suffer delays in receiving licenses and other services, but inefficient people receive services ahead of them (Asea, 2018). Bribes for getting an investment license lessen the incentive to invest and adversely influence efficiency, investment, and growth (Muurlink & Macht, 2020). Bribery leads to a substantial revenue loss and has choked off large parts of economic transactions (Verma and Sengupta, 2015).

Many developing countries, especially Indonesia, have different decentralized ministries (after the enactment of the decentralization law in 2001), but the decentralization policy didn't reduce corruption in Indonesia (Muurlink & Macht, 2020). The discretionary power of bureaucrats allows for extracting bribes (Asea, 2018). So, reducing the monopoly or discretionary power of bureaucracy is one way to lessen the incidents of bureaucratic corruption in the country (Asea, 2018) But traditional monitoring and

punishment do not curb corruption significantly (Serra, 2012), and monitoring and punishment also lead to a higher average bribe (Dwenger et al., 2016).

To reduce bribery, some academicians attempted to break down some administration policies considering the political and economic scenario of the countries (Basyal et al., 2018). Almost all of them pondered the policymakers sticking to a punishment-based solution to this rampant bribery. The question remains 'does it help to increase cooperation and efficiency? Campos-Vazquez and Mejia (2016) stated that ¹¹ the option of punishment increases cooperation, but the sensitivity to punishment is greater in the high-monitoring. Moreover, raising the penalty on the bribe-giver makes bribing costly while reducing the penalty for the bribe-taker ⁴ but this scenario has not visible in any country (Muurlink & Macht, 2020). ⁴ Several countries like India, the USA, the UK, and France are enshrined symmetric punishment in bribery laws (Engel et al., 2016). Asymmetric liability facilitates a significant reduction in bribery incidents compared to symmetric liability under generic circumstances (Verma and Sengupta, 2015). Similarly, Abbink et al. (2014) also found that asymmetric laws against bribery (e.g., harassment bribes) reduce corruption rates. But, Engel, Goerg and Yu (2016) concluded their ²¹ experiment with an opposite finding that asymmetric penalties also increased corruption by giving the briber a credible way of transaction.

Basu (2011) ⁵ has come up with a new idea about the control of bribery. He argues that ¹⁸ if bribe-giving (not bribe-taking) is made legal, the bribe-giver (harassment bribe) will get full immunity from any punitive action by the state. After paying the bribe, bribe-givers will get incentives (be able to collect their money back) to blow the whistle, and bribe-takers face a hefty punishment and have to return the bribe after being caught. Basu argues that bribe-takers will hesitate to take bribes after knowing this, which helps "sharp decline in the incidence of harassment bribe". Verma and Sengupta (2015) found that Basu proposal of asymmetric penalty significantly reduces bribery incidents under

certain conditions. Ryvkin and Serra (2017) and Abbink et al (2014) supported Basu proposal of an asymmetric penalty scheme and found that the inability of the bribe-takers to react against the bribe-giver correlates with the reduction in bribery incidents (Ryvkin & Serra, 2017). In an endogenous environment, implementing Basu proposal produced mixed results; one, the policy could reduce welfare and another, it would reduce harassment and non-harassment bribes (Oak, 2015). In a study, Dreze (2012) criticized the proposal of Basu (2011) that legalizing bribe giving will decline incidents of bribery sharply and has said that this hypothesis is incorrect. He stated that bribe-giver has three options (don't pay a bribe; pay a bribe and blow the whistle, and pay a bribe but don't blow the whistle); when bribe-giving is made legal, bribe-givers will switch to the third option, which leads to increase incidences of bribery- not decrease. Although, Basu, Basu and Cordella (2016) once again suggested that asymmetric punishment will help to disappear if penalties are sufficiently high; otherwise, bribe sizes will rise.

Legal jurisdictions of Bribery in Bangladesh

Bribery has been well defined as a crime in the legislature and acts of Bangladesh. It is morally wrong in the sense that public servants or service providers take illegitimate payments from the households for what the households are legally entitled to get. And the punishment for this crime is morally right because it urges fairness and justness in society, returning justice to the recipients. Bribery punishment and its forms are mostly demonstrated in Penal code sections 161,162,163,164,165, and 165(A). Some other existing legal references bring in focus on Criminal Law Amendment Ordinance (Ord. XXXVIII of 1944), Prevention of Corruption Act (1947), Anti-corruption Act (1957), Anti-corruption Rules (1957), Criminal Law Amendment Act (Act. XL of 1958), Anti-corruption (Tribunal), Ordinance- (XVI of 1960), Criminal Law Amendment (Rules, 1977). In this section, the definition of bribery, its legal punishment, and its forms bring down this study as it relates to our research

10 question. According to the Penal Code 1860 (Act No. XLV of 1860) section 161, bribery is (bdlaws.minlaw.gov, 2020):

"Whoever, being or expecting to be a public servant, accepts or obtains, or agrees to accept, or attempts to obtain from any person, for himself or any other person any gratification whatever, other than legal remuneration, as a motive or reward for doing or forbearing to do any official act or for showing or forbearing to show, in the exercise of his official functions, favour or disfavour to any person, or for rendering or attempting to render any service or disservice to any person, with the government or legislature, or with any public servant, as such shall be punished with imprisonment of either description for a term which may extend to three years, or with fine, or with both."

Here, Public Servant is defined in section 21 of the penal code as an employee of any Corporation or other body or organization set up by the government and included under any law. And gratification, as mentioned in this section act, refers to anything that pleases the public servant to do or not to do anything in favour of a person or not favour a person. Gratification doesn't only count money and is not restricted to pecuniary gratifications. Legal remuneration means the official salaries or benefits that the government fixes for that specific public servant. Some Other kinds of bribery are also 23 mentioned in Section 165 of the penal code 1860 (bdlaws.minlaw.gov, 2020):

"Whoever, being a public servant, accepts or obtains, or agrees to accept or attempts to obtain, for himself, or any other person, any valuable thing without consideration, or for a consideration which he knows to be inadequate, from any person whom he knows to have been, or to be, or to be likely to be concerned in any proceeding or business transacted or about to be transacted by such public servant, or having any connection with the official functions of himself or of any public servant to whom he is subordinate, or from any person whom he knows to be interested in or related to the person so concerned, shall be punished with imprisonment of either description for a term which may extend to three years, or with fine, or with both."

Following the two sections, bribery is defined in the legal book as:

1. Accepting, obtaining, agreement to accept, attempts to take any gratification whatsoever to give 22 favour or disfavour to any person other

than the official acts.

2. Taking any valuable thing without consideration of its consequences from the vendors.

As the penal code firmly dictates that if any of the public servants are proven guilty of taking any gratification or valuable thing (as a bribe) to do a favour or disfavour, then they shall be punished for a year of imprisonment, which may extend to three years, or they will be fined or at most criminal charges, both of them. It may seem quite praise-worthy, but It's not since section 165(A) dictates the same punishment for abetting individuals. The penal code (165-A) says:

"Whoever abets any offence punishable under section 161 or section 165 shall, whether the offence abetted is or is not committed in consequence of the abetment, be punished with the punishment provided for the offence."

These abettors are the individuals who are connected to or engaged in bribery. If somebody wants to give a bribe to a public servant as a harassment bribe to blow the whistle, he will be punished with the same punishment under section 161. This clearly states that Bangladesh follows a symmetric punishment system regarding corruption and bribery.

Current Bribery Scenario in Bangladesh

As a form of corruption, bribery has gradually become widespread, especially in developing countries. Bangladesh is not an exception in this case. Merrily this nation is a severe example of rampant bribery. According to National Households Survey (NHS)- 2017, 49.08% of service recipient households have experienced bribery or unlawful transaction of money in different sectors in Bangladesh, which makes this corruption (i.e., bribery) the 'most visible form of corruption to be mal-practised (TIB, 2018). The data indicates that about 50% (half of the total service recipients) paid bribes or were forced to make illegitimate payments while taking the services from government or non-government service-providing sectors.

Table 1: National estimate of bribe or payment of unauthorized money by various sectors (2017)

Sector Name	Amount of Bribe (In Million Taka)	Percentage of households paid the bribe	The average amount of bribe (In Taka)
Land Services	25,129	37.9	11,458
Law Enforcement Agencies	21,669	60.7	6,972
Judicial Services	12,419	32.8	16,314
Electricity	9141	18.6	3,032
BRTA	7102	63.1	6,318
Gas	5281	11.9	33,805
Insurance	5099	4.9	14,865
Education (Govt. and MPO)	4552	34.1	714
Passport	4516	59.3	2,881
Local Government Institutions	3387	18.3	907
Health (Govt.)	1602	19.8	498
Tax and Customs	1238	9.4	5,213
Banking	1129	1.1	3,985
Agriculture	510	30.5	484
NGO	364	1.5	1,589
Others	3751	5.7	5,092
Total	106,889	49.08	5,930

Source: National Households Survey, 2017 (TIB, 2018)

In the table 1 ponders some warning findings about the bribery occurrence in Bangladesh. In 2017, households in Bangladesh paid a total amount of Tk. As a bribe or illegitimate payment in various service sectors, one hundred six thousand eight hundred eighty-nine million (total national estimate). The most rampant bribery sector, BRTA (Bangladesh Road Transport Authority), implies that 63.1% of the service recipient households paid bribes or were forced to make illegitimate payments while taking services. The other top bribery-corrupted sectors in percentage were The Law Enforcement Agencies (60.7%) and Passport (59.3%). This table also explains that an individual household has paid an average of Tk. 5,930 as a bribe to take services from different sectors in Bangladesh, while Gas was the most corrupted sector in terms of the average payment of bribery (on average Tk. 33,805).

But what rationale is working behind the reason for what is a household making an unauthorized payment? The study TIB (2018) stated that 89.0% of the service recipient households paid as a bribe or made the illegitimate payment because "service was inaccessible without bribes". The following graph shows the other reasons why households paid bribes in service sectors in Bangladesh.

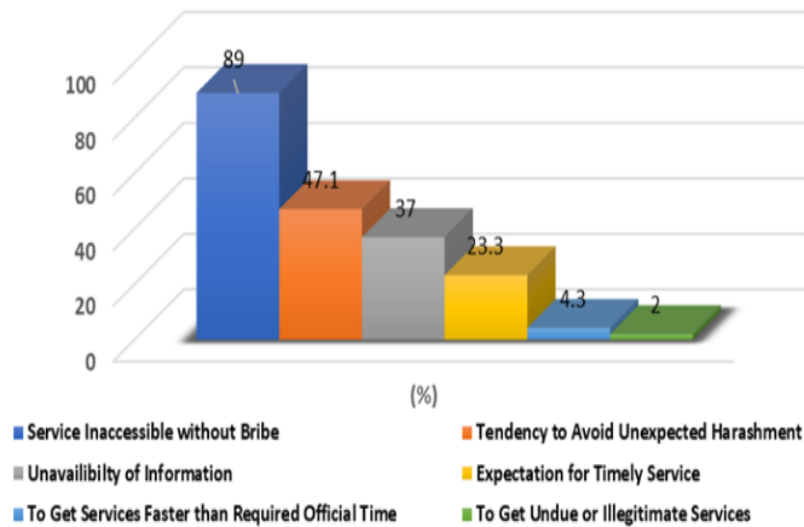


Figure 1. Reasons for which household paid bribe or unauthorized money in different sectorc (%)

Source: National Households Survey, 2017 (TIB 2018)

Figure 1 shows that 47.1% of the households paid bribes to avoid 'to be' harassment in taking the services they are entitled to; furthermore, 37% of the households paid bribes due to the unavailability of information about the official charges. Moreover, 23.3% of households paid bribes to the service providers for getting the service 'in time,' to which they are entitled.

Does the education level of the service recipient households play a role in bribery harassment? That study revealed some findings on this variable too (TIB, 2018).

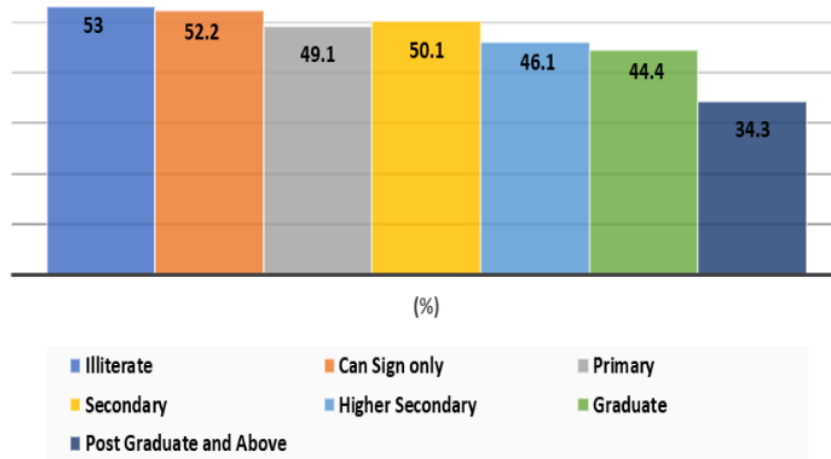


Figure 2. Percentage of household experienced bribery by education level of their heads
Source: National Households Survey, 2017 (TIB, 2018)

Figure 2 shows that the highest percentage of bribery was experienced by 'Illiterate' (53%); service recipient households with 'Can sign only' level education had experienced 52.2% bribery. It indicates that a household with lower literacy is harassed more than others for bribes while taking services. Another side, only 34.3% of households with the highest education level (Post Graduate and Above) have experienced bribery when taking services.

Figure 3 shows the percentage of households that experienced bribery by profession, notably regarding educational background. 63.1% of the Agriculture/Fishery professional households said they had to **bribe to get the service that they're entitled to** get. Moreover, 57.5% of the fishermen, 54.6% of the transport workers, and 54% of the handcrafts (e.g., blacksmiths, potters, and weavers) have experienced harassment or bribery in the time of taking services from different sectors in Bangladesh. But the scenario is quite less severe in high-income professions compared to the low-income professions (e.g., 36.9% of teachers and 43.3% of the professionals like Lawyers, Doctors, and Engineers have experienced bribery). Furthermore, business enterprises have paid bribes more than other professions of the households (e.g., 50.8% of

the medium and large enterprises and 49.9% of the small-medium enterprises).

So, bribery is simply considered a part of the system in this country's bureaucracy. All these graphs we have shown above relate to this statement because high documentation of bribery is present in this country.

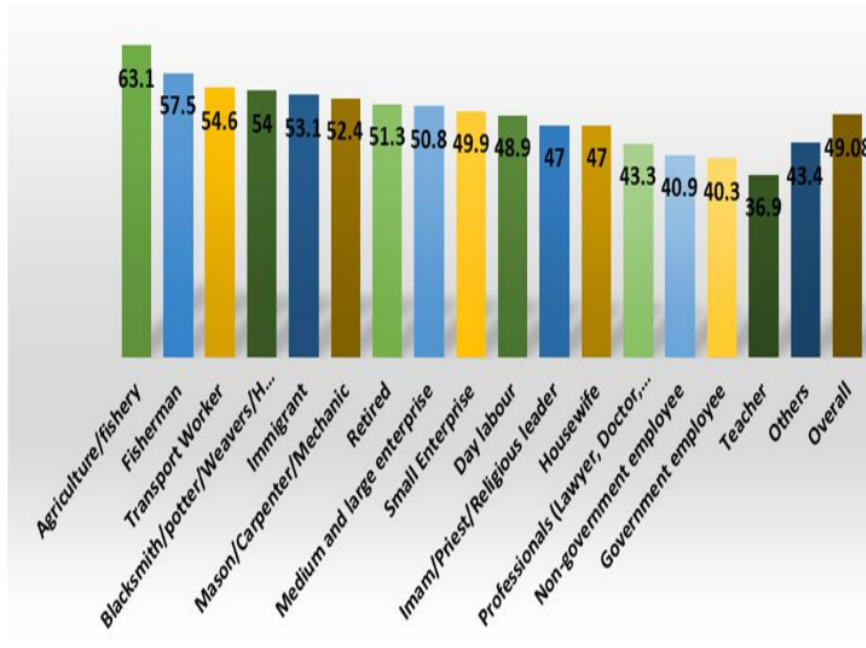


Figure 3. Percentage of households experienced bribery by professions of their head (2017)
Source: National Households Survey, 2017 (TIB 2018)

Analysis and Discussion

Game Theoretic Analysis of Asymmetric Punishment

The control of the rampant bribery rate has become a policy headache for the last two decades in Bangladesh. Bangladesh follows the symmetric punishment system but has become an inefficient method of fighting against bribery. Imposing an equal punishment over both parties (bribe-takers and bribe givers) in bribery action increases the rate of bribery. The public servant who takes the bribe from a service recipient gets a full indemnity or immunity while taking the bribe because they are consensually entitled to cooperate.

Basu (2011) showed why symmetric punishment measures don't work efficiently for reducing bribery in India, which is quite a relatable policy discourse for all developing countries.

To discuss this matter - symmetric measure- in a pragmatic way in the context of Bangladesh, we take an exemplification of the most corrupt sector of the country- BRTA (Bangladesh Road Transport Authorities) (TIB, 2018). For a facile policy-oriented game-theoretic analysis, we waive the parties engaged in bribery into two, bribe giver (X) and bribe-taker (Y). As the current legal barrier to bribery occurrences is symmetric, both parties are interested in maximizing their profit, i.e., want to be better off trading their respective service/deal. So there lies cooperation, which increases the probability of bribery (Mushkat & Mushkat, 2020). How do they cooperate? Suppose X (bribe giver) wants to get a driving license from BRTA and Y (bribe-taker) is the government official entitled to provide the service to him. Now, X has two options, bribing the official or refusing to bribe. On the contrary, Y can either take the bribe or refuse to take it. The following game-theoretic analysis provides a clear scenario of the situation aforementioned:

Table 2: Author's Own Calculation

Giver/Taker	Takes	Refuses
Gives	$\{(\alpha-\lambda\alpha), \lambda\alpha\}$	$\{\alpha, 0\}$
Refuses	$\{0, 0\}$	$\{\alpha, 0\}$

In the above game, α = What X (Bribe giver) is legally entitled to get from the service providers. λ = percentage of the bribe (regarding the legal entitlement amount).

Now, if X (bribe giver) wants to bribe the official and Y (bribe-taker) takes it, then the game outcome is $\{(\alpha-\lambda\alpha), \lambda\alpha\}$. If they both refuse to take and give, the outcome lies in $\{\alpha, 0\}$. But if the bribe giver wants to bribe and the bribe-taker refuses, then the game outcome is the same $\{\alpha, 0\}$. And, if the bribe-taker wants to get the bribe, but the bribe giver refuses to deal with it, then the game outcome stays at $\{0, 0\}$ which means no deal and the household won't get what they were entitled to get. In this game, the bribe taker is the dominant

player, and the Nash equilibrium of this game depends on their willingness to take the bribe. Due to having no extra punishment in our country's penal codes (symmetric punishment) for taking the bribe, the bribe-taker has a high probability of taking the bribe and cooperating with the bribe giver getting their entitled service. So, the Nash equilibrium will be $\{(\alpha-\lambda\alpha), \lambda\alpha\}$, bribe-taker will take the bribe from the bribe giver without any fear of getting caught. Because if they get caught, then the bribe giver gets caught, and both will face the same punishment. Basu (2011) thus stated that symmetric punishment measure doesn't work in reducing the bribery rate. Instead, Basu (2011) proposed an asymmetric punishment system, particularly for harassment bribes to reduce rampant bribery.

However, this sophisticated idea of asymmetric punishment is not new at the public administration level. The United States and the European Union use conditional immunity to deter cartels (Marvão & Spagnolo, 2014). But, Basu asymmetric punishment is rare in the case of bribery. Although, it has been practised for a long time in different territories. In China and Taiwan, bribe giving is a crime only if the player receives illegal benefits (Li, 2012). In Romania, the bribe giver is sometimes entitled to have their payments returned to them (Rose- Ackerman, 2010).

Our idea of motivating the asymmetric punishment system for reducing bribery in Bangladesh involves harassment bribes, where a percentage is demanded from the citizens. However, the citizens already meet the required conditions to receive the service (i.e., driving license, pension fund). From Bangladesh's perspective, this model requires two preconditions - first, whistleblowing is facile, effective, and cheap. Two, punishments enforce immediately and unbiasedly. If both conditions are fulfilled, anyone can willingly offer a bribe to the public servants; if they take it, the bribe givers can blow the whistle and get back their bribe money. And the asymmetric punishment penal code will immediately apply to the guilty public servants,

and the whistleblowers get full immunity. Moreover, there will be a distrust dilemma among the bribe-occurrence parties. Then, if the public servant realizes that if the bribe giver blows the whistle, the public servant will be restricting their stubbornness for taking a bribe while providing a public service.

Table 3: Author's Own Calculation

Giver/Taker	Takes	Refuses
Hides	$\{(\alpha - \lambda\alpha), \lambda\alpha\}$	$\{\alpha, 0\}$
Whistles	$\{\alpha, (-\lambda\alpha-\beta)\}$	$\{\alpha, 0\}$

In this game, unlike the symmetric game, a punishment outcome (β) is added with the bribe taker's activity, i.e., if the bribe giver blows the whistle, then the public servant will face fined along with punishment. If the bribe-taker wants to take the bribe, they will pay a cost to trust the bribe giver. Henceforth, suppose X (bribe-taker) takes the bribe, and the bribe giver blows the whistle. In that case, the outcome will be $\{\alpha, (-\lambda\alpha-\beta)\}$ which means X (bribe-taker) will have to return the bribed money and also will have to face the enforced immediate punishment for taking part in bribery. If the bribe-taker refuses to take a bribe because of the higher cost of bribe-taking, then the bribe doesn't take place, and the service recipient household gets the full amount they are entitled to. What if the bribe giver wants to remain silent after bribing a public servant? In this case, whistleblowing depends on the size of the bribed money. If the bribe size is large, then the probability of whistleblowing is too high (Karna Basu et al., 2016). So, in the asymmetric punishment where bribe giving is legal, the Nash outcome will be either $\{\alpha, (-\lambda\alpha-\beta)\}$ or $\{(\alpha-\lambda\alpha), \lambda\alpha\}$ depends entirely on the bribe giver's whistleblowing. So, the model of asymmetric punishment system will create a distrust dilemma among the public servants and thus, they will, in most cases, restrain themselves from taking bribes.

Arguments of Asymmetric Measure for Bangladesh

From a historical link, Bangladesh has exercised symmetric punishment laws against bribery incidents for the last two decades. Are

symmetric punishment laws working effectively to reduce bribery in Bangladesh? Basu (2011) stated that (symmetric punishment) is inefficient in reducing bribery incidents in developing countries (e.g., India). Bangladesh, being a developing country, has experienced a 49.08% (of service recipient households) of bribery or unlawful transaction of money cases in different sectors, according to the data of NHS-2017. The average payment of unauthorized money (bribe) of service recipient households increased in 2017 to Tk 5,930, which was Tk 4,538 in 2015 (TIB 2018). Still, bribery incidents and the average amount of bribed money are increasing yearly in Bangladesh, mostly because a symmetric punishment measure has been followed and initiated for a long time. According to the penal code (165-A and 161) of Bangladesh, the public servant (bribe-taker) and the abettor (households or the bribe-giver) are to enforce the same punishment (a year of imprisonment, which may extend to three years or will be fined, both of them if they are proven guilty). Symmetric game-theoretic analysis (Table 2) shows that in a symmetric punishment measure, the probability of taking a bribe is high because of coordinated action between the parties and the Nash equilibrium outcome lies in $\{(\alpha-\lambda\alpha), \lambda\alpha\}$ - while the public servant (bribe-taker) will take the bribe from the households (bribe-giver) without any fear of getting caught. In this game, the bribe-taker is the dominant player indeed, and the bribe-giver willingly gives the bribe to get service either to get it hurriedly or to mitigate the uncertainty and harassment in it. They (bribe-giver) also bypass the whistle blow because they have the same punishment for both.

However, having no extra punishment for bribe-taker, the symmetric punishment of Bangladesh does not efficiently work to reduce bribery rates in the country. On the contrary, the bribery incidents (e.g., total national estimates, rates of bribery, and the average bribe payment of households) are increasing (TIB, 2018). So, Will asymmetric punishment measure be a better option for Bangladesh than symmetric punishment? As asymmetric game-

theoretic analysis (figure 5) shows that bribe giver or whistleblower is the dominant player in the game (by getting a full immunity with incentives of getting back his bribed money) and Nash equilibria $\{\alpha, (-\lambda\alpha-\beta)\}$ or $\{(\alpha-\lambda\alpha), \lambda\alpha\}$ depends entirely on bribe giver's whistleblowing action. While bribe giver prefers whistleblowing ensures a high outcome $\{\alpha, (-\lambda\alpha-\beta)\}$ which means bribe giver will get back the bribed money with getting full immunity (Table 3). As a result, there will produce a distrust dilemma between bribe-takers and bribe-givers; bribe-takers have a higher cost of taking bribes. So, they (bribe-taker) will restrain themselves from taking bribes as a rational player in the asymmetric game; then, the bribery happening gets reduced (Table 3). As Basu, Basu and Cordella (2016) showed that asymmetric punishment (expected penalties) controls or contributes to reducing bribery rates in the country. Moreover, several studies found that asymmetric punishment successfully reduces bribery incidents (Abbink et al., 2014; Ryvkin & Serra, 2017; Verma & Sengupta, 2015).

The asymmetric game-theoretic analysis and several studies show that asymmetric punishment is more efficient for reducing rampant bribery in a country than symmetric punishment. So, the bribery incidents will reduce, or least of all, will be controlled if Bangladesh legalizes and allows the idea of asymmetric punishment (i.e., bribe-givers get full immunity with a return of the bribed money, and bribe-taker get punishment) against bribery.

Why will Bangladesh as a state be better off initializing this asymmetric punishment measure, especially conferring the whistleblowing entirely on the goodwill of the bribe givers (or households)? The officials who are entitled to check and monitor the corruption or bribery cases are the ones who take bribes to alienate someone from the bribery case; Some officials of the Anti-Corruption Commission, the state organization for checking corruption issues, were charged with taking bribes and falsifying the bribery allegations (Dhaka Tribune, 2019; RFI, 2012). So, the government can't afford to take punitive

action against the bribery cases as long as the officials engage in this. This surge leaves one handy option for the government to initiate - passing the monitoring or whistleblowing to the bribe givers.

There are two major reasons why this passing might bring a forthcoming effect on reducing bribery in Bangladesh (Rahman, 2018). The first one is that in the symmetric measure, the officials have no intentions in most cases to mitigate the bribery happening because of their possible unearned income decreasing (Karna Basu et al., 2016). They might earn more in being a part of bribery than taking action against the bribery allegations. On the other side, the bribe givers fully intend to reclaim their bribed money if they get full immunity through a strict asymmetric measure. So, detection from a state viewpoint might be, with fewer incentives, a false model of reducing bribery. Instead, resting this detection task entirely on the bribe givers should mitigate this multi-dimensional problem. On the other hand, it might be cheaper for individuals to reveal that bribery has occurred since they know exactly who was involved and how much was exchanged (Karna Basu et al., 2016).

Secondly, In a growing economy like Bangladesh, where bribe size is not that big but bribery happening is rampant, and this rate is almost one of the highest in the world (almost 50 per cent of households complained about being harassed for bribery by public servants; National Households Survey, (TIB, 2018), bribery allegations detection process might cause a bigger problem than bribery happening- a big collapse of state investment due to the higher cost of detection procedure. Producing an allegation before the court, whichever court might demand some proof and evidence of bribery are happening. With a very low technology infrastructure and poor management in Bangladesh, the detection solution must bring forth higher spending. If the officials get bribes from the bribe-takers, all these investments bring nothing. Even if that doesn't happen, the absolute cost of maintaining a state detection

system must be costlier than bribe givers whistleblowing because, in the case of bribe givers, there's merely any cost or investment of the state. All the shreds of evidence and proof of bribery must be produced before the court in charging and criminalizing the bribery allegations, which bribe givers will intentionally do because of their benefits.

CONCLUSION

Bribery has become widespread, especially in developing countries like Bangladesh. In the study, we have built a simple game-theoretical model to examine the effectiveness of symmetric and asymmetric liability to bribery reduction for current rampant practices of bribery in Bangladesh. Our game-theoretical model, however, mostly relied upon harassment bribes. Our game-theoretical model of asymmetric punishment measure evaluates the effectiveness of an asymmetric liability that provides legal immunity to bribe givers to encourage whistleblowing. Whistleblowing by the citizen is a powerful tool against the official who refuses to provide services that the citizen is entitled to. When asymmetric liability legally allows whistleblowing, it will create distrust among the bribery-acting parties. When the distrust dilemma creates between the bribe giver and the bribe-taker, the study shows that the probability of bribery happening will be reduced. Whereas our game-theoretic model of symmetric liability shows that the probability of taking a bribe is high because of coordinated action between the parties, the bribe-giver gives the bribe to get service to avoid harassment. However, the asymmetric game-theoretic analysis shows that asymmetric punishment is more efficient for reducing rampant bribery in a country than symmetric punishment.

Our game-theoretical model of asymmetric punishment measure for Bangladesh depicts the result of a distrust dilemma among the players, lessening the probability of bribe-taking. In the asymmetric punishment measure, the bribe-taker (public servant) will face punishment at least larger

than the bribe givers. While asymmetric liability legalizes bribe giving with an offer of full indemnity and immunity for bribe givers, there will have a higher probability of whistleblowing by bribe givers. In such cases, our game-theoretical model produces Nash equilibrium- where bribe givers will get a return for bribed money with immunity, and bribe-takers will penalize after being caught. However, the study shows that whistleblowing and bribery detection entirely depend on the bribe-takers expected punishment. In the case of Bangladesh, the symmetric punishment measure doesn't give any incentives to the bribe givers for whistleblowing. So, an asymmetric punishment policy will reduce the occurrences of bribery, and bribe givers will get incentives for whistleblowing with indemnity and immunity. Finally, the asymmetric punishment, the first proposal of its kind for Bangladesh, might increase bribery detection and lessen the cases of bribery. India initiated the asymmetric measure in 2012-13 and benefited from it; similarly, Bangladesh can introduce this policy.

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