

Determinants of Food Safety Regulation in Bangladesh: An Empirical Analysis



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ABSTRACT: A well-functioning food safety regulatory arrangement is important for ensuring the standards of foodstuffs, better food business, and the protection of public health in a given country. This article deals with the perceived determinants of the food safety regulation in Bangladesh. Based on literature review, we propose an analytical framework and identify key determinants that might influence effective food safety regulation in a developing country like Bangladesh. We then conduct a perception survey on 200 different kinds of stakeholders involved with the regulation of foodstuffs standards. We utilize descriptive mode of statistical analysis in our study. In our findings, actual autonomy of the main regulatory agency, and actual inter-organizational coordination are perceived as important determinates of effective food safety regulation. Proper enforcement of regulation, and accountability and transparency are perceived another factors of quality food safety regulation. It is also perceived that penalties are not sufficient enough for the food safety offences. Technical personnel and the state of the art laboratory facilities are other determinants of the regulation of food safety. Again, decentralized food safety regulatory network is perceived as very important determinant of the control of the food safety hazards at all level as well as an effective regulatory arrangement. The policy makers need to take into account the perceived determinates for desired food safety regulatory outcome in Bangladesh.

KEYWORDS: food safety, public health, regulatory enforcement, regulatory agency, regulatory arrangements, food business, Bangladesh, regulation

1. INTRODUCTION

Food is the very basic requirement for the survival of human being. Access to adequate quantities of standards and nutritious foodstuffs is key to sustaining life and protecting public health in a given country. However, “an estimated 600 million – almost 1 in 10 people in the world – fall ill after eating contaminated food and 420 000 die every year, resulting in the loss of 33 million healthy life years” (World Health Organization, 2020). A human being can survive without appropriate shelter over their head and without good quality of cloth over their body but cannot survive without wholesome nutrition (Singh, 2014). In this context, food safety regulation is an important policy issue for control of the food safety hazards and the food business for well-being of the citizens of a country. Therefore, it is the duty of government of a respective country to ensure safe and nutritious food for the citizens and secure better public health through enacting effective food safety regulatory arrangements for ensuring standards of the foodstuffs.

The constitutional, legal and policy framework in Bangladesh processed enough ground for the regulation of the food safety in order to maintaining foodstuffs standards (Government of Bangladesh 2008, 2013, Rahman, 2017). The Bangladesh Food Safety Authority (BFSA) is responsible for overall regulation of the food safety and the control of food business in Bangladesh. It was formed in February 2015, under the Food Safety Act, 2013. The main responsibility of the BFSA is “to regulate and monitor the activities related to manufacture, import, processing, storage, distribution and sale of food so as to ensure access to safe food through exercise of appropriate scientific methods, and to coordinate the activities of all the organizations concerned with food safety management” (Government of Bangladesh, 2013).

Besides, there is a provision of National Food Safety Management Advisory Council (NFSMAC) to provide policy support to the BFSA. This council is responsible to “provide necessary advice and direction to the Authority [BFSA] and all concerned with the food safety management as to formulate policy and plan on food safety system” (Government of Bangladesh 2013). Moreover, there is a provision of the Central Food Safety Management Coordination Committee (CFSMCC) consists of different authority and organization directly and indirectly involved with eh food safety management including BSTI [Bangladesh Standard and Testing Institute]. This committee shall take appropriate initiative to “ensure necessary institutional support from relevant authorities or

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organizations for successful performance of the duties and functions assigned to the Authority [BFSA]. Therefore, the food safety regulation in Bangladesh is complex regulatory process where many actors are involved and they have different level of authority.

The BFSA as regulatory body having certain level of autonomy is functioning to regulate the food safety hazards in Bangladesh. However, the success of their regulatory activities necessarily depends upon many elements of the regulatory governance in practice. To be specific, the actual regulatory decision-making competence of the BFSA, and the actual inter-organizational coordination are two elements of the regulatory governance are important. It is also important to understand to what extent the BFSA is accountable and transparent in discharging its functions. The regulatory enforcement capacity of BFSA and the level of penalties are also important indicators for proper regulatory activities. The availability of technical personal, laboratories and the dissemination of BFSA's activities across different districts and local government jurisdictions are other aspects of the food safety regulatory governance in Bangladesh. In this perspective, it is important to understated the stakeholder perceptions on the elements of regulatory arrangements with respect to the BFSA's food safety regulatory functions in Bangladesh.

2. OBJECTIVE, ANALYTICAL FRAMEWORK AND METHODOLOGY

The general objective of this research is to explore the perceived determinants of effective food safety regulation in Bangladesh with special reference to Bangladesh food safety regulatory arrangements. In this research, we basically understand regulation as “the public administrative policing of a private activity with respect to a rule prescribed in the public interest” (Mitnick,1980). This study considers the theory of economic regulation to understand the benefits and burdens of business regulation (Stigler, 1971). Besides, according to Koop and Lodge (2015), “prototype regulation” is characterized by interventions that are intentional and direct—involving binding standard-setting, monitoring, and sanctioning—and exercised by public-sector actors on the economic activities of private-sector actors”. Therefore, in our study, the term regulation refers to the public administrative decisions which is mainly taken by a regulatory agency or authority and concerned with binding standard-setting, monitoring, and sanctioning for making private sectors economic activity more competent for the protection of public interest. Moreover, we understand regulatory arrangements as “the complex web of actors whose interventions and interactions sustain the regulatory process in a given policy field” (Mathieu et al. 2016). The understanding regulatory arrangement is vital for understating the overall activity of regulatory stakeholders of a given policy field.

Before discussion about the determinants of the food safety, we need to understand the meaning of food safety or safe food. In our study, we understand safe food as “a food that is pure and hygienic for public health according to its intended use and utility” (Government of Bangladesh, 2013). In other word the safe food is food item which is not adulterated or contaminated with respect to its specified standards. Now we may discuss the potential determinates of regulatory governance as a whole that might describe the food safety regulation in Bangladesh.

First, one of the elements of contemporary economic regulatory regime is the autonomy of the main regulatory agency. Autonomy refers to the level of competence or discretion of an organization to take its own decision (Verhoest et. al. 2004). Autonomy is important for desired regulatory outcome as the creation of independent regulatory agency (IRA) is considered as an institutional response to long term policy commitment and well-functioning regulatory systems in a given policy field (Majone, 1999). Along with formal decision-making power or autonomy, the de-facto independence or actual autonomy of the regulatory agency is also very important determinant to explain the quality of regulatory arrangements (Maggetti, 2007). The autonomy or independence of food safety regulatory agency is also noticed in the context of a developing county foodstuffs standards (Khalid, 2015). As a statutory regulatory body the BFSA having certain level of autonomy is functioning to regulate foodstuffs standards and to protect the public health (Government of Bangladesh, 2013). However, it is important to explore to what extent the BFSA enjoys its actual autonomy to takes its own regulatory decisions. Therefore, we may consider the both formal autonomy and actual autonomy as important determinants of the food safety regulation in Bangladesh.

Second, coordination between regulatory agency and other stakeholders is also very important for the function of regulatory framework. Coordination refer to the share of idea, exchange and competence between two or more actors for attaining shared goals. The higher degree of functional coordination between organizations is required due to higher degree of specialization (Verhoest and Bouckaert 2005). Inter-agency coordination could foster the outcome of the regulation (Estache et al. 2004). In Bangladesh food safety regulatory arrangements, coordination between main regulatory authority and other co-regulations and actors considered as principle of regulatory activities. Especially the coordination between the BFSA and the BSTI is noticed very important (Amin, 2019). At the very beginning of the Food Safety Act, 2013 it is clearly method that “it is necessary to make provisions for the establishment of an efficient and effective authority and for regulating, through coordination, the activities relating to food production, import, processing, stock, supply, marketing and sales, so as to ensure the rights toward access to safe food through appropriate application of scientific process, upon repealing and reenacting the existing law connected thereto” (Government of Bangladesh, 2013). Therefore, actual inter-organizational coordination may consider as important determinant of food safety regulation in Bangladesh

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Third, the regulatory enforcement and inspection are very critical success factors of a given regulatory arrangement. It is not possible to attain any outcome of the appropriate regulatory decisions without its proper enforcement. In broader meaning, regulatory enforcement refers to the “all activities of state structures (or structures delegated by the state) aimed at promoting compliance and reaching regulations’ outcomes”, and in its narrowest meaning ‘enforcement actions’ refers to “the warning, notices for future improvement, administrative fines, and prosecutions” (OECD, 2014). The responsive enforcement includes “detecting undesirable or non-compliant behaviour; developing tools and strategies for responding to that behaviour; enforcing those tools and strategies; assessing their success or failure; and modifying them accordingly” (Baldwin and Black, 2008).

The Bangladesh food safety law provides enough ground and competence of the regulatory authority for the effective regulatory inspection and enforcement of the foodstuffs standards. There is a provision of the appointment of food safety inspector. The duties of the food inspectors include “to examine the terms and conditions of any license for a food establishment; to collect a sample of any food or food ingredient and send it to a Food Analyst for analysis or test; to seize adulterated food etc. (Government of Bangladesh, 2013). However, the enforcement weaknesses are referred as most important problems of the food safety regulation in Bangladesh (Ali, 2013; Amin, 2019) Therefore, effectively enforcement of regulatory decisions and proper inspection may consider as an essential determinant of food safety regulation in Bangladesh.

Forth, accountability and transparency are two good governance principle are equally important for a good enough regulatory arrangement (Vass, 2006; Dudley and Wegrich, 2015). Accountability of the statutory functions of a regulatory agency can be ensured through “the extent of ex post monitoring. E.g., legislative oversight, judicial review, citizen’s complaints procedure” (Majone, 1999). Besides, transparency in regulatory task refers to the free flow of information and height level of integrity in discharging the regulatory decision and enforcement process. Information disclosure is endorsed as a norm of all functions of public organization in Bangladesh (Government of Bangladesh, 2009). Under the food safety act, the BFSA have to submit annual report to the government and it is said that “the Authority shall, by 31st January of every year, submit to the Government an annual report on the activities carried out by it during the previous year and the Government may, at any time, require the Authority to submit a report or statement on any of its activities” (Government of Bangladesh, 2013). Therefore, accountability and transparency in taking regulatory decisions and its enforcement may consider as an indispensable determinant of food safety regulation in Bangladesh.

Fifth, food safety offences are threat to the public health in a state. Appropriate penalties should be ensured for the violation of food safety requirements and the adulteration of the food by any food business establishment. There are two type penalties for the visitation of food safety legislation in Bangladesh. The first one is the administrative fine. After completion of the administrative inquiry on the violation of the food safety regulation and the standards of the foodstuffs in the food business, the administrative fine is imposed by the authority. According to the law, “if the authority, after considering the inquiry report submitted under this section, gives any direction to any person related there to, such person shall be bound to comply with such directions, and if he fails to comply with such direction, the authority may, in the manner prescribed by rules, impose upon him an administrative fine not exceeding Taka 3 (three) lakh” (Government of Bangladesh, 2013).

Again, there is provision of food court for trial of the food safety offences. For the violation of the law, such as “to use or include any chemical or its ingredients or substance, insecticides or pesticides or food colour or flavouring matter, or any other intoxicated additives or processing aid in any article of food which may cause injury of toxicity to human health or store, market or sell any article of food or food ingredient possessing such matter” the penalty is “imprisonment for a period not exceeding five years but not less than four years, or a fine not exceeding Taka ten lac but not less than Taka five lac, or with both” for offences committed first time. The Imposable penalty for repetition of the aforesaid offences is “imprisonment for five years or a fine of Taka twenty lac, or with both” (Government o Bangladesh, 2013). It is also noticed that the penalties are not sufficient and even not functional “as penalties are practiced as the way of the execution of the statutes without considering persuasive measures” (Ali, 2013). Therefore, the level of penalties of offences and their proper execution may consider as an important determinant of food safety regulation and the quality of foodstuffs in Bangladesh.

Six, technical knowledge, such and knowledge and skill for the analysis of the quality of food items, and persons having food regulatory expertise are important for the quality food regulatory system. In addition to technical hands, we need the adequate laboratory facilities for testing and analysis of the quality the foodstuffs. In developing countries like Bangladesh, it is difficult to provide technical personnel as per requirements and the state of the art food testing laboratory facilities (Sobhani, 2018). BSTI as an apex body for the testing all kinds of the foodstuffs in Bangladesh despite having the mandate of the BFSA for testing and analyzing food items (Government of Bangladesh, 2013, 2018). BSTI certification is mandatory for the marking of all kinds of food products in Bangladesh. Recently the BFSA has purchased a mobile food testing laboratory for its regulatory functions and ensuring the required standards of the food products. BFSA has also appointed good number of scientific officer and research officer to discharge its statutory functions effectively and efficiently. Therefore, technical personnel and laboratory facilities may consider an important determinant of food safety regulation and the quality of food items in Bangladesh.

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Seven, decentralized regulatory network could enhance the credibility of the functions of a food safety regime. Hence, the food safety regulatory activities should be disseminated across different region, districts within a country for its effectiveness. For the BFSA, it is difficult to manage the overall food safety regulatory functions from the one center located in the capital city Dhaka in Bangladesh. One good initiative is that the BFSA has appointed food safety officer at different district level in Bangladesh. However, the appointment of the food safety officers is not sufficient enough. The capacity of the food safety officers and their office should be improved immediately. Professional training should be ensured for the effective functioning of the food safety activities at local level in Bangladesh. It is noticed that the regulatory network does not cover the rural areas at all (Sobhani, 2018). The involvement of local community and civil society members in the regulatory activities could enhance the capacity of food safety network through awareness raising (Rahman, 2017). The engagement of municipalities and the local government institutions could help the execution the food safety regulatory activities. Hence, a network of regulatory authorities, local communities, local government institution and the food business establishment will make the succeed of the food safety regulation. Therefore, decentralized food safety regulatory network may consider a key determinant of food safety regulation and the food standards in Bangladesh.

Based on the above reviews of literature and theoretical arguments we propose an analytical framework that might describe the determinates (independent variables), such as autonomy of the main regulatory agency; inter-organizational coordination; enforcement of regulation effectively; accountability and transparency; penalties for food safety offences; technical personnel and laboratory facilities; and decentralized food safety regulatory network of the food safety regulation (dependent variable) in Bangladesh (Figure-1).

Now we would like to discuss about the methodological aspects of the study. The case of Bangladesh food safety regulatory arrangements has been selected purposively. For empirical research, case study could help to make analytical generalization (Yin, 1994). Moreover, case studies and valuable for theory building at all stages of research (Eckstein, 1975). The reliability of validity issues of qualitative research design could potentially address in the case study research design (Golafshani, 2003). For the study, data have been collected from two main sources: primary sources and secondary sources. Using a structured questionnaire survey, primary data have been collected from the 200 stakeholders, namely BFSA officials, food consumers, the food businesses persons, and the members of the civil society organizations during the period from October 2018 to January 2019. Within different categories of stakeholders, we have selected the respondents purposively (Sarantakos, 2012; Neuman, 2006). We have also collected secondary data from sources like legal and regulatory documents and regulatory decisions, books, journals publications, newspaper article, previous study report, annual report, unpublished research papers etc. Using the MS Excel software, we present data through table and figures and charts, and for the analysis of the research result we relies on descriptive mode of statistical analysis.

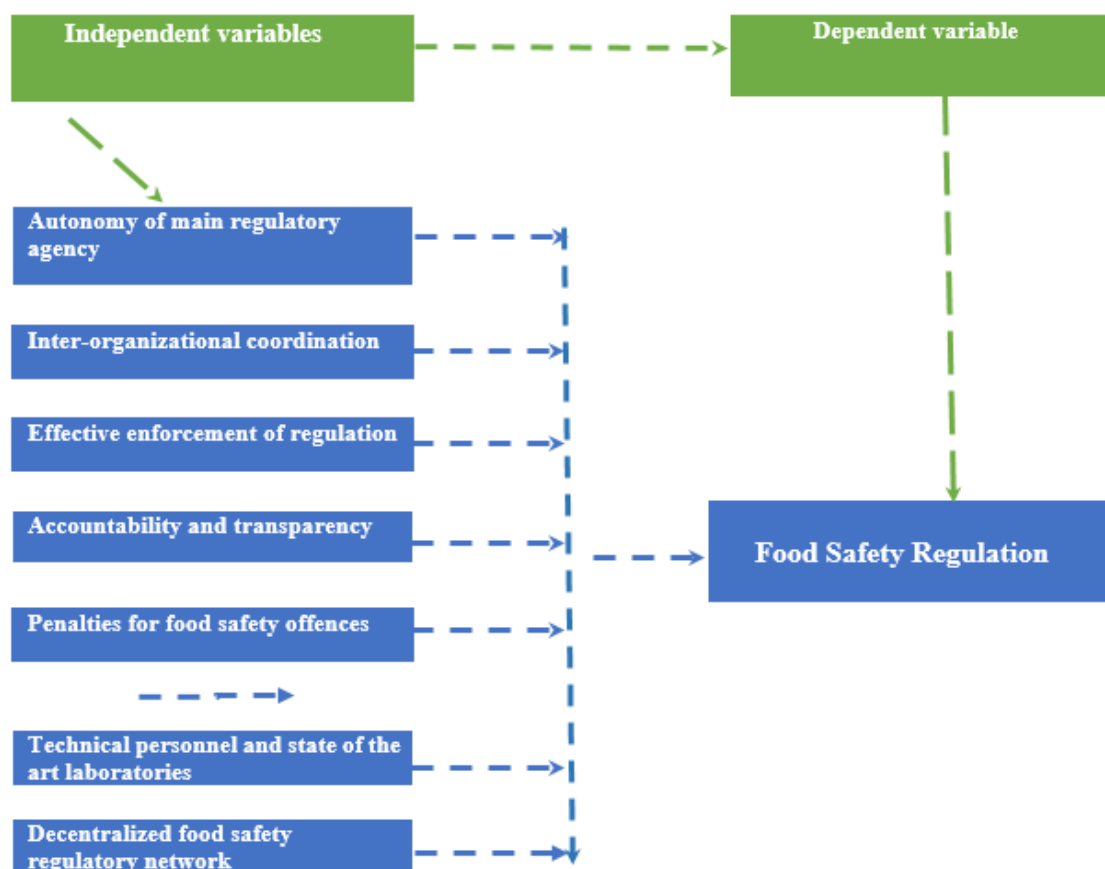


Figure-1: Describing the determinates of food safety regulation in Bangladesh: an analytical framework.

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3. RESEARCH FINDINGS AND ANALYSIS

3.1 Socio-Economic Background of the Respondents

At the outset of the research findings and analysis we present the social-economic profile, such as age, education, gender, occupation, and yearly income of the respondents. In our study, it is found that, 41% of the respondents belong to the age of 36-45 years, 24% belong to the age group of 46 to 55 years, 15% belong to the age group of 55 and more years, 13% belong to the age group of 26 to 35 years, and only 7% belong to the age of 16-25 years.

Our survey data shows that majority of the respondents are male (73%) and another proportions of the respondents are female (27%). It also found that the large number of respondents (34%) have HSC or equivalent level of education. 26% respondents have SSC or equivalent and 20% have BA or equivalent level of educational qualification, and only 4% of respondents belong to the primary level educational qualification.

The maximum number of the respondents are businessmen (46%) and around 17% people are public servants. Many people are doing private job and the number is about 9%. Nearly, 7% women are housewife, also 5% people are in teaching and 11% people are working as day-labor. Others professional background includes student (3%), driver (1.5%), and jewelry (1%). Regarding the income of the respondents, 32% are living with a yearly income of 2 to 3 lacks Taka, 24% are living with a yearly income of 1 to 2 lacks Taka, 11% are living with a yearly income of 3 to 4 lacks Taka, and only 4% of people are living with the highest level of yearly income which is above 4 lacks.

3.2 Perceived Determinants of Food Safety Regulation in Bangladesh

This section analyses the perceived determinants of food safety regulation in Bangladesh. Based on the review of literature we identified some factors that directly or indirectly influence the desired regulatory outcome, in this case the food safety standards in Bangladesh. As per opinion of the respondents now we present and make an intensive analysis on perceived determinates of the quality of food safety regulation in Bangladesh in order to understand the effective functions of the food safety regulatory arrangements:

Autonomy of the main regulatory agency

Autonomy of the main regulatory authority is considered as significant element for a well-functioning regulatory agency. Figure -2 presents the respondents perceptions on the importance of autonomy of the main regulatory agency-BFSA for effective regulation of food standard. The data presented on the graph demonstrates that most of the respondents (63.5%), such as strongly agree 10%, moderately agree 10.5%, slightly agree 43% were agreed with the statement that the autonomy of the sector-specific regulatory agency is important. However, small number of the respondents (27%), such as strongly disagree 6.5%, moderately disagree 10.5%, slightly disagree 10% did not consider the autonomy of main regulatory agency as important factor. Some respondents (9.5%) neither agreed nor disagreed with this statement.

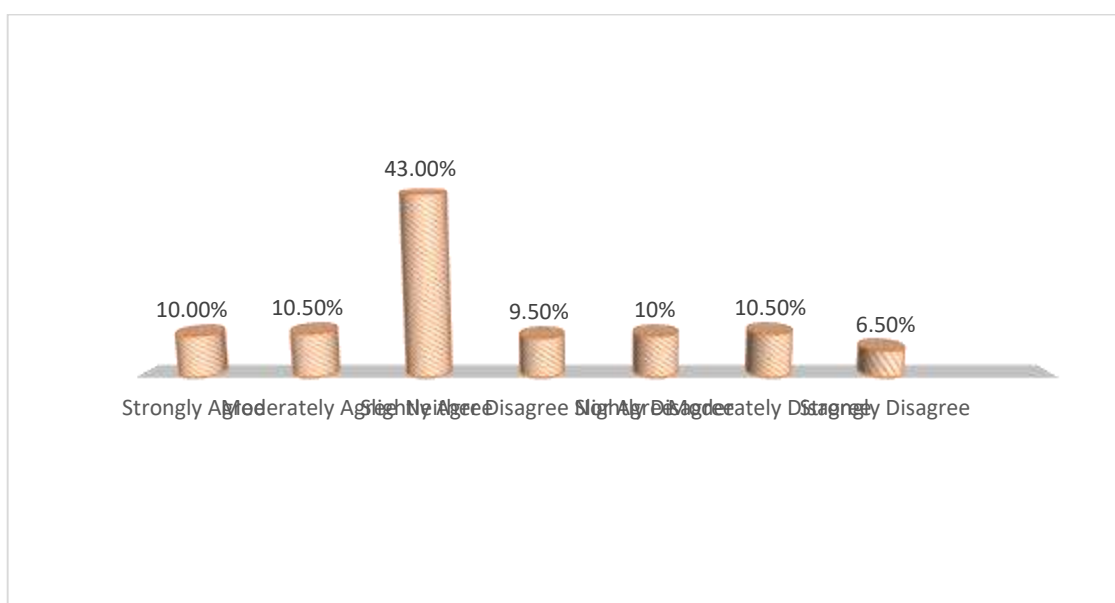


Figure-2: Perception on the importance of autonomy of the main regulatory agency.

However, it is very important to know to what extent the BFSA are functioning autonomously in practice. Figure-3 shows respondents' perceptions on the actual autonomy of the BFSA in discharging its function. This graph shows that the highest number of the respondents (80%), such as strongly disagree 17.5%, moderately disagree 60.5%, slightly disagree 2% believe that the

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regulatory agency has no autonomy in terms of regulatory decision making and enforcement of these decisions in practice. On the other hand, small number of the respondents (18.5 %) did not comply with the statement.

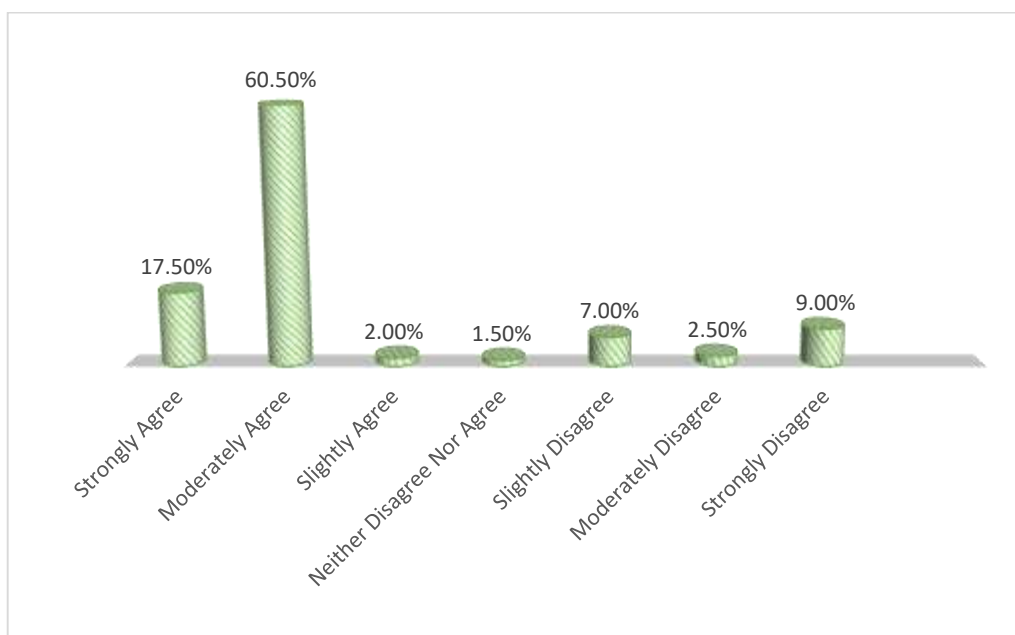


Figure-3: Perception on the autonomy of the BFSA in practice.

Inter-organizational coordination

Coordination between public regulatory authorities and other private actors is important for the successful regulatory regime. Figure-4 shows the respondents opinion on the importance of inter-organizational coordination in Bangladesh food safety regulation. The following graph represents that the great portion of the respondents (78%), such as strongly agree 57%, moderately agree 14%, slightly agree 7% support that coordination among the food safety regulatory authorities is essential for the sound food safety regulatory environment. However, other respondents (22%) such as, believe that coordination among organizations involved is not responsible for effective food safety regulatory framework.

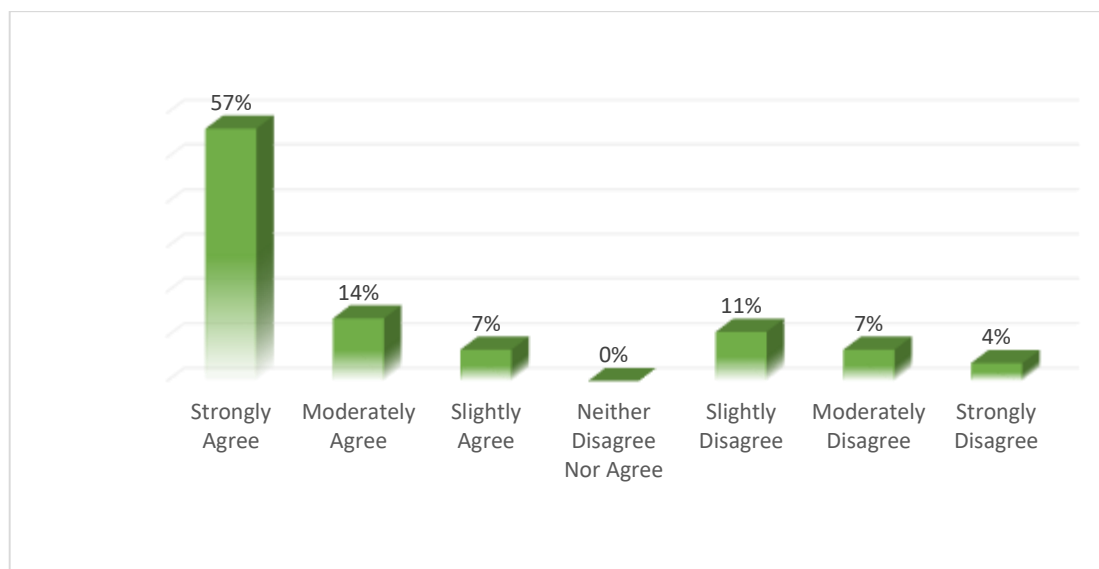


Figure-4: Perception on the importance of coordination among regulatory authority and other actors

In this study we also capture respondents' perception regarding the coordination among the BFSA and the other public authorities and the private actors in practice. In our survey a significant number of the respondents (65%) such as strongly agree 21%, moderately agree 33%, slightly agree 11% perceived that there is coordination among food safety regulatory actors in Bangladesh (Figure-5). However, a notable section of the respondents (29%), such as strongly disagree 6%, moderately disagree 13%, slightly disagree 10% perceived that there is a lack of coordination among the actors involved in food safety regulation. Therefore, it can be said that the Bangladesh food safety regulatory framework is moderately coordinated.

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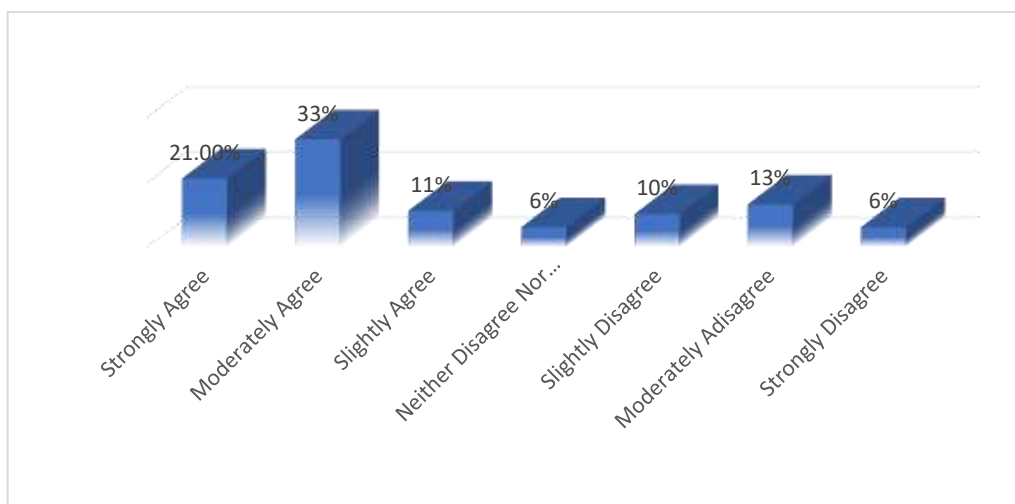


Figure-5: Perception on the coordination among BFSFA and other actors in practice.

Enforcement of regualtion effectively

The desired outcome of the regulation of foodstuffs depends on the effective enforcement of the regulatory decisions. Effective enforcement and inspection check the non-compliance with the regulations. The following chart shows the level of enforcement in food safety regulation with special reference to BFSFA in practice (Figure-6). It expresses that the large number of respondents (68%) such as 21% strongly agree, 33% moderately agree and 14% slightly agreed that the administrative enforcement mechanisms of the regulatory decisions of the BFSRA are not well efficient. However, some respondents (27%), such as strongly disagree 6%, moderately disagree 9%, slightly disagree 14% disagreed with the statement. They said that the administrative enforcement mechanism enough to effective food safety regulation in Bangladesh. The remaining 5% respondents neither disagreed nor agreed with this statement that the enforcement system is not effective enough.

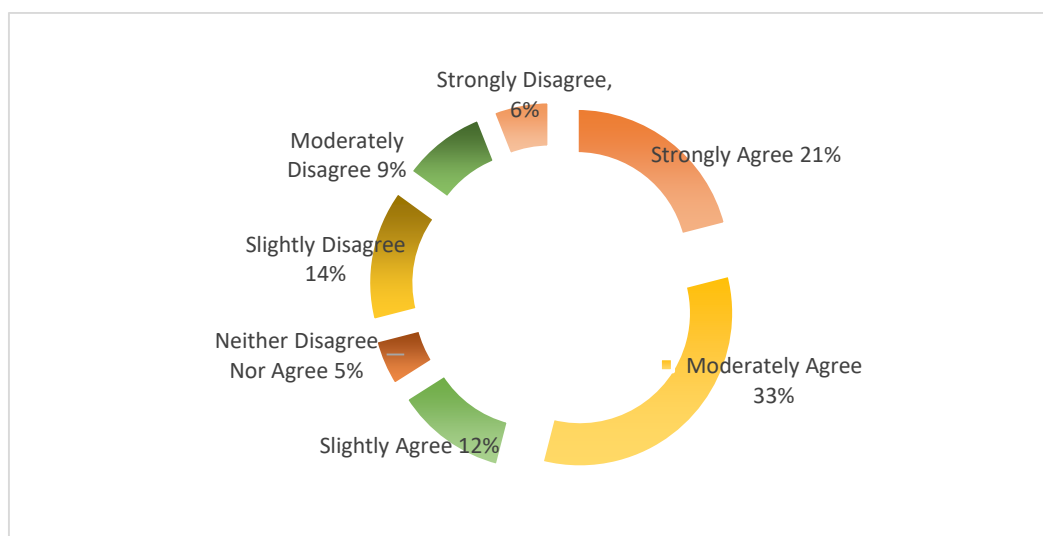


Figure-6: Perception on ineffective enforcement of the regulatory decisions by the BFSFA

The enforcement activity of the BFSFA depends on the activity of the food safety inspector. However, for taking any prosecution against the adulation of the food staffs, the BFSFA have to depend on the executive magistrate through mobile court. Therefore, the active role of executive magistrate who is working under ministry of establishment (MOE) is very important for the food safety regulatory enforcement and adjudication related activities. The Figure-7 shows the importance of the active role executive magistrate to take action against the food adulteration in Bangladesh. It shows that most of respondents (56%), such as 18% strongly agree, 23% moderately agree and 12% slightly agreed that as per requirement of the BFSFA the proactive role of executive magistrates is important to take legal action against the food adulteration. However, 39% respondents, such as 4% strongly disagree, 20% moderately disagree and 15% slightly disagreed with the statement. The 8% respondents neither disagreed nor agreed about the active role of executive magistrate.

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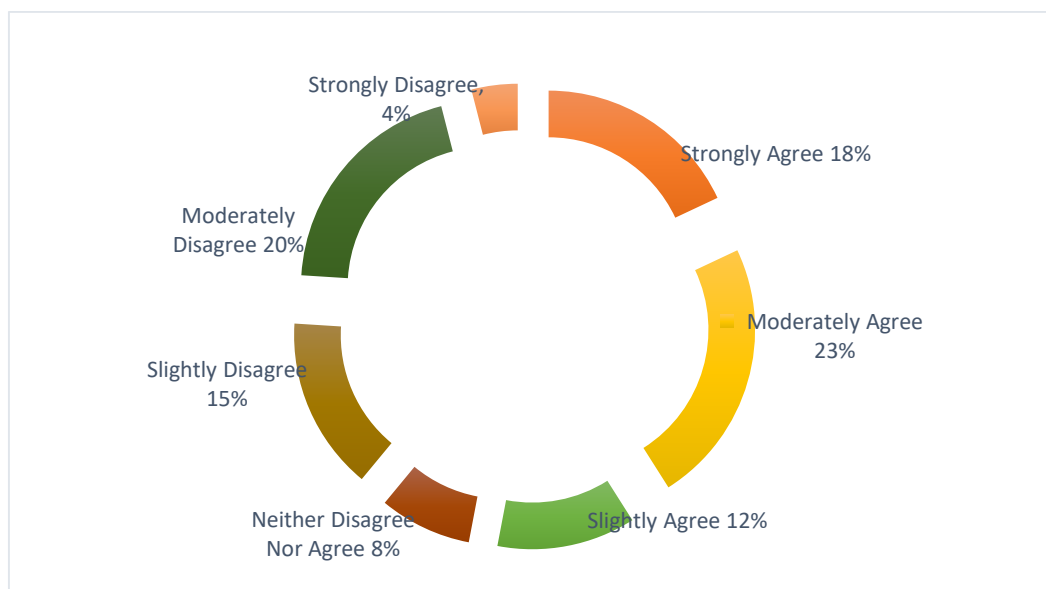


Figure-7: Perception on proactive role of the executive magistrate against the food adulteration.

Accountability and transparency

Transparency and accountability are two major aspects of the regulatory governance. Figure-8 shows that the perception on the accountability of the food safety regulation in Bangladesh. It reveals that general majority of the respondents (51%), such as 8% strongly agree, 15% moderately agree and 28% slightly agreed that the accountability of the food safety regulatory regime in Bangladesh. However, a notable section of the respondents (47%), such as 14% strongly disagree, 17% moderately disagree and 16% slightly disagreed with the statement. Only 2% responded neither disagreed nor agreed about the accountability.

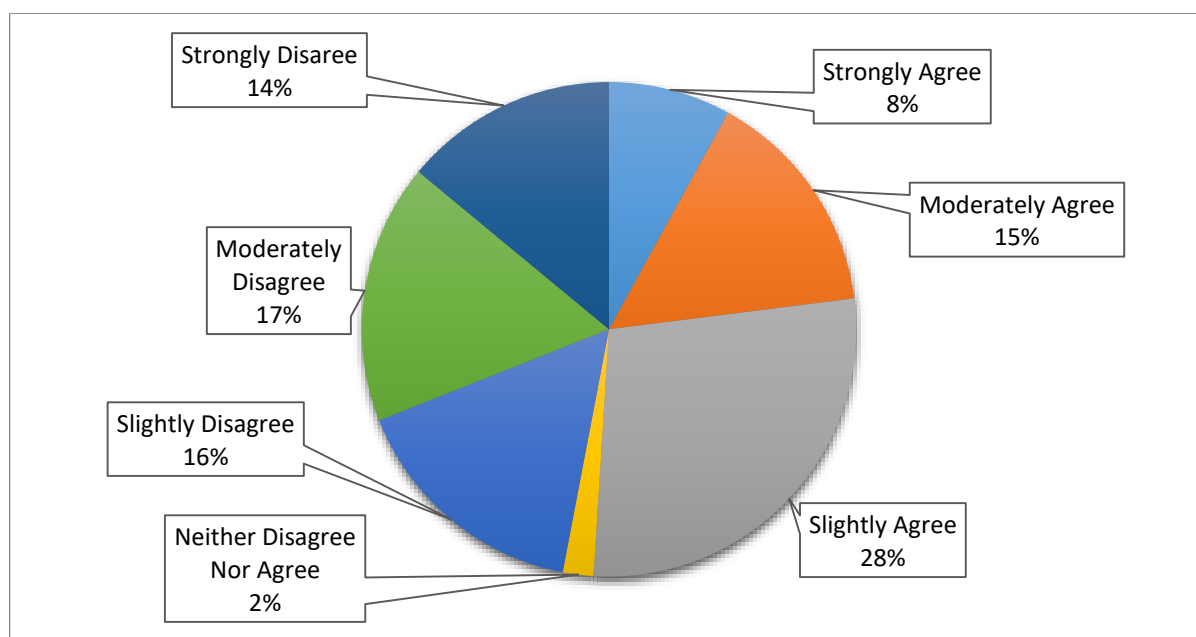


Figure- 8: Perception on the accountability of the food safety regulation.

Another important element of the regulatory institution is the transparency. It is expected that BFSA should be transparent in their decision making and involve citizens in a meaningful way in all aspects of food safety regulation. The perception on the transparency of the food safety regulation in Bangladesh can be seen in Figure-9. It shows that a notable section of the respondents (49%), such as 13% strongly agree, 22% moderately agree and 14% slightly agreed that the transparency of the food safety regulatory framework in Bangladesh. However, majority of the respondents (51%), such as 5% strongly disagree, 12% moderately disagree and 31% slightly disagreed with the statement. Only 3% responded neither disagreed nor agreed about the accountability. Therefore, level of transparency is an important concern for the BFSA with respect to foodstuffs regulation in Bangladesh.

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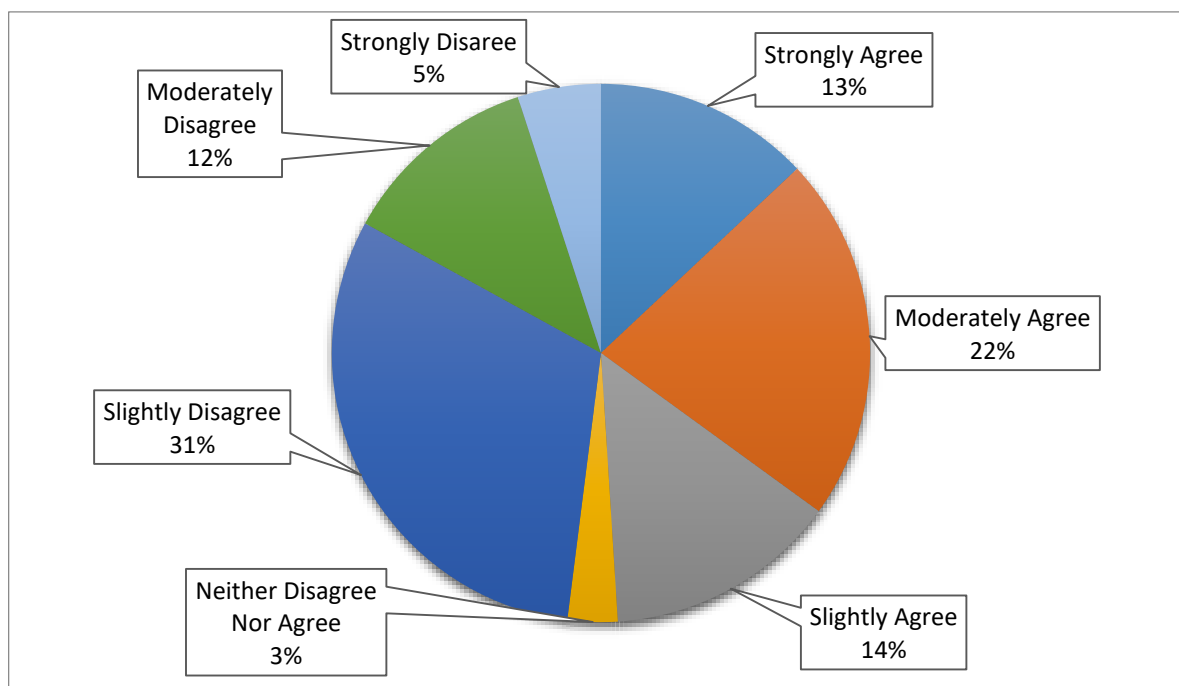


Figure- 9: Perception on the transparency of the food safety regulation.

Penalties for food safety offences

Appropriate level of penalties is one of the most important factors for effective food safety regulation in a given country. The existing legal framework for food safety in Bangladesh clearly mentioned the penalties for the valuation of the food safety law and regulations. Figure-10 shows the perception of respondents on the level of penalties for food safety offences in Bangladesh. It tells that majority of the respondents (66%), such as 41% strongly disagree, 13% moderately disagree and 12% slightly disagreed with the level of penalties for the food safety offences in Bangladesh. On the other hand, a section of the respondents (32%), such as 5% strongly agree, 9% moderately agree, and 18% slightly agreed with the existing level of penalties for food safety offences in Bangladesh.

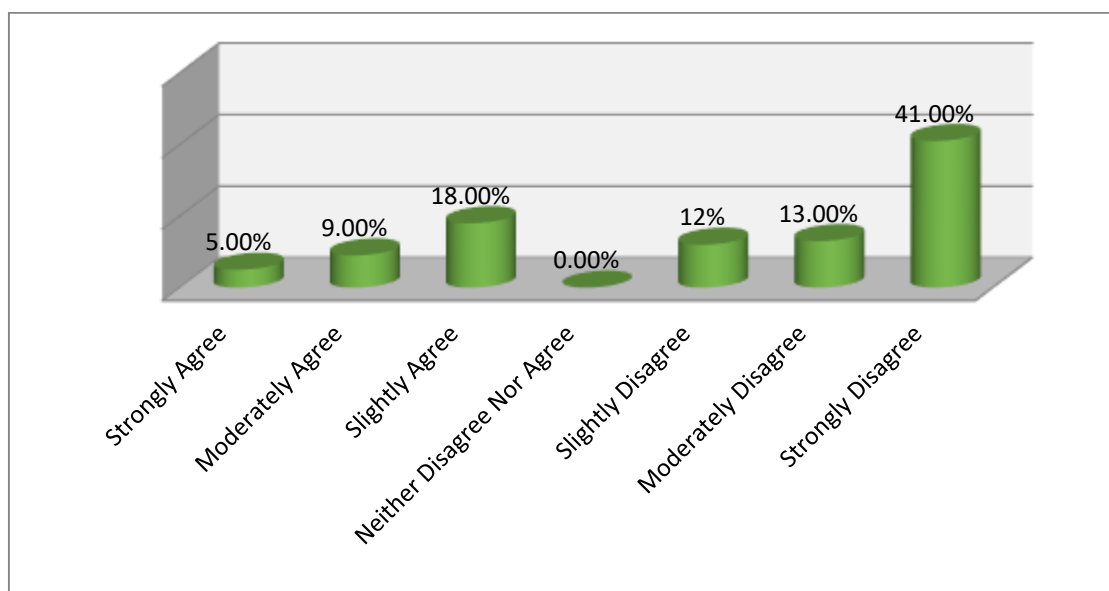


Figure- 10: Perception on the level of penalties for food safety offences

The opinion of the respondents with respect to the he increases of the penalties of the food safety offences immediately can be seen in Figure-11. It shows that the majority of the respondents (72%), such as 48% strongly agree, 16% moderately agree, and 8% slightly agreed to immediate increase of the food safety penalties significantly. However, some respondents (26%), such as 5% strongly disagree, 9% moderately disagree, and 12% slightly disagreed to immediate increase of the food safety penalties significantly. Only 2% responded neither disagreed nor agreed about the increase of the penalties immediately. Therefore, increase of pantries immediately for food safety offences is perceived as important factors for foodstuffs standards.

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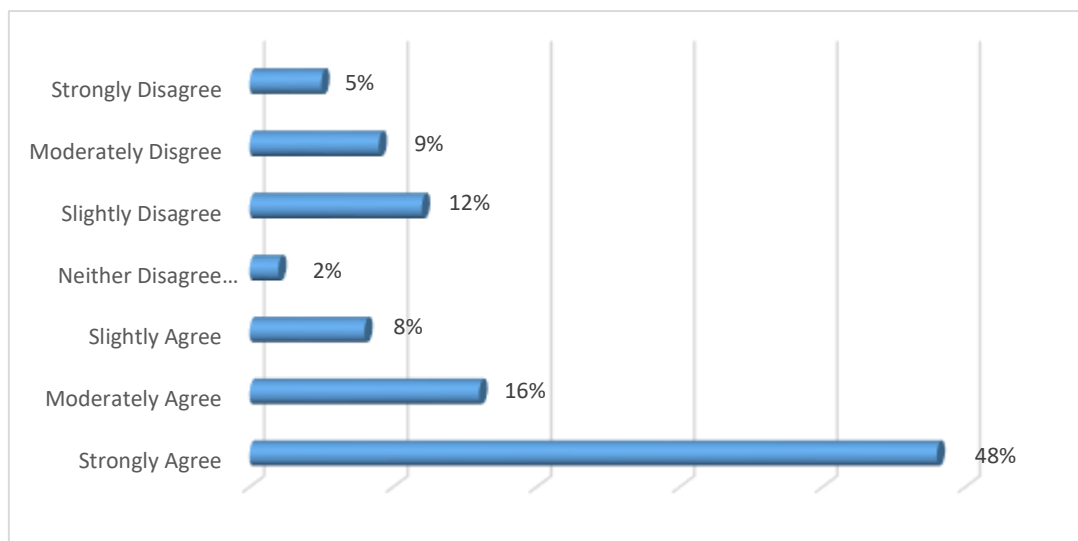


Figure-11: Perception on the significant increase of the penalties for food safety offences immediately.

Technical personnel and laboratory facilities

Adequate number of technical person and the laboratory facilities are import for the implementation of the food safety regulation. Figure-12 show respondents' perception on the lack of adequate and well trained personnel in the implementation of the food safety regulation. It tells that majority of the respondents (67%), such as 32% strongly agree, 19% moderately agree and 16% slightly agreed that there is a lack of technical personnel. However, 24% respondents, such as 5% strongly disagree, 7% moderately disagree and 12% slightly agreed. that there were enough personnel to oversee regulatory activities. The remaining 9% respondents neither disagreed nor agreed with this statement. Therefore, lack of technical manpower is perceived as important factors of food safety regulatory ineffectiveness.

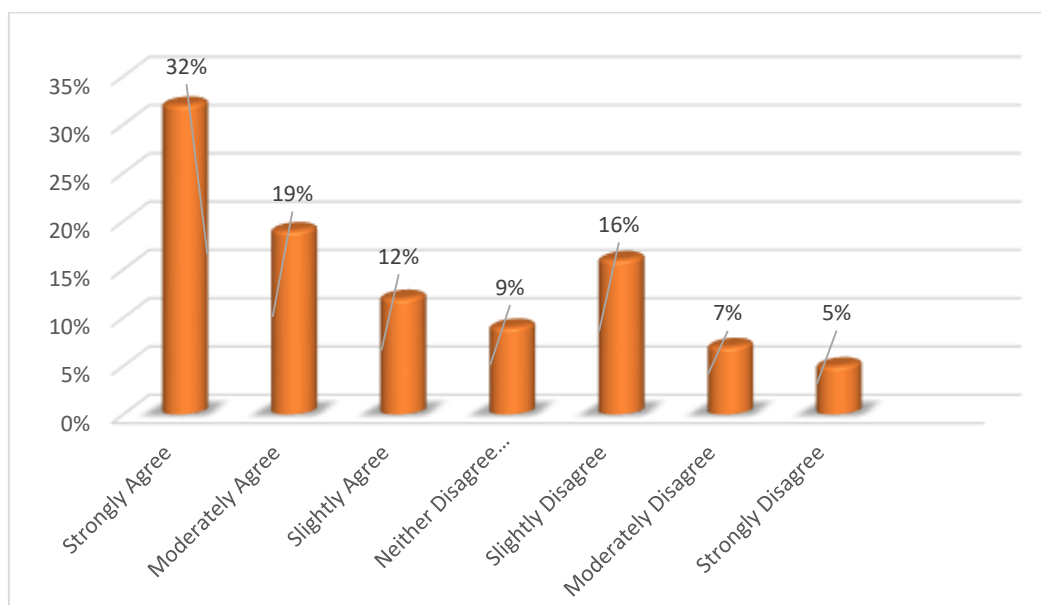


Figure-12: Perception on the lack of adequate and well trained personnel.

Along with the sufficient number of technical people, the state of the art laboratory facilities is required for the well-functioning. The Figure-13 shows the perception of the respondents on the lack of state of the art food testing laboratory facilities. It denotes that majority of the respondents (57%), such as 20% strongly agree, 29% moderately agree and 8% slightly agreed that there is a lack of 'state of the art' food testing laboratory facilities. However, 30% respondents, such as 9% strongly disagree, 18% moderately disagree and 12% slightly agreed that there are enough state of the art food testing laboratory facilities. The remaining 4% respondents neither disagreed nor agreed with this statement. From the above perception analysis, it can be said that Bangladesh lacks adequate trained personnel as well as sufficient well equipped laboratories for the detection, and analysis of the food safety hazards.

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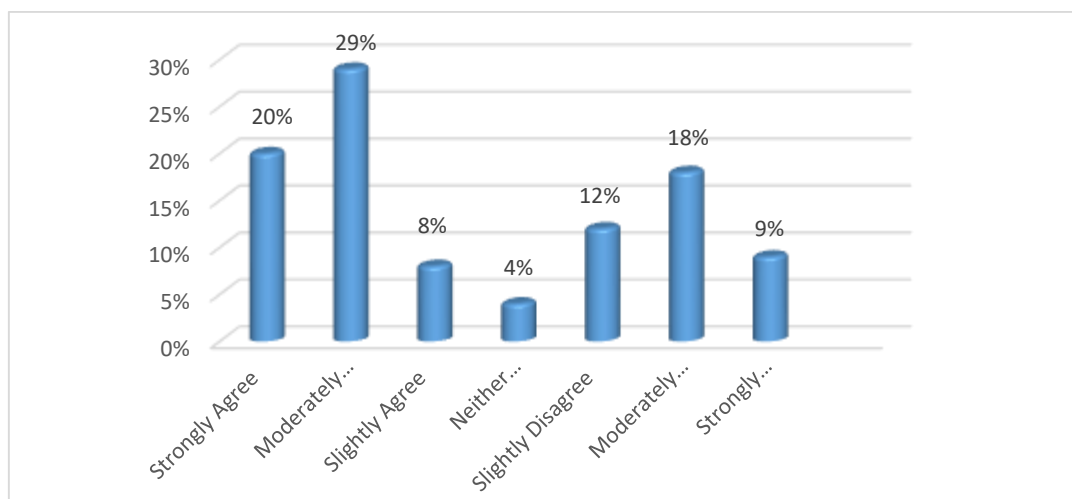


Figure-13: Perception on the lack of state of the art food testing laboratory facilities.

Decentralized food safety regulatory network

It is evident that the Bangladesh food safety regulatory network is functioning within a very centralized system of regulation of the food hazards. Along with BFSA the city corporations, municipalities, districts, and sub-districts local level administrative units are responsible for food safety. However, these organizations are suffering due to lack of modern food testing facilities and the proper enforcement of the regulatory decisions at local level. Figure-14: shows the perception of the respondents on the lack of decentralized food safety regulatory network in Bangladesh. It tells that majority of the respondents (60%), such as 26% strongly agree, 18% moderately agree and 16% slightly agreed that there is a lack of decentralized regulatory system of food safety hazard. However, 37% respondents, such as 7% strongly disagree, 19% moderately disagree and 11% slightly disagreed with the statement. The remaining 3% respondents neither disagreed nor agreed with this statement. From the above perception analysis, it can be said that Bangladesh needs to establish a decentralized regulatory network for the detection, and analysis of the food safety hazards as well as for an effective regulatory environment.

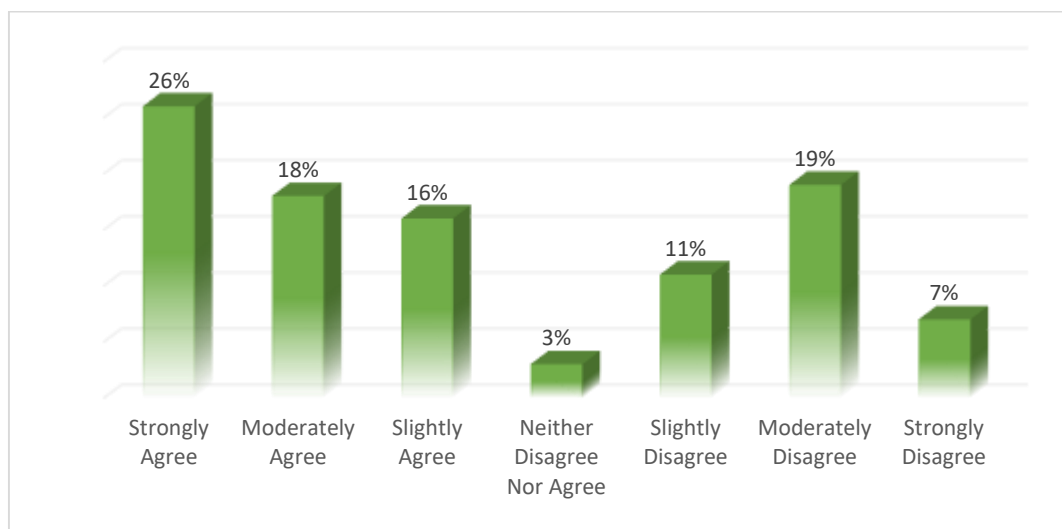


Figure-14: Perception on the lack of decentralized food safety regulatory network.

4. CONCLUSION AND POLICY RECOMMENDATIONS

This research is intended to capture the perceived determinants of effective food safety regulation in Bangladesh. Hence, underpinning variables of effective food safety regulation were analyzed intensively to determine the level of effectiveness of Bangladesh food safety regulatory performance in this study. These factors include: (i) autonomy of the main regulatory agency; (ii) inter-organizational coordination; (iii) enforcement of regulation effectively; (iv) accountability and transparency; (v) penalties for food safety offences; (vi) technical personnel and laboratory facilities; and (vii) decentralized food safety regulatory network.

The case of Bangladesh food safety regulatory arrangements has been selected purposively. For the study, data have been collected from two main sources: primary and secondary. Using a structured questionnaire survey, primary data have been collected from the 200 respondents, namely BFSA officials, food consumers, the food businesses, and the members of the civil society. Within

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different categories of stakeholders, we have selected the respondents purposively. We have also collected secondary data from sources like legal and regulatory documents and decisions, books, journals, newspaper article, previous study report, research papers etc. Using the MS Excel software, we present data through table and figures and charts, and for the analysis of the research result we relies on descriptive mode of statistical analysis.

In our findings, autonomy of the main regulatory agency, namely Bangladesh Food Safety Authority (BFSA) in discarding is functions in practice, and coordination bewtteen main regualotry agncy and other regulaotry actrs are perceived as important determinates of effective food safety regulation. Effective enforcement of regulatory decisisions, and accountability and transparency as principle of quality regulatory governance are perceived another factors for quality food safety regulation. It is also perceived that penalties are not sufficient enough for the food safety offences and the immediate increase of the penalties is perceived as very important. Technical personnel and state of the art laboratory facilities are other determinants of the regulation of food safety. Again, decentralized food safety regulatory network is perceived as very important determinants for the control of the food safety hazards at all level as well as for an effective regulatory arrangement.

Based on perceived determinants, the following are the policy recommendations for desired food safety regulatory outcome in Bangladesh:

- The formal competence of the BFSA is not enough for its actual autonomy in the regulation of the food safety. The BFSA should be careful enough about its actual regulatory decision-making power and the enforcement of these decisions with respect to the protection of public interest in food safety regulation.
- The meeting of the National Food Safety Management Advisory Council (NFSMC), Central Food Safety Management Coordination Committee (CFMCC) should be organized regularly as coordination between authorities and other actors directly or indirectly involved in the regulatory process is perceived very important determinant of the food safety regulation.
- It is recommended to enhance the enforcement capacity of the food safety authority. The sufficient number of executive magistrate should be posted at the BFSA and the active participation of the law enforcing energy should be ensured.
- The items of agenda for regulatory decision-making process should be disclosed and the unusual report of the authority should be published on time to improve the accountability and transparency of the BFSA with respect to foodstuffs regulation.
- It is recommended to increase of pantries immediately for food safety offences as it is perceived as important factors for foodstuffs standards. The amount of administrative fine should be increased.
- The adequate trained personnel as well as sufficient well equipped laboratories for the detection, and analysis of the food safety hazards should be ensured immediately. The on the job training should be arranged for the newly appointed food safety offices, scientific officers and research officers. The state of the art food retesting laboratories should be ensured at the district level.
- Strengthening the capacity of the district level food safety regulatory activities should be given priority as the decentralized food safety regulatory network is perceived as very important determinant for foodstuff standards. Moreover, the local community and the local government institutions should be incorporated in the food safety regulatory activities at the distinct and the *Upazila* [sub-district] level.

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