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The Evolution of Electronic Reverse Auctions: Towards a Multi-Criteria Approach

By Mohamed Fakher Bentaleb

Abstract - Internet proposes services and tools which transform in depth the on-line transactions B-to-B. So, the electronic marketplaces are considered as a real revolution since about twenty years. The first objective of this article is to explain the process of two types of electronic reverse auctions organized in marketplaces. In the second part, we try to answer the question: Do electronic reverse auctions really optimize the supply chain after more than two decades of use? We will also try to show the interests of a global vision and not only on prices reduction in the process of these reverse auctions. On the other hand, the case of public procurement in France will be studied in order to highlight the new opportunities offered by “multicriteria reverse auctions” with regard to the traditional electronic reverse auctions.

Keywords: e-procurement; e-SCM; marketplace; multicriteria reverse auction.

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The Evolution of Electronic Reverse Auctions: Towards a Multi-Criteria Approach

Mohamed Fakher Bentaleb

Abstract - Internet proposes services and tools which transform in depth the on-line transactions B-to-B. So, the electronic marketplaces are considered as a real revolution since about twenty years. The first objective of this article is to explain the process of two types of electronic reverse auctions organized in marketplaces. In the second part, we try to answer the question: Do electronic reverse auctions really optimize the supply chain after more than two decades of use? We will also try to show the interests of a global vision and not only on prices reduction in the process of these reverse auctions. On the other hand, the case of public procurement in France will be studied in order to highlight the new opportunities offered by "multicriteria reverse auctions" with regard to the traditional electronic reverse auctions.

Keywords: e-procurement; e-SCM; marketplace; multicriteria reverse auction.

I. INTRODUCTION

Effective procurement management often leads to optimization of a company's entire supply chain. This optimization results in the reduction of costs, not only for strategic purchases (production) but also for non-strategic purchases (non-production). The competition of new suppliers on the Internet is also a very effective process of reducing costs for buyers. It is in this context that electronic tools are emerging to help companies better manage their supplies. Among these tools we distinguish more particularly the marketplaces.

Thus, the actual democratization of the Internet makes electronic procurement through marketplaces accessible to businesses of all sizes. Indeed, the appearance of marketplaces in the B2B universe is a fortunate thing for SMEs / SMIs. "As proof, B-to-B marketplaces have been rolling out at high speed since 2017. That year, the platforms for professionals from the two global giants Alibaba and Amazon had generated respectively no less than 11 billion and 4 billion dollars in business volumes! These results suggest much greater prospects in a B-to-B ecosystem in full digital acceleration" (TEISSIER and DE CATHEU, 2019).

According to the Mercator dictionary, a marketplace is defined as "a meeting place [on the Internet] between supply and demand: negotiations, purchases and associated services". Indeed, a marketplace provides several services such as e-sourcing (search and selection of suppliers), e-procurement (automation of the process managing orders), electronic reverse auctions, etc.

However, the electronic reverse auctions become progressively a very interesting tool for certain buying companies. The motivation for these companies is the significant gain and the drastic reduction in procurement costs. Conversely, the suppliers consider these auctions as a tool that degrades their competitiveness.

As there are different types of electronic reverse auctions, we will focus in this article on the use of "open" and "sealed" electronic reverse auctions.

The main objective of this article is first to explain the process of electronic reverse auctions and then to present the two types of electronic reverse auctions most used by companies doing their e-procurement. In addition, this article addresses the interests of a "global vision" and not just "price reduction" in the electronic reverse auction process. Finally, the case of Public Purchasing in France will be treated to show the new opportunities offered by "multi-criteria electronic reverse auctions" compared to the classical electronic reverse auctions usually used.

However, the strategic, secretive and evolving nature of these auctions makes it difficult, if not impossible in some cases, to obtain first-hand information and documentation. This forced us to base our research mainly on secondary sources. These are very essential in addition to the theoretical analysis of reverse auctions that we will present.

II. ELECTRONIC REVERSE AUCTIONS

Reverse auctions have been considered for more than two decades as the new electronic purchasing technique. This is "an electronic bid selection process that allows candidates to lower their prices and change the value of certain other quantifiable elements of their bid" (BALU, 2012).

Electronic reverse auctions "now represent 15-20% of the total volume of B-to-B transactions worldwide." And the markets involved can be considerable, such as an operation organized by the British National Health System, which was concluded for an amount of 1.8 billion euros" (BRUNAT, 2017).

On the other hand, the French government declared on June 20, 2019 that "the process of reducing public procurement to a minimum of 1 billion euros by the end of 2022 has been launched. In less than 6
months, the State Purchasing Department (DAE) must develop and start this budget savings plan, accompanied by a consulting firm, soon to be appointed, for an amount of approximately 35/40 million euros.\(^1\)

The first suppliers who participate in electronic reverse auctions were motivated and enthusiastic. Quickly, some of them realized the weakness of their logistics which could not follow. Indeed, by participating in these auctions, the costs of storage, transport and delivery have become very high according to them. In order to understand this phenomenon, we will try to analyze it.

There are traditionally two types of electronic reverse auctions: open and sealed reverse auctions.

### Table 1: Example of electronic reverse auction phases for public procurement\(^2\)

<table>
<thead>
<tr>
<th>Admission phase (phase 1)</th>
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<tbody>
<tr>
<td>Opening of administrative and technical files</td>
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<tr>
<td>Examination of parts</td>
</tr>
<tr>
<td>Eviction of competitors not admitted</td>
</tr>
<tr>
<td>End of the list of eligible candidates</td>
</tr>
<tr>
<td>Electronic information of the excluded competitors individually</td>
</tr>
<tr>
<td>Electronic invitation of competitors admitted at least 2 days before phase 2</td>
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<table>
<thead>
<tr>
<th>Price negotiation phase (phase 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access via the link provided by the electronic invitation</td>
</tr>
<tr>
<td>Start of auction at the appointed time</td>
</tr>
<tr>
<td>Proposal of offers</td>
</tr>
<tr>
<td>Competitor ranking</td>
</tr>
<tr>
<td>End of auction time + Timed rounds</td>
</tr>
<tr>
<td>Final classification of competitors</td>
</tr>
</tbody>
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<table>
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<tr>
<th>Allocation phase (phase 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invitation to the lowest bidder to produce the documents in paper format</td>
</tr>
<tr>
<td>Documents accepted?</td>
</tr>
<tr>
<td>Eviction or Attribution</td>
</tr>
<tr>
<td>Electronic reverse auction report</td>
</tr>
</tbody>
</table>


The negotiation phase (phase 2) is the key step in electronic reverse auctions. In order to participate, the supplier just needs to enter (in a participation window) a response to the buyer's offer. He also has the possibility in certain cases to ask questions or request information.

During this phase, the auction usually takes place in two stages: a continued stage and a timed stage. During the continued stage in an open reverse auction, suppliers publish their bids and have the option to bid up (downward direction) after a new bid. Before the end of the contained stage, the leader bets are recorded as they are sent, regardless of the time between them and the previous one. So an hour or two could go by between bets. During the timed stage, which typically begins ten minutes before the end of negotiation time, each new bet results in an overtime period (for example 5 minutes) called a round. Receiving a bet during one of these five-minute rounds marks the start of another round, and so on until a round ends without any new bets being registered.

At the end of the timed stage, two situations can happen. If the total price of the winning bid³ is lower than the total reserve prices (price set by the buyer), we automatically go to the allocation phase (phase 3). On the other hand, if the price of the winning bid is greater than the total reserve prices, the buyer must decide whether or not to accept the conclusion of the transaction. If he wishes to accept it anyway, the buyer then has to modify his reserve price to become greater than the total price of the winning bid. So can begin the allocation phase (phase 3) of the auction.

b) Sealed electronic reverse auctions

Sealed electronic reverse auctions are identical to the previous ones, except that during the negotiation phase (phase 2), suppliers do not have access to other bids and are not able to see the prices of their competitors' bids. They do not therefore have the opportunity to bid against their competitors in real time as in opened electronic reverse auctions. In this type of auction, suppliers must decide on their final bid before the beginning of the reverse auction. The amount of the bids therefore remains secret until the end of the negotiation phase. It is archived by the operator of the marketplace and disclosed to other participants on condition that they request it after the close of the auction. Thus, this mechanism implies a more important role for the operator of the marketplace, which must be an objective and neutral third party (BENTALEB, 2010). However, under no circumstances may the identity of the candidates be disclosed during the electronic auction phases.

The total price is calculated by multiplying the price and the quantity of each item, then adding the sum of the amounts thus obtained.

III. Are The Electronic Reverse Auctions Sufficient to Optimize the Supply Chain After More than 20 Years of Use?

With globalization and international competition and in order to get the best deals for their supplies, more and more companies are opting to find and compete with new suppliers through marketplaces. Reverse auctions in this perspective were the star tool and cause controversy over the opportunism of the buyer vis-à-vis the supplier. The experience feedback in this regard is interesting as we want to highlight the opinions of many managers who decide on electronic reverse auctions over its two decades of use.

For the past twenty years, many studies have dealt with electronic reverse auctions in the context of B-to-B marketplaces (BEAM and SEGEV, 1998; HANNON, 2003; BRISSET, 2011; CARLI, 2017). These studies have clearly shown the benefits of these auctions. The following advantages can be distinguished:

- They generate indisputable savings (especially for the buyer);
- They encourage collaborative relationships;
- They drastically reduce the error rate associated with communication;
- They make transactions more transparent (especially opened reverse auctions);
- They allow greater openness of the panel of suppliers;
- They allow an indisputable saving of time for some types of products.

Indeed, as mentioned by Franck LE TENDRE, Managing Director of Synertrade France: “Almost all products can be purchased by electronic reverse auctions, then the gain effect will vary. On large series products, reverse auctions are quite effective but not on the service sector. If, for example, the labor part is important in the finished product, the auctions will have little effect” (DAVID, 2017).

However, it is commonly accepted that, especially with regard to non-strategic (non-production) purchases, if the buyer finds a similar product at a lower price from another supplier, even if their relationship has lasted for several years, he cannot hesitate to change it in favor of this new supplier. Therefore, electronic reverse auctions can present an extremely worrying threat to suppliers who can react accordingly (decline in service, faulty delivery, lower quality, etc.).

In addition to this threat, which can “poison” the relationship between buyer and supplier, saving time and money is sometimes disputed by some academic research.

Through this article, these theoretical arguments will be confirmed by numerous testimonies in the
professional world in order to try to detect the best way to use reverse auctions.

a) Saving time and money not always easy

While the most dramatic phase of the electronic reverse auction is the phase of falling prices in real time, this phase alone creates very little value in some cases.

Numerous studies have shown over the past twenty years that sometimes more than 80% of the value created in a reverse auction is linked to the rigorous preparation of the upstream and downstream of this one. A study carried out by ACCENTURE in 2001 on a reverse auction sample - involving similar categories and under homogeneous starting conditions - showed that:

- Rigorously prepared auctions (clear product specification; logistics capacities; understanding and analysis of the supplier market; precise composition of the supplier panel; definition of the auction strategy; anticipation of selection criteria and contractual clauses) allowed to carry out gains between 15 and 30% of the starting value.
- Auctions for which only information and preparation of the suppliers had been carried out in advance only allowed to obtain price reductions between 2 and 10% of the initial value.
- Finally, the only electronic reverse auction process only allowed marginal gains to be generated between 0 and 2% of the starting value (<www.accenture.fr>, 2nd quarter 2001).

In addition, the studies of EMILIANI (2000, 2007) and EMILIANI and STEC (2002) seems very interesting to us in this perspective. Indeed, the authors explain that buyers can negotiate with suppliers in order to establish long-term agreements for specific products and to concentrate purchasing volumes with the minimum number of suppliers. Rationalization of the
supplier portfolio can be an emotional event, since buyers tend to favor certain suppliers over others and may impose subtle barriers to rationalization (EMILIANI, 2000).

![Figure 2: The process of an electronic reverse auction (EMILIANI, 2000)](image)

Figure 2 illustrates a typical process for an electronic reverse auction, from project start to bid day. These steps are usually standard activities that the majority of buyers can accomplish on their own, without assistance from the marketplace operator. The losses incurred by detailed bid analysis after electronic reverse auctions are sometimes greater than the actual savings gained through these auctions. Indeed, at the end of the auction, the buyer evaluates the data of the offer. Typically, it asks the marketplace operator for additional detailed information, including quality and up-to-date information on delivery performance, changes in supplier capacity, etc. The evaluation of offers and additional data can take several weeks and should include other functions such as quality, product management, manufacturing engineering, etc. The time lag between the finalization of the offer and the allocation of the contract can generate additional work without added value. For example, a supplier can participate and win other additional auctions with other partners. As a result, he may not be able to honor his commitment to the buyer. Consequently, the buyer may have to re-evaluate the data and allocate the deal to the second-place candidate (the second-prize offer) (EMILIANI, 2000).

After the auction, the buyer makes the decision either to confirm the supply order or to cancel it. In each case, there is an introductory period during which the buyer and supplier must come to an agreement. The introductory period can be 12-18 months for some types of products, which is significant if the long-term agreement is for three years, for example. This is because the agreed agreement contains information on the price, cost and delivery performance targets, as well as other terms and conditions. The necessary signatures are obtained from the buyer and the supplier, which therefore gives the supplier the possibility to start the work. If the supplier already has the requested products in stock, he can proceed immediately to delivery, with the new price already agreed during the auction. However, it is clear that the ability to immediately reduce prices gives an advantage to the buyer’s usual suppliers. Thus, the buyer avoids the costs associated with changing his usual supplier. It is important to note here that the likely choice of usual suppliers by the buyer during electronic reverse auctions will discourage other suppliers to participate.

If the requested product is new to the supplier, he must therefore obtain updated information and specifications from the buyer, order the raw material, design the process, manufacture the tools, etc. last two to four months. The buyer will not begin to receive any benefits generated by the auction until after receiving the products from the supplier. In addition, the total recommended savings will only be realized when the buyer receives the total annual quantity of the products, which requires more or less a year, depending on market demand.

Additionally, according to EMILIANI’s 2007 research at Central Connecticut State University on the use of reverse auctions, marketplaces that offer reverse auction services want us to believe that today reverse auctions have improved a lot, but there is no improvement after more than 10 years of effort. “Be sure that they will generate more work and more time for you” (EMILIANI, 2007).

In addition, some claim that the relationship between the buyer and the suppliers deteriorates using reverse auctions. “This process destroys everything related to the know-how of buyers and sellers. Reverse auctions are a deadly system”, declared Jean-Claude VOLOT, president of the national joint fund (AGFPN),
Thus, suppliers suspect opportunistic behavior by buyers. In fact, some buyers involve their usual suppliers in reverse auctions in order to confront them with new suppliers. The aim is to put pressure on the usual suppliers to force them to lower their prices (JAP, 2007). The risk of deterioration in the supplier relationship is a major and very complex issue for the Purchasing department, because this risk occurs at multiple levels: financial, legal and above all ethical.

b) Multi-criteria weighted reverse auctions as an alternative

Weighted multi-criteria reverse auctions can be a very attractive alternative in order to minimize and reduce the strain on suppliers. Indeed, other criteria that the price must now take into account: such as the detailed specification of the products, qualities requested, contractual clauses, notification of suppliers, etc. “Modern reverse auctions introduce multi-criteria competition; we are far from a simple request for a quote!” (BRUNAT, 2017).

In this perspective, multi-criteria reverse auctions have shown their effectiveness in public procurement in France. In fact, the dematerialization of public procurement is growing strongly. “Announced on June 20, 2019 by the government, the process of reducing public procurement to a minimum of 1 billion euros by the end of 2022 has been launched, and must move forward quickly. In less than 6 months, the State Purchasing Department (DAE) must develop and start this budget savings plan, accompanied by a consulting firm, soon to be appointed, for an amount of approximately 35/40 million euros. […] The objective now is to achieve more than 4% savings on 24 billion public purchases divided into 10 areas, real estate (including leases) and infrastructure works representing the first item with 42%. In addition, the 30 main suppliers account for 29% of this expenditure. However, the trend in the total amount of orders from the State and its operators is up by almost 20%” (L’ACTUALITÉ DES MARCHÉS, 2019).

In fact, as part of a process to consolidate its purchases, the French Ministry of Culture organized a multi-criteria reverse auction for the purchase of supplies. The criteria adopted concerned not only the price but also sustainable development (labels), delivery times, the candidate’s commitments to meeting these deadlines and the quality of the company’s workflow (BRISSET and MARECHAL, 2011).

Thus, weighted multi-criteria reverse auctions rather focus on valuing technical quality in the context of the use of reverse auctions. We are now moving from a “low price” transaction to a “best price” transaction. It is therefore about highlighting the best value for money. It is in this context that a mathematical formula emerges. This formula incorporates the weighting of all the criteria set to determine the most favorable offer. The criteria...
The Evolution of Electronic Reverse Auctions: Towards a Multi-Criteria Approach

The objective of weighted multi-criteria reverse auctions is to enhance other criteria alongside the price criterion. It is indeed about highlighting the best value for money. The formula used is:

\[ Me = Mo \times (1 - (Pnt \times Nt)) \]

Where:
- Me = Amount of the weighted bid
- Mo = Amount of the offer submitted by the supplier
- Pnt = Percentage weight attributed to the technical note\(^5\)
- Nt = Technical score (between 0 and 10)

The higher the technical score, the greater the candidate's bonus.

However, the use of weighted multi-criteria reverse auctions alone is not sufficient to anticipate and avoid as much as possible the risk of deterioration of the
taken into account must be objective and precise so as not to leave an unfair freedom of choice to the buyer. The weighting assigns a coefficient to each of the criteria. The economically most advantageous offer is then evaluated overall, with regard to all the criteria that make it up. As a result, the analysis of offers becomes more refined, which favors the choice of the “best-performing” offer. The above-mentioned mathematical formula is used in order to determine the automatic reclassifications, with each new presentation of prices, must be brought to the attention of the candidates in the invitation. This formula must incorporate the weighting of the criteria as announced in the consultation documents of the multi-criteria reverse auction. In addition, the buyer freely chooses the most suitable coefficients for him (CCP\(^4\), 2019).

The method therefore consists in attributing a bonus to candidates (suppliers) by means of a technical rating. For the purchase of a laptop, for example\(^5\), the technical rating \( N \) assigned to the configuration is the sum of the weight rating, the technical quality rating and the docking station rating, weighted by their respective weight (respectively 30%, 50% and 20%):

\[ N = (0.30 \times N_{tPo}) + (0.50 \times N_{tQt}) + (0.20 \times N_{tSa}) \]

Where
- \( N_{tPo} \): weight rating;
- \( N_{tQt} \): technical quality rating;
- \( N_{tSa} \): workstation rating.

In addition, the technical quality rating, for example, can be the result of several sub-criteria scores (Table 2).

### Table 2: Detail of the technical quality score for a laptop computer

<table>
<thead>
<tr>
<th>Score of the sub-criterion</th>
<th>Purpose of the sub-criterion</th>
<th>Percentage in ( N_{tQt} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>( N_{tcr1} )</td>
<td>Quality of the shell, materials, coating, general ergonomics of the product</td>
<td>20.00%</td>
</tr>
<tr>
<td>( N_{tcr2} )</td>
<td>Quality of the hinge system, laptop locking device</td>
<td>10.00%</td>
</tr>
<tr>
<td>( N_{tcr3} )</td>
<td>Screen quality, brightness, displayed resolutions, Any screen smaller than or equal to 12.1 inches will result in the application of a maximum score of 5 Any screen of a size greater than or equal to 13 inches will result in the application of the minimum score of 9</td>
<td>15.00%</td>
</tr>
<tr>
<td>( N_{tcr4} )</td>
<td>Quality and ergonomics of the integrated pointing device</td>
<td>10.00%</td>
</tr>
<tr>
<td>( N_{tcr5} )</td>
<td>Keyboard ergonomics</td>
<td>15.00%</td>
</tr>
<tr>
<td>( N_{tcr6} )</td>
<td>Effectiveness of stop / start, resume and computer standby devices</td>
<td>10.00%</td>
</tr>
<tr>
<td>( N_{tcr7} )</td>
<td>Additional hardware and software devices provided in addition to the minimum stipulated in the specifications and described in the technical report attached to the offer</td>
<td>20.00%</td>
</tr>
<tr>
<td>Total percentage</td>
<td></td>
<td>100.00%</td>
</tr>
</tbody>
</table>

Thus, as stated previously, the objective of weighted multi-criteria reverse auctions is to enhance other criteria alongside the price criterion. It is indeed about highlighting the best value for money. For example if the weight attributed is 7%, we will have the formula:

\[ Me = Mo \times (1 - (0.07 \times Nt)) \]

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For example if the weight attributed is 7%, we will have the formula:

\[ Me = Mo \times (1 - (0.07 \times Nt)) \]
The article showed how managing the global supply chain remains the key to successful reverse auctions in the B2B sphere. Indeed, the buyer as the supplier must rigorously prepare the upstream and downstream of the auction in order to take full advantage of this technique. It is in this perspective that weighted multi-criteria reverse auctions have shown convincing results via marketplaces. By moving from a focus primarily on reducing the price to a more global view allowing a better relationship between buyers and suppliers. Public purchasing departments in France are now particularly very interested in this type of reverse auction insofar as it takes several other criteria besides the criterion of price reduction.

Despite the growing interest in multi-criteria reverse auctions and the advantages they suggest, we must not lose sight of the training and support of suppliers, which are a mandatory condition to successfully conduct and benefit from this type of reverse auction.

### References Références Referencias


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supplier relationship. Indeed, the marketplace operator must organize, for example, a preliminary interview with the buyer and suppliers in order to explain to them the operating principle of the auction and to answer their questions. This process becomes more humanized and collaborative, through the training of the buyer and participating suppliers. It also encourages suppliers to seek the ability to meet a company’s requirements in order to be eligible for selection. We are now far from classic electronic reverse auctions, where the human aspect was almost non-existent accompanied by often ill-defined rules (POIRIER, 2017).

In the same vein, Synertrade (specialist in e-Purchasing solutions) launched in December 2016 its “Auction-as-a-Service” offer. The offer includes the creation and management of electronic reverse auctions via the Syner Trade Accelerate platform and, depending on the desired level of service, application on boarding and supplier training, or even total management of the auction: from the definition of the strategy to its launch and its restitution (DAVID, 2017).

### IV. Conclusion

A marketplace is a virtual meeting platform between buyers and suppliers on which they can form “Many-to-Many” relationships. It allows more tangled relationships and offers additional services to the various partners such as negotiation spaces, tenders, electronic reverse auctions, etc. By fundamentally transforming the business buying process, electronic reverse auctions are opening up real opportunities for the business world.

Whether used to carry out purchasing or sourcing operations, the electronic reverse auction makes it possible to streamline the Supply Chain process by reducing its cost and its execution duration. But even more, it offers the company the opportunity to reorganize the purchasing function, to simplify the procedures and to optimize the sequence of tasks. Electronic reverse auction is a way of working that changes the behavior of buyers and suppliers.

However, today the task of the management of the company is to find the most effective price reduction methods. Since the products and services purchased constitute a large portion of the cost of goods sold, buyers may put ongoing pressure on suppliers. Indeed, it is well known that suppliers are often forced to accept this pressure to continue to receive orders. This, however, can be detrimental to their logistics performance.

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7 Application onboarding refers to the process by which a user who has just installed a mobile application is accompanied and guided during its first use through the display of specific screens.
Price Agreements to Restriction Competition- Vision from the Affects, Sustainable Nature, Impact Assessment, and Proposals of Legel Control

By Tran Thi Nguyet & Dr. Tran Anh Vu

Summary- In order to control price competition restriction agreements by law, the state needs to accurately identify the price instrument and the influence of the price-use agreement to limit competition. A pricing tool to be used effectively in restraining price agreements and that is often a way to maximize the profitability of the business. The legal nature of the act of agreement to use prices to limit competition revealed in the price fixing agreement is an agreement between enterprises on the same relevant market. From this agreement, limits or eliminates the possibility of price action among businesses participating in the agreement in order to increase profits. However, the agreement to use prices to limit competition is not sustainable. From these scientific points of view, the author proposes ways to deal with price agreements to limit competition, including: sanctions, leniency and waivers for such agreements, to best control them by law.

Keywords: price; price agreement; competition restriction; competition restriction agreement.

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Strictly as per the compliance and regulations of:
Summary - In order to control price competition restriction agreements by law, the state needs to accurately identify the price instrument and the influence of the price-use agreement to limit competition. A pricing tool to be used effectively in restraining price agreements and that is often a way to maximize the profitability of the business. The legal nature of the act of agreement to use prices to limit competition revealed in the price fixing agreement is an agreement between enterprises on the same relevant market. From this agreement, limits or eliminates the possibility of price action among businesses participating in the agreement in order to increase profits. However, the agreement to use prices to limit competition is not sustainable. From these scientific points of view, the author proposes ways to deal with price agreements to limit competition, including: sanctions, leniency and waivers for such agreements, to best control them by law.

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I. INTRODUCTION

The goal of businesses is to maximize profits. In order to develop, every business must have a reasonable pricing strategy by itself. Price is the result of competition and is also an effective means of competition. In order to maximize profits, businesses tend to eliminate price competition through anti-competitive agreements. It is the price agreements between competitors that have profoundly influenced the competitive structure in the market, thereby having a great impact on other firms doing business in the same relevant market or partnering. Great impact on consumers by stripping the right to choose competitive prices for the goods and tools that enterprises supply. In the study of economics, an agreement to use prices to limit competition can be divided into price fixing agreements to exploit customers and agreements to use prices to strengthen position in the relevant market. They are all anti-competitive agreements that are toxic to the market.

II. RESEARCH QUESTION

a) What is the legal nature of agreement on using price to limit competition?

i. What is the economic rationale and what is the legal basis for assessing the impact of price agreements to limit competition and for how to control them by law?

III. RESEARCH METHOD

- Interpretation method
  This is the method applied to study the basic theoretical issues of the law controlling the price-fixing agreements to limit competition; the study of economics when considering price use agreements.

- Methods of analysis and commentary
  This method is applied to present the specific provisions of the international legal system as well as the Vietnamese legal system on price-fixing agreements to limit competition.

- Comparative jurisprudence
  This method is also used to study the provisions of international law, study international case law, laws of different countries and compare with the provisions of competition law of Vietnam to evaluate the compatibility and conformity through which to draw experience and specific solutions in the laws of the countries. On that basis, the author proposes a solution to perfect the Vietnamese competition law in terms of controlling price fixing agreements to limit competition.

- Methods of systematizing and synthesizing
  This is a research method used to generalize and draw basic conclusions and proposals on the author's new contributions to the improvement of Vietnamese law on controlling price agreements. competition restriction.

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IV.  Research Results

a) Price agreement and price agreement influence tools to limit competition

i. The pricing tool is used effectively in restraint agreements

Agreements using prices to restrict competition are agreements that agree to act between enterprises competing in the relevant market formally or informally in the form of an implicit or public agreement. In which businesses use prices as a tool to achieve the purpose of restraining competition in the relevant market. In order to be able to achieve monopolistic profits or behave in the relevant market as a monopoly, competing firms must emulate that position through agreed-to-act agreements. Therefore, it can be seen that the subjects carrying out anti-competition agreements in general and agreements using prices to limit competition in particular are enterprises located on the same relevant market.

An agreement to use price to limit competition can be either a public agreement or a tacit, formal or informal agreement. All are agreement but the agreement to use the price to limit competition and the contract differs in terms of approach. Contracts are agreements between parties to establish, change or terminate rights and obligations. It is governed by civil law and specialized laws. In which, the law will provide for effective conditions for this agreement to be considered a contract. The conditions can be the conditions of the subject's capacity, the form of the contract. Meanwhile, the price agreements to limit competition are understood as the agreements between the parties on the action, thereby controlling the ability to act independently between the parties in the relevant market. With an approach to ensure the order of competition in the market, the factor that is concerned is whether or not enterprises proceed to eliminate or reduce competition pressure through agreement. Therefore, the form of the agreement is not the factor that needs to be concerned. By its unjust nature, competition restriction agreements are prohibited by the competition laws of many countries. As a result, these agreements can take place publicly or implicitly. According to Herbert Hovenkamp, “although under Article 1 of the Sherman Law, an agreement between the parties is required. But this agreement can be determined based on evidence based on its context. The court can still handle collusion even though there is no direct evidence that the defendants have participated in the action together. So it can be seen that the public or tacit agreement, written or verbal, is essentially just a way for the parties to reach agreement to act. The differences of the forms have almost no effect on the purpose of the agreements to restrain competition.

The long-term goal of the business is profit. Consistent with that goal, businesses will tend to increase selling prices to obtain exclusive profits. In terms of economy, firms in competitive market and monopoly profit are different.

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<th>Competitive market</th>
<th>Monopoly profit</th>
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<td>( P = MR = MC )</td>
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In which: \( P \): Selling price; \( MR \): Marginal revenue; \( MC \): Marginal cost

Accordingly, in a competitive market, businesses will maximize profits when selling price equals marginal revenue. Meanwhile, in the monopolistic market, the firm's selling price is higher than its marginal revenue.

Businesses will have an incentive to jointly set an output in order to achieve the desired price. In other words, through a consensus agreement of action, firms acted as either a dominant or monopoly firm (depending on whether this agreement included all or only the majority of the above firms. relevant market) so that it can be directed to the level of profit that a dominant / monopolist can get. According to Herbert Hovenkamp, agreed-upon firms act as likely to enjoy monopolistic profits like a single monopoly. Consider how to maximize the profitability of a monopoly through the following figure:
Looking at the above figure, if price is $P$, marginal revenue is $MR$, marginal cost is $MC$, businesses will base on the intersection point $P = MR = MC$ (point A) and determine the needs of users by the demand curve to determine the demand level B, from which the price can be fixed in line AB. In other words, users pay more when businesses emulate a monopoly position in the relevant market through a consensus act. But on the other hand, according to the rule of supply, when the price increases, the supply also increases (because the supply curve is an upward slope). Other firms (operating on the same relevant market or potential competitor business) will tend to enter the market or supply more. The positions of the participating businesses will be shaken. Therefore, these businesses have two options, either to reduce the selling price (which also means the profit will decrease) or seek to eliminate these businesses to consolidate or increase market share in the relevant market.

However, it is theoretically necessary to distinguish anticompetitive agreements (in which price agreements are part) from those promoting anti-competitive agreements (hereinafter referred to as deals are facilitated). Because these promotion agreements, although very similar to anti-competition agreements, in terms of impact on competition, they are completely different in nature from anti-competition agreements. The United States is one of the pioneers in establishing institutions that govern anti-competition and monopoly agreements.

U.S. antitrust laws stipulate that while the exchange agreement, providing information on prices by itself is not illegal, proof that competitors share information to fix prices will be grounds for asserting evidence for conspiracy or illegal conduct. The assessment of the lawfulness of the act of exchanging and providing information in the United States must be done based on "rule of reason" - a specific analysis method in the Antitrust Law, helps to distinguish between legal and illegal communications through balancing the non-competitive effect of information exchange between competitors versus the benefits of potential competition of behavior.

Evidence of damage from anticompetitive behavior, such as an increase in prices across the industry following the exchange of information, would be the strongest factor in finding illegal exchanges. In the absence of such obvious anti-competitive effects, the following criteria will have to be considered in evaluating the legality of communication, including:

- The nature and quantity of information (widely exchanging information about prices, outputs, large costs, marketing strategies and new product development are more likely to have anti-competitive implications);
- When information is shared vs. price change (past data sharing is generally considered less problematic than current data sharing);
- The will of the parties when exchanging information (for the purpose of restraining competition, such as to fix prices or stabilize prices, will be a problem);
- Industry structure (in concentrated industries, an exchange between a few firms can be a high risk to competition);
- The level of publicity of information exchange (when information is publicly disclosed, the risk from information exchange between competitors will be low);
- how communication is structured and controlled (direct communication is often more competitive than exchanging through a middleman);
- Exchange frequency (exchange more often, problems may occur more). The World Bank and the OECD classify an information exchange agreement as a kind of agreement that facilitates anti-competition agreements. Accordingly, these
agreements may motivate the parties to enter anti-competitive agreements, but can also bring positive aspects to the market. Specifically, agreements that facilitate anti-competitive agreements are agreements that require unified action in sharing information, agreeing on product standardization, accepting specific conditions or price-related activities can make restraint agreements easier in oligopolistic markets to avoid mutual competition, even in the absence of anticompetitive agreements. explicitly. Therefore, the World Bank and the OECD recommend that when evaluating the anti-competition agreement facilitation agreements, it is necessary to evaluate the following four questions: agreements occur in markets where market characteristics these arrangements facilitate the formation of cartels; Agreements do occur with most of the major competitors in the market; agreements that make it easy to reach or maintain public or implicit anti-competitive agreements on price or output; Agreements do not have any meaning to promote competition or competitive interests if there is less harm than damage it causes to competition.

b) The legal nature of price fixing agreements in order to limit competition

i. Price-fixing agreement is an agreement between enterprises on the same relevant market.

From this agreement, limits or eliminates the possibility of price action among businesses participating in the agreement in order to increase profits. According to the World Bank and the OECD, the price fixing agreement is a commonly used term to describe a series of actions taken by competitors that directly affect prices. From an economic point of view, the nature of the price fixing agreement is to simulate the position of the monopolist, thereby using the market power gained by the parties through a unified agreement, impact to the price and output output in the relevant market. However, in order to ensure the effectiveness of the price fixing agreements, it is necessary to meet certain conditions in economic terms.

ii. The conditions for the effectiveness of agreements generally include the following three main conditions

The first condition: The market structure must be a concentrated market. A market where the less number of businesses is, the more favorable it is for the parties to conduct anti-competition agreements in particular and price-fixing agreements in particular. A market structure of few firms has solved the problem of anticompetitive agreements: firms always have differences in production costs. Therefore, it will be very difficult to set different prices for firms at different production cost levels. Firms with optimal production costs always want to set a low price, while the rest tend to set a higher price. The higher the number of firms participating in the pricing agreement, the more pronounced the conflict is and the less sustainable the agreements are. Competition restriction agreements and price fixing agreements, because they are illegal, often take place in secret. The larger the number of businesses, the more difficult it is to operate and maintain the confidentiality of the agreement.

The second condition: Barriers to market entry exist. With the nature of setting high prices in the market, price fixing agreements face the risk of losing market share if customers can easily have an alternative to consumer demand. Therefore, the barrier to market entry is one of the important factors for the effectiveness and operation of the agreements. There is a similarity between the price-fixing agreement and the destructive pricing act in terms of preconditions. Because the nature of destructive pricing behaviors is sacrificing short-run benefits to increase prices in the long run, after a successful destructive strategy. Therefore, if the industry has low barriers to market entry, it also means that businesses will find it difficult to increase prices to offset the costs of selling losses. It is also a condition that the dominant business also considers before engaging in behavior.

The third condition: Uniformity of products. The agreement would be much more difficult if the industry had many businesses, if the products were not standardized, and if demand and cost conditions changed rapidly. From the above concept, it is possible to identify the act of price fixing agreement through the following characteristics: First, the subjects performing the price fixing agreement act are competitive enterprises. The Model Competition Law prohibits agreements between competitors or potential competitors, whether agreements exist in written or oral, formal or informal agreements; price fixing agreements or other terms of sale, including in international trade. Second, there must be a consensus to act between the parties. Agreements agreeing to act in anticompetitive agreements in general and price fixing agreements in particular do not necessarily constitute a contract. Under the Model Competition Law, this agreement is whether written or verbal, formal or informal. Regarding the aspect of agreement cannot fail to mention a phenomenon in the oligopoly market. Accordingly, the oligopoly market simply understands that the market only exists in a small number of businesses, in which the behavior change of any business can affect the rest of the industry. When a firm in this market, especially the leading firm or the one with the lowest costs of production, raises prices, the rest can choose to respond by either keeping the price or increasing. prices follow. Even in the case of other firms raising prices, it is a normal business response. Therefore, the existence of
an action agreement is an important factor to distinguish the difference between the anti-competitive agreement act (an illegal act) and the enterprises' reactions to the changes in a competitor's business behavior in the oligopoly market. Third, the content of the agreement related to the price of goods and services. There are various forms of price fixing agreements. The simplest form is that the parties agree on a rate that applies to some or all of the customers. However, according to the recommendations of the World Bank and OECD, in addition to the agreement setting a fixed price, in fact, countries in the process of building competition laws should also consider classifying the following behaviors in price fixing group acts: price increase agreements; pricing formula agreements; agreements that maintain a fixed percentage of competitive prices of undetermined products; agreements that do not discount or establish an identical discount; credit terms agreements that apply to customers; agreements that eliminate the practice of offering at low market prices to reduce supply and keep prices high; The deals do not discount prices if not notified to other members; Compliance agreements with published prices. Fourth, the purpose of the price fixing agreement is to increase profits. The exploitative nature of WB and OECD price fixing agreements is that if the customer has no other option to replace the product under the price fixing agreement, it is not easy to cut down on consumer demand, then the price will increase very high. At the very least, the price fixing agreement sets prices above those of the most ineffective producers in the market. The price fixing agreement can be conducted as a stand-alone agreement or it can be part of a collusion agreement between businesses that governors most of the businesses of its members. Examples include collusion in bidding, division of markets and customers, production and sales quotas.

c) Unsustainability of price agreements to limit competition

Agreements between firms will bring benefits to businesses, but the nature of these agreements is less sustainable links. There are various factors affecting the unsustainability of anti-competition agreements. Basically, the laxity of the linkages between enterprises in a restraining agreement can be assessed through the following basic factors: the difference in production costs of each firm in the agreement.; business goals in the competition process; market structure and transparency; state sanctions against competition restriction agreements.

d) Differences in production costs create laxity of the deal

The essence of anti-competition agreements is that by consensus of action, these enterprises want the group of enterprises participating in the agreement to act as a single enterprise. However, that is in theory. In fact, the businesses participating in the agreement have different production costs. The difference in production costs can arise from the size of the business, production lines and technology, supply chain management or other reasons.

When participating in the agreement, because towards unity of action, enterprises will have to ignore the difference in production costs to fix a uniform price. As a result, the benefits businesses get through the agreement will vary widely. This is also the fundamental difference between an oligopoly and a group of businesses that emulate dominance or monopoly through unified action agreement. This difference in the distribution of benefits, will make the linkage of the participating businesses less sustainable.

e) The goals of the business in the competition process create the unsustainability of the agreement

The goal of the business in the competition process is one of the important criteria, affecting the sustainability of the agreement. The goal of a business in the business process can be because of making a bigger profit than it is now or it can also be to gain market share. With different goals, an organization may be more motivated to engage in behaviors that benefit it, even though these behaviors may go against what the company has committed in its agreements with other businesses. When conducting anti-competitive agreements, the company's strategy is to cut production, thereby increasing selling prices. When a restraint agreement is in place, two things are true: Because agreements are always aimed at cutting output, businesses always sell less than they sell, pre-deal and is probably less than its own production capacity; Selling prices in agreements always bring high profits. When the firm is producing at a level of output below production capacity and where marginal revenue is higher than marginal cost, the firm has an incentive to sell more than it has agreed to other business.

f) Market structure and information transparency are one of the basic factors that create the lax of linkages among firms in the agreement

If the differences in production costs and differences in competitive strategy of the firms participating in the agreement are considered as internal factors affecting the stability of the agreements, then the market structure and the Transparency of market information is an external factor that strongly impacts competition restriction agreements. Market structure is seen mainly through factors such as the number of rival firms in the relevant market, and the concentration of buyers. Along with the differences as analyzed above, the more enterprises that exist, the more lax the agreements are. Economists agreed that anticompetitive agreements were more likely to occur in markets where market concentration was high, markets comprising only two to seven or eight firms. A market
where there are more firms, 15 or 20 firms, agreement to restrain competition is extremely difficult. According to the OECD, a market structure with a small number of firms is one of the key opportunities for anticompetitive agreements. This can be explained through the following two aspects: First, anti-competition agreements, often illegal agreements. So, these agreements often take place in secret. The more businesses participate, the more information exchange and coordination becomes difficult. And more importantly, the easier it would be to make the deals uncovered. Second, in a market where there are many firms, it is very difficult to enter into anti-competitive agreements where all firms are members of the agreement. On the other hand, competition restriction agreements are only effective when 100% of enterprises in the industry participate. On the contrary, the implementation of agreements where there are many enterprises that do not join the agreement only weakens the effectiveness of these agreements. Firms that did not participate in the agreement could increase their output in proportion to the portion that the group of participating firms had cut. If that happens, the businesses participating in the agreement cannot raise prices, while losing market share to competitors. On the other hand, in a market with lots of businesses, the best strategy for businesses is not to enter into anti-competitive agreements. Accordingly, businesses will increase the selling price at a certain level, lower than the price set by the group of participating businesses. But since they don't enter into the deal, they are not bound by anti-competition agreements: they have the right to sell as much as they want.

From the economic perspective, the nature of basic factor agreements gives the participating firms high profits from cutting output to raise prices. But also from that process will arise a conflict of interests between each member of the agreement and the common interests of the whole group of businesses participating in the agreement. However, when an enterprise breaks an anti-competitive agreement, it is likely that this enterprise will face sanctions / retaliation by the remaining enterprises if this behavior is detected. Compliance and agreement breaking factors always exist as opposite sides of anti-competition agreements. In a market where information about goods or services is adequately provided, and customers' wide and easy access to information will be necessary for anticompetitive agreements. Because when the act of selling goods below the price agreed by the business group, it is this easily accessible information that will return to denounce the betraying business. Faced with retaliation measures of the remaining enterprises, enterprises' motivation to break anti-competitive agreements will decrease. In other words, in the context of adequate market information, the stability of anti-competition agreements is high. But the problem will become different, when the market information is incomplete or the behaviors that the business group agree to are the behaviors not related to price.

g) State sanctions
State sanctions are also one of the important factors affecting the sustainability of anti-competition agreements. When conducting competition restriction agreements, businesses always have a choice: whether to join the agreement or not. What businesses should consider when making or participating in anti-competition agreements is that the benefits of joining an agreement are attractive enough not to care about the state's ban? Even when participating in anti-competitive agreements, this factor is still the factor that has the potential to have a great impact on the sustainability of the agreement. Once the sanctions are not strong enough and especially the inconsistent enforcement of competition law will reduce the deterrence of the law. In other words, in such a context, enterprises lack incentives to abandon or stop anti-competition agreements or cooperate with state authorities in dealing with anti-competitive agreements.

h) The impact of the agreement on using prices to limit competition
From an economic point of view, the unified agreement of action between enterprises eliminates the independent action between enterprises participating in the agreement. The nature of price agreements to restrict competition is to simulate the position of the monopolist and act in the monopoly's manner. On the other hand, by combining the market power of enterprises participating in anti-competition agreements, it also helps enterprises to carry out activities that promote competition in the market. Therefore, evaluating the impact of the price agreement to limit competition must be assessed on both the anti-competitive effects and the competition-promoting effects.

i) Competition restriction effects
Anti-competitive agreements restrict price competition between participating firms. The agreements thereby distort the inherent laws of movement of the market. The two objects affected by these agreements are consumers and competing businesses that are not one of the parties to the agreement. Consumers are strongly affected by price agreements. Because they will not enjoy the good prices that businesses offer when they are under competitive pressure in the market. It can be said: decreased output, increased price is the key factor in price use agreements. To evaluate the effectiveness of market models on society, economics uses the concept of social surplus. Accordingly, the total social surplus is determined by the sum of producer surplus plus the total consumer surplus. Consumer surplus is
understood as the subtraction of the amount that the buyer is willing to pay for the goods from what they have to actually pay. It measures the benefit a buyer gets from a purchase. The surplus of production is the amount that the seller is paid after subtracting the cost of production. A producer surplus measures the benefit a seller receives from entering a market.

The monopolist will produce at a point where marginal revenue equals marginal cost. So price and output will be \( P_m \) and \( Q_m \), respectively. In a competitive market price should be equal to marginal cost. Hence price and output will be \( P \) and \( Q_c \), determined at the intersection of the average revenue curve (also the demand curve) and marginal cost curves. Consider how the social surplus changes if we change from the competitive price \( P_c \) to the monopolistic price \( P_m \) through the following diagram:

![Diagram showing consumer surplus and producer surplus in monopoly and competitive markets]

In the monopoly market, the price is high so demand will decrease. Because of the high price, the consumer will lose the consumer surplus, which is the rectangle \( A \). Users who don’t buy at \( P_m \) but only buy at \( P_c \) also lose the consumer surplus, which is triangle \( B \). The total loss of consumer surplus will be \( A + B \).

Producer, who will receive rectangular portion \( A \) from selling at a higher price but will lose triangular \( C \), the profit gained when selling quantity \( (Q_c - Q_m) \) at the price \( P_c \). Thus, the total surplus that the monopolist has will be \( A - C \). Thus we have: the social loss will be \( B + C \). This is the social loss of monopoly power. Thus, the consequences of price use agreements not only make consumers buy goods at a higher price, but more importantly, price agreements have contributed to the distribution of resources in society.

Other firms operating in the same relevant market but not one of the parties to the price use agreement (rival enterprise) are also subject to the price use agreements. As analyzed above, the tendency to consolidate and / or expand market share in the relevant market is one of the motivations for businesses to conduct anti-competitive agreements, in which the price tool is a powerful tool for achieving this. By amassing power from all firms, price agreements aimed at removing competitors from the relevant market put great pressure on firms’ normal business performance. The pressure not only stops at declining profits, but more seriously, these businesses cannot enter the market, expand their business or even be forced to leave the relevant market.

From an economic management perspective, competition restriction agreements can make the competitiveness of the economy ineffective. By limiting or eliminating competition, domestic firms have no incentive and pressure to change technology or improve production processes to optimize production costs. More seriously, if anticompetitive agreements occur in the primary fuel market, which serves as the input of other manufacturing industries, these arrangements could make the manufacturing that is affected through increased production costs. So it can be said that a competitive market can increase international competitiveness, increase employment and establish a higher standard of living.
j) Impact promotes competition

The competition-promoting effect of price agreements is seen from the economics of scale. Accordingly, the economy of scale is understood as the long-term average production cost of an enterprise will decrease as production scale increases. There are many activities that require resource coordination by businesses in the industry. It is not optimal for each enterprise to conduct activities independently, in terms of economics, in many cases. By allowing businesses to enter into coordination arrangements, new products can be created, boosting production value and thereby increasing consumer welfare. There are two factors that need to be considered when assessing the competition-promoting aspect of new product research and development agreements: Through action agreements, firms can not only add up resources, promoting the value of the law of the economics of scale, but more importantly, this activity also contributes to risk sharing for all or most of the businesses in the industry, in the case of This action failed. One of the important conditions for businesses to conduct price agreement acts is that they have to create a similarity of products. This similarity is understood as the standardization of products, unification of warranty delivery conditions, unification of payment conditions ... But also through this unification it contributes to making the market become more production standards should be transparent and unified. In terms of consumption, these factors are also positive factors.

In short, the main effect of price use agreements is fundamentally disturbing the rules of the market, consumer surplus in particular and social surplus falling. But also from the negotiation process, the agreements to use prices under certain conditions also promote competition through the unification of business conditions, standardization of products, and transparency of market information. It is these two intertwining aspects that make the control of price agreements very complicated. The theoretical requirement is how to prevent harmful effects but put in comparison with the meaning of promoting competition that the agreements bring. The competition authority must differentiate between restraint or competition promoting practices or at least both of these aspects. An overly restrictive policy prevents beneficial competition; an overly lax policy will allow competitors to suppress competition, raise prices and reduce output, thus hurting both consumers and the economy.

k) How to deal with agreements on using prices to limit competition

i. Sanctions against agreements to use prices to limit competition

Sanctions are one of the important components that make up the legal institution that controls price agreement acts to limit competition. The purpose of the sanctions is to punish violations of the competition law. Accordingly, sanctions in competition laws must create real risks to the parties when they enter into or are considering the possibility of entering into price use agreements to limit competition. To achieve the goal of punishing violations and, above all, deterring, preventing parties from entering into price agreements to limit competition, sanctions must ensure greater benefits than businesses. can be reached when entering into an agreement. Breaking competition rules is beneficial if the behavior is not punished, which is the reason why the business should act. Usually, the sanctions that apply to agreements using prices to limit competition are generally a fine. Determining the amount of the fine will depend on many factors such as the level of confidentiality of the act, the seriousness and illegal benefits that the act brings. Some countries, such as the United States and Canada, which use price agreements to limit competition can also be imprisoned. In addition to these two financial sanctions, countries may consider additional remedies. Among the sanctions, fines are the most common sanctions applied by countries. Under EU competition laws, agreements using prices to limit competition may result in a fine of up to 10% of the preceding year's total sales. However, it must be seen that fines of up to 10% of this total revenue by the Council of Europe are quite heavy and the range (0-10%) is very wide. Because of that, it is necessary to have criteria to quantify fines. On that basis, in 2006 the European Commission issued Guidance on methods for determining penalties specified in Article 23 (2) (a) of Decision No. 1/200. There are two important points in this Guide:

l) General principles

In determining penalties, the European Commission's Directive 2006 / C 210/02 needs to consider the following factors: the value of the goods or services; time of the violation; the impact of the competition restriction agreement on the market; number of years in which the parties to an anti-competition agreement. The European Union's competition laws have clear delineation of types of competition restriction agreements. Accordingly, the serious anti-competitive agreements are always subject to higher sanctions than the remaining anti-competitive agreements. Horizontal price-fixing, market-sharing and output restriction agreements are often confidential, with the nature most damaging to competition and subject to severe fines.

m) Method of determining the penalty

Based on the above general principle, in specific cases in order to make a final decision on the fine level, the Committee needs to rely on aggravating and extenuating circumstances so that it can decide the level of the fine. verb 0% - 10% of total revenue of the business.
n) Aggravating circumstances

- When a party continues or repeated a violation as soon as the National Competition Commission or Authority has found it to be in violation of Articles 81, 82: the fine can be increased by 100% for each violation;
- Refuse to cooperate with or obstruct the Commission in conducting an investigation;
- Role as leader, or initiator of violations; The Commission will also be particularly interested in any steps or stages of implementation intended to compel other firms to enter into anticompetitive agreements or to adopt retaliation measures that they seek. Applicable to other businesses for the purpose of ensuring enforcement of violations of commitments in anti-competitive agreements. However, the general rule is that even if firms participating in the agreement to use prices to limit competition fall into aggravating circumstances, the Commission must comply with the maximum fine set by the Council of Europe. Accordingly, the final penalty shall not exceed 10% of the total revenue of the preceding fiscal year of the enterprise or association that has engaged in the violation as provided for in Article 23 (2). Decision No. 1/2003.

On the other hand, for businesses serving as a senior member, initiating or having an important role in anti-competitive agreements, the way to handle it is always stricter than that of other businesses. At the same time, these subjects will normally not be entitled to the leniency program in competition laws or will enjoy the leniency, but only to a limited extent, the reduction of fines and not the total exemption. This stems from the role these firms play in initiating and operating anticompetitive agreements. According to a 2006 notice of the European Commission, enterprises that take measures to force other enterprises to enter into an anti-competitive agreement or maintain such agreement will not be exempt from penalties. It can still be considered for a fine reduction if the business meets the relevant requirements. On the same principle, under the provisions of the US corporate leniency policy, one of the conditions for an enterprise to enjoy full leniency is that the enterprise has not forced another party to participate. Illegal and explicit activity is not the leader or originator of these activities.

o) Extenuating circumstances

The European Commission will consider reducing the fine based on the previously determined base amount. According to Guideline 2006 / C 210/02, the circumstances for mitigating fines imposed on enterprises participating in anti-competitive agreements include the following:
- In the event that the business concerned provides evidence that it ceases the breach as soon as the Commission intervenes: this will not apply to the deal or covert action (especially the restrictive agreements compete);
- When the business provides evidence that violations have been committed due to negligence;
- The firm provides evidence that its participation in the infringement is substantially limited and thus demonstrates that, during the period during which it is the violator, it actually avoids the application of the infringement. This is done by applying competitive practices in the market: If merely one enterprise enters into a competition restriction agreement for a shorter period of time than others will not be considered a downside. slightly because this is already reflected in the base amount;
- The business concerned has cooperated effectively with the European Commission in excess of the requirements that the leniency policy requires enterprises to fulfill;
- When the enterprise's anti-competitive behavior has been allowed or encouraged by public authorities or law.

In addition to the aggravating and mitigating circumstances, the leniency policy is one of the factors that greatly affects the amount of fines that enterprises have to suffer. Businesses can be exempt from the full amount of fines if they cooperate with the European Commission or reduce the money under certain conditions. The Commission will apply the leniency rules in accordance with the conditions specified in the applicable notice.

p) A leniency policy on price agreements to limit competition

This is the government's policy to win immunity for members participating in anti-competition agreements to actively declare, provide documents and evidence to prove the existence of anti-competitive agreements, with competition authorities. Businesses that enjoy leniency will be exempt from part or all of the administrative or criminal sanctions they should have suffered. The leniency program has been built in the direction of combining with the design of heavy sanctions, sufficient deterrence to take effect.

The recognition of the leniency policy in the Competition Law 2018 plays a very important role because it will help quickly and accurately detect and break anti-competitive agreements. In fact, most anti-competitive agreements negatively affect the competitive environment between businesses and consumers' interests through agreements on market division, on prices, on terms of contracting. However, these types of agreements are difficult to detect due to their high secrecy. Therefore, it is not easy to discover the existence of anti-competition agreements and obtain
Price Agreements to Restrict Competition: Vision from the Affects, Sustainable Nature, Impact Assessment, and Proposals of Legal Control

Evidence related to this agreement. Therefore, the leniency policy specified in the Competition Law 2018 will create favorable conditions for entities participating in the competition restriction agreement to voluntarily declare and cooperate with authorities in the investigation process to enjoy the exemption or reduction of the fine. Because the sooner the subject declares and cooperates with the investigation, the higher the level of exemption and reduction of liability. When the subjects quickly report to enjoy the leniency policy, the illegal competition restriction agreements will soon be broken. In order to apply the leniency policy, the enterprise must be a member of an anti-competition agreement. This business must proactively approach the competition authority to confess their participation in the agreement. At the same time, this enterprise must also strive to support competition authorities in the investigation and handling of violations. As for individuals who are individuals such as managers, employees, and employees of enterprises, when participating in a prohibited competition restriction agreement, they will not be subject to leniency policy under the Competition Law. contest even if they voluntarily report this agreement behavior. Therefore, the leniency policy is seen as an effective way to help the authorities to quickly and effectively access and break the prohibited anti-competition agreements. The basic principle that competition law must prioritize is to create a risk for businesses to worry if they do not voluntarily cooperate with competition authorities. On the other hand, dominant strategy is the optimal choice of businesses. But if the benefits of complying with anti-competition agreements are too great compared to the risk of being dealt with and if businesses have time to exchange information and come up with a response plan, Image may differ. As for the de-competition agreements in practice, enterprises easily exchange information with each other when the anti-competition agreements between them are discovered. Therefore, in order for the leniency policy to take effect, it is necessary to create a race between businesses to compete for the tolerance of the law.

In Vietnam today, according to the provisions of Clause 1, Article 112 of the Vietnam Competition Law 2018: "Enterprises voluntarily report to help the National Competition Commission detect, investigate and handle anti-competitive agreements. Prohibited paintings specified in Article 12 of this Law are exempted or reduced from the fine level according to the leniency policy". Thus, the Vietnam Competition Law 2018 has determined that the beneficiaries of the leniency program are only enterprises. Enterprise here is understood as an entity conducting business for profit and is an independent entity in the market, regardless of whether it is a specific natural or legal entity, or can also be entitled to leniency according to each enterprise's own leniency policy. In order to encourage individuals to proactively report and cooperate with competition authorities in the investigation process, the general trend of countries around the world today is towards recognizing individuals as well. For those who are entitled to a leniency policy, such as in Poland, individuals holding a managerial position or former manager of the business can also apply for leniency on their own, or in Ireland, the waiver program Except for the Cartel Immunity Program in effect on January 22, 2015, which also extends immunity to individuals who are directors, employees and employees voluntarily acknowledge their participation in anti-competitive agreements. From the above evidence, it can be seen that Competition Law 2018 does not have harmony with the world trend. From a personal perspective, this is an issue to consider because if individuals related to businesses with anti-competitive agreements are prohibited but confessing as individuals, they are not entitled to the leniency policy. This raises a problem that needs to be reviewed. For the purpose of the recognition, regulation and implementation of a leniency policy, it is to facilitate the access process, detect and process dangerous anti-competitive agreement acts but if the policy is It only applies to business objects such as the Competition Law 2018 is not reasonable, and has not created incentives for individuals to actively denounce violations because even though they report, confessing, they also do not enjoy the leniency policy, which leads to the failure to promote the goal of promptly detecting dangerous anti-competitive agreements that the leniency policy aims at. This creates an undue limitation for the role of leniency program. Therefore, from the point of view of the author, in order to achieve the goal of enhancing the ability to control and handle prohibited competition restriction agreements, the Competition Law should be regulated in the direction of the beneficiaries of the drilling policy. roses must include both individuals and businesses, not only businesses that are currently subject to this policy. Accordingly, in the event that the company satisfies the conditions for the exemption, the company's directors, leaders and employees will also enjoy the leniency policy provided they sincerely acknowledge and report. His violation concurrently with the company's reporting of violation and continue to support the investigation. In case the company declares to be the subject specified in Clause 4, Article 112, does not satisfy the conditions to enjoy the exemption, directors, leaders and employees are only entitled to the exemption of the leniency policy if they voluntarily report to investigating agencies as an individual. In the event that an employee of the member company declares that the anti-competitive agreement is prohibited personally and the company comes after its employee, this exemption is only available to the employee for the company, has not met the above conditions. The author thinks that the above provisions will contribute to increasing the attractiveness of the leniency policy.
towards individuals, thereby creating incentives to encourage individuals to actively participate in denunciations and self-reporting. Confess, sincerely encourage individuals to actively participate in handling these agreements.

q) Exemptions from price agreements to limit competition

If a competition policy is too loose, violations cannot be effectively controlled. Meanwhile, if a competition policy is too strict, it will not promote the positive elements of the anti-competition agreement. In order to well balance the two aspects of punishing anti-competitive behaviors and grant the exemption to favorable anti-competitive agreements, it is necessary to define under what conditions, the agreements are This is beneficial for the competition and/or the consumer.

i. The deal’s competitive-boosting aspect

Agreements between competitors do not always cause harm to competition and to consumers. In certain cases, these arrangements can provide value that fosters competition in the marketplace. One of the positive aspects of competition promotion agreements are new product research and development (R&D) agreements. Research and development costs, especially creating breakthrough products, are often enormous. High cost and high risk are one of the biggest challenges of research and development activities. Therefore, it is ineffective for each individual enterprise to perform this activity independently from an economic perspective. That is also the reason why businesses agree to jointly carry out research and development activities. In the practice of competition law, countries always consider agreements to promote product research and development always as competition promoting agreements or will grant such agreements an exemption. Because of the nature of research and development activities are research investment activities that are risky. The key to this process is to face risks in the investment process to benefit from a new product that will be breakthrough or high return in the future. Therefore, forcing firms to allow a fourth firm to participate in the production of a new product would be unfair for businesses that had already faced the risk from the start and allowed the fourth firm to take advantage, from the risk of other businesses unjustly. In its 1998 international competition law enforcement policy guide, the US Department of Justice also emphasizes this aspect with respect to denial of transaction agreements. Accordingly, forcing the joint venture to open up opportunities for competitors to become members of the joint venture (or license research and development products of the joint venture to businesses that want to). license ownership) will reduce the motivation of research and development joint ventures. The consequence of implementing a policy that does not allow joint ventures to choose members could have the worst consequences of encouraging firms to avoid risks (without having to start initially) but they have grounds to hope to be given the right to share the results from previously ventured businesses through competition litigation.

ii. Exemption of competition restriction agreements

As analyzed above, there are anti-competition agreements that are completely harmful to competition and consumers. These are agreements that are classified by the laws of the countries into a group of particularly serious anti-competition agreements and dealt with on the principle of default violation. But there are also agreements like research and development agreements that are valuable in promoting competition. At the same time, there are also anti-competitive agreements, but under certain conditions, these agreements promote competition. Therefore, in order to create the effectiveness of controlling anti-competition agreements, in practice, countries divide the exemption criteria into three groups:

- Group 1: exemptions that apply automatically
  Exemptions are applied automatically, which means when an enterprise implements agreements, but under the provisions of the competition law it is defined as the agreements with an implicitly competitive promoting value. The competition authority does not need to consider the beneficial or anticompetitive aspects of an agreement. Under European Union competition laws, research and development agreements are automatically exempt. Accordingly: Subject to Article 81 (3) of the Agreement, the provisions of these Regulations, declare that Article 81 (1) shall not apply to agreements between two or more parties (hereinafter referred to as parties) relating to the conditions pursued by those parties: joint research and development of products or processes, and joint exploitation of the results of such research and development; jointly explore research and development results of products or processes that they have previously researched and developed; or jointly research and develop products or processes jointly, but do not include the joint exploitation of the results. This waiver shall apply in the event that such agreements (hereinafter “research and development agreements”) contain competition restrictions within the scope of Article 81 (1).

- The second group: exemption applies according to the market share threshold
  Market share is one of the important bases for assessing the market strength of one or a group of businesses in the relevant market. Under EU competition law, most exemptions use the market share threshold as a basis for consideration. According to the European Commission's Decision 330/2010 of 20 April
2010 on the application of Article 101 (3) of the TFEU on the vertical classification of agreements and acts of coordination, the The part to consider for application is not to exceed 30%: "If the share of each party to the agreement does not exceed 30% in the relevant market, the vertical agreements do not imply some kind of restriction. competition, often leading to improved production or distribution and benefits the user “.

Pursuant to the European Commission’s Decision No. 2659/2000 of 29 November 2000 on the application of Article 81 (3) of the Agreement to the Classification of Research and Development Agreements, the subject of a waiver only applies to agreements between competitors when the market share does not exceed 25% on the relevant market. Where two or more participants are competitors, the exemption under Article 1 shall apply for the period specified in paragraph 1 only if, at the time of the conclusion of the research and development agreement. Agreements on research and development of the combined market share of the parties not exceeding 25% in the relevant market for products that are likely to be improved or replaced by contractual products.

- Third group: severe competition restriction agreements

Price-fixing, market division, and bidding collusion are agreements that are classified by countries as serious agreements. Their severity is judged from the fact that they are outside for reasons (in the interests of consumers) and fail to meet one of the following conditions: the effect of promoting technical progress, technology, improve the quality of goods and services; enhancing the competitiveness of Vietnamese enterprises in international markets; promote the uniform application of quality standards and technical norms of product categories; agree on contract performance, delivery, and payment terms, but not related to price and price factors. Competition law enforcement experience has shown that these agreements seriously harm competition and do not have any basis to justify this behavior. So, in addition to applying the default violation principle to deal with, these agreements will also be implicitly not entitled to an exemption. However, it must be seen that, despite being divided into such groups, in reality, competition authorities always have the right to review or withdraw prior waivers decisions when the context is no longer relevant. . The general rule of thumb is that the application of an exemption is always conditional and always limited. The European Commission may withdraw decisions to grant an exemption if it discovers in any particular agreement, decision or joint action of firms for which the Commission has decided to grant an exemption. The previous subtraction is no longer consistent with Article 101 (3) TFEU.

V. Discussion and Conclusion

Agreements using prices to limit competition are anti-competitive agreements seriously, distorting or eliminating competition in the market, thereby greatly affecting the interests of consumers. Therefore, the issue of controlling the agreements to use prices to limit competition is always one of the important contents of the competition law in many countries. To be able to counter such agreements, it is necessary to understand the working principles and the economic nature of the behavior. In terms of economics, the unity of action will bring businesses the ability to dominate competition in the market. But economics also shows that there are also unsustainable elements in the process of agreeing to act by agreement. By exploiting unsustainable elements in price-based agreements to limit competition, competition laws in countries such as the United States and the EU have developed leniency as an effective tool to break competition restriction agreements. The fundamental core of leniency in competition law is game theory. This policy utilizes conflicts of interest between the pursuit of its own interests and the continued upholding of agreements established by the parties. Practice in other countries has confirmed, leniency policy is an effective tool to combat anti-competition agreements. Agreements using prices to limit competition will bring businesses many benefits, if these agreements are not punished by the law. This will make businesses more inclined to commit violations in the future. Therefore, sanctions imposed on price agreements to limit competition are one of the indispensable parts of the rules that control this behavior. In terms of sanctions, it is necessary to clarify the forms of sanctions that competition law can apply to acts of agreement on using prices to limit competition. At the same time, the law must provide criteria to quantify the penalty for firms playing different roles in the same group of firms participating in the price agreement to limit competition. The role of control over price agreements to limit competition will be ineffective, if the law does not take into account the positive effects of these agreements. Under certain conditions, price agreements to limit competition also play a role in promoting competition, either promoting economic development or optimizing the use of resources. Therefore, the issue of immunity is always an indispensable part of the competition laws of other countries in controlling the anti-competition agreements in general and the agreement on using prices to restrict competition in particular.

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Problems and Potentials of Rural Growth Center: A Case Study of Rammohan Bazar at Barura Upazila in Cumilla District, Bangladesh

By Md. Ziaul Haq
Jahangirnagar University

Abstract- Rural growth center can play a vital role in developing the economic condition of the rural people by acting as a prime stage for buying and selling agricultural products. This study analyzes the existing scenario and also reveal the problems of the growth center. The study market meets a great demand of the people of the surrounding area. This helps to create a various opportunity for the residence and also makes a great change to the lifestyle of the residence. For these reasons, this study also focuses on potential of the growth center. But there are also some problems. If all these problems can solve systematically, then it will be more effective for the people. To enhance the drawbacks of existing growth center management, the study attempts to recommend some measurements and guidelines for solving the problems of the growth center.

Keywords: growth center, problems, potentials, measurement.

GJMBR-G Classification: JEL Code: R00
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I. Introduction

Growth center in the village can be compared with the Central Business District (CBD) of that arena. The growth center performs as a center of economic, social, and cultural activities in the rural areas. These are the venues where people exchange their ideas with their neighbors regarding improved methods of production and marketing and also serve as the center of recreation (Das and Mondal, 2010).

In Bangladesh, agriculture is the dominant sector of the economy. About 76.67% of the population lives in rural areas and agriculture is the main occupation of rural people (BBS, 2011). The growth centers, i.e., rural markets, hats, and bazaars are the only outlets for village products. Not only farmers but also many kinds of traders and craftsmen have been engaged in trading at these growth centers. At the same time, these growth centers are also the only channel through which urban industrial products, modern agricultural inputs and other daily needs of rural life enter into the village economy. Besides, these are the only centers in the rural area where off-farm employment can be generated by through improving different modes of transportation and establishing rural and cottage industries. Above all, people’s meeting in the markets can help to motivate and grow awareness regarding health care, education, population control, self-employment, etc. can help to diffuse the knowledge and innovation. For these reasons, growth centers can play an important role in the economic development of the rural areas and at the same time; contribute significantly towards local resource mobilization (Singha, 2006).

The growth centers is facing terrible constraints in their functioning in the rural areas, which directly affects on the rural economy. Most of the rural markets in Bangladesh have developed in an ad-hoc manner. These markets are likely to have minimal facilities and in dilapidated condition. Not only does this make trade difficult but also results in unnecessary spoilage and losses. As such, facilities, infrastructure, management and operations are haphazard and rarely meet the changing needs of market users. The operation and maintenance of the rural market are not entirely transparent. At the same time, it is apparent that market management is weak and unrepresentative. Markets generate significant revenue, but little finds its way back for expenditure on maintenance and further development.

There are about 17000 rural markets throughout Bangladesh are popularly known as hat or Bazar, and 2100 growth center spread over the country (Parna, 2011). Growth center, as well as rural market needs a pucca platform, interlink road, sheds, clean water, rain and waste management facilities etc but absence of these basic requirement in most of the rural markets and growth center of Bangladesh resulting in unhygienic and inefficient marketing condition which has straight outcome in the national economy. Improvement of the rural markets, therefore, assumes great importance in the overall development of the rural economy (Rashid, 2015).

Rammohan Bazaar’s growth center is one of the biggest markets of Barura Upazila in the Cumilla District of Bangladesh. Most of the population was dependent on agriculture and fishery in the area, and this respect, the market can play a vital role in the development of economy of the locality, but the market is facing constraints in its way of functioning like a less effective market management committee, absence of proper utility and infrastructure facilities and rarely meet the changing needs of market users.

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No study has been conducted on the problems and potentials of the Rammohan Bazaar Growth Centre yet. On the other hand, the market management authority faces a big problem in developing the market systematically. In these circumstances, this article focuses on the existing scenarios, problems and potentials of this growth center. This article will help to reduce the constraints of functioning, utility services, infrastructure facilities and to meet the changing needs of market users that will help to improve the overall conditions of the market.

II. Literature Review

In the earlier studies related to the growth center we found evidence of the problems, potentials, and some possible measurements to develop the growth center. Marocchino (2009) provides practical guidelines for improving agricultural retail markets in rural areas and analyses the strategic potential of upgrading as an significant component of rural development. Mondal & Das (2010) focus on the growth center for the economic & social development of rural Bangladesh. After building the growth center, the changes in social life along with the physical development of this area have been visible. In recent years the purchasing intensity of different sectors such as agriculture, fisheries, etc. input increased very fast. Thus, the numbers of buyers and sellers, trade volume and turnover in these markets have increased, which extends local development. But these rural markets are holds various problems, which are mostly connected with infrastructure. Growth centers with better infrastructure facilities are likely to play a wider role in the rural economy & development. It has been seen that the provision of infrastructure in rural markets actually paves the way for employment generation and contributes to increasing number of traders and market turnover. Barua, Akter & Jahan (2015) emphasized on Rural-urban linkage through growth centers in Bangladesh. In this paper, the existing condition of rural-urban linkage through growth centers has been studied. Based on the study, some recommendations have been proposed, which may increase the efficiency of the marketing system to improve the rural-urban linkage.

III. Data and Methodology

The research study is conducted with a pre-design methodology. Relevant and required data are collected both from primary and secondary sources.

Secondary data, including Growth center related information such as, the profile of the Market and functions of a market management committee and information on shops, etc. These data were collected from market management committee. It also includes the Annual Budget Report. Supporting information collected from Bangladesh Bureau of Statistics and Bangladesh Economic Review. Information was also collected from several books, thesis papers, articles, journals, newspapers etc. and used the internet service to collect data.

Primary data were collected from January to February 2020. Primary data are collected by the following methods.

- Observation method

This method implies collecting information by way of the investigator’s observation, without interviewing the respondents (Kothari, 2004). This method was used to achieve the preliminary knowledge and make some basic concepts. This method is very helpful in achieving a clear idea about the existing conditions and problems of the market.

- Data collection through questionnaire and visitors count survey

A survey questionnaire is prepared for collecting Information from the Sellers, Buyers and market authority to meet the required data to fulfill the study objectives. Questionnaires were developed, encompassing all the data in data list that need to be collected. A total of 200 interviews is conducted from Sellers and Buyers separately. A focus group interview was conducted from market committee. Visitors Count Survey has been developed for counting total number of visitors comes in the market in hat day and normal day.

- Photography

Photography of a phenomenon can explain the present situation more precisely. Took photographs of different phenomena of growth center that helps to fulfill the research work. These photographs include shops conditions, solid waste storage facilities, waste collection, container, drainage, transportation, dumping site, etc.

The study was conducted through a qualitative case study design from constructivist paradigm, which implies that reality is constructed from the social world. Data were collected through purposive and snowball sampling. The report was presented through narrative, tabular and figure form and illustrative data extract to support arguments about the research questions and literature (Hossain, Ahmmed, & Chowdhury, 2019).

a) Case profile

Rammohan Bazar at Barura Upazilla in Cumilla District has selected for the study after realized the different problems of the growth center. These problems hamper the socio-economic development of the locality. Rammohan Bazaar is the biggest and most famous growth center in Barura Upazilla. It was established in the British period, and the area of the market is 6.86 acre. All kinds of vegetables, fish, rice and other commodities are supplied to the small markets from here. The location of the market is in important position. It is situated border side of Barura
Upazila (figure 01). On the other side of the growth center is Chandina Upazila. It serves the two Upazila easily. The market is easily accessible by both roads and waterways. In the north side of the growth center, is 7 km far from Dhaka- Chittagong highway.

Table 02 depicts that the total numbers of visitors in the market are 2304 person on a normal day. The highest visitor during 05-06 pm is 502 person. Visitors who come in the market in normal day. Most of the visitors lived in the close proximity of the market. A small number of female visitors also come to the market in normal day. The female visitors prefer the market visit in day. They went back to their house before the sunset for this reason female visitors usually not seen at night.

There are different kinds of institutions are situated in this market. They are one primary school, one high school, two mosques, one temple, one youth centers, one clinic/health care center, three banks, one NGO, one market committee office and one post office.
Table 1: The entry of visitors in hat day

<table>
<thead>
<tr>
<th>Period</th>
<th>Number of male visitors</th>
<th>Percentage of male visitors</th>
<th>Number of female visitors</th>
<th>Percentage of female visitors</th>
</tr>
</thead>
<tbody>
<tr>
<td>07-08 am</td>
<td>82</td>
<td>1.23</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>08-09 am</td>
<td>195</td>
<td>2.93</td>
<td>7</td>
<td>5.51</td>
</tr>
<tr>
<td>09-10 am</td>
<td>275</td>
<td>4.13</td>
<td>13</td>
<td>10.23</td>
</tr>
<tr>
<td>10-11 am</td>
<td>148</td>
<td>2.22</td>
<td>17</td>
<td>13.39</td>
</tr>
<tr>
<td>11-12</td>
<td>123</td>
<td>1.85</td>
<td>5</td>
<td>3.94</td>
</tr>
<tr>
<td>12-01 pm</td>
<td>108</td>
<td>1.63</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>01-02 pm</td>
<td>96</td>
<td>1.44</td>
<td>3</td>
<td>2.36</td>
</tr>
<tr>
<td>02-03 pm</td>
<td>203</td>
<td>3.05</td>
<td>4</td>
<td>3.14</td>
</tr>
<tr>
<td>03-04 pm</td>
<td>523</td>
<td>7.86</td>
<td>20</td>
<td>15.75</td>
</tr>
<tr>
<td>04-05 pm</td>
<td>993</td>
<td>14.92</td>
<td>31</td>
<td>24.42</td>
</tr>
<tr>
<td>05-06 pm</td>
<td>1516</td>
<td>22.77</td>
<td>18</td>
<td>14.17</td>
</tr>
<tr>
<td>06-07 pm</td>
<td>1305</td>
<td>19.60</td>
<td>7</td>
<td>5.52</td>
</tr>
<tr>
<td>07-08 pm</td>
<td>829</td>
<td>12.45</td>
<td>2</td>
<td>1.57</td>
</tr>
<tr>
<td>08-09 pm</td>
<td>207</td>
<td>3.11</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>09-10 pm</td>
<td>54</td>
<td>0.81</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>6657</td>
<td>100</td>
<td>127</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field survey, 2020

Table 2: The Entry of visitors in normal day

<table>
<thead>
<tr>
<th>Period</th>
<th>Number of male visitors</th>
<th>Percentage of male visitors</th>
<th>Number of female visitors</th>
<th>Percentage of female visitors</th>
</tr>
</thead>
<tbody>
<tr>
<td>07-08 am</td>
<td>27</td>
<td>1.21</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>08-09 am</td>
<td>61</td>
<td>2.74</td>
<td>2</td>
<td>2.5</td>
</tr>
<tr>
<td>09-10 am</td>
<td>85</td>
<td>3.82</td>
<td>5</td>
<td>6.25</td>
</tr>
<tr>
<td>10-11 am</td>
<td>74</td>
<td>3.33</td>
<td>9</td>
<td>11.25</td>
</tr>
<tr>
<td>11-12 Noon</td>
<td>41</td>
<td>1.84</td>
<td>3</td>
<td>3.75</td>
</tr>
<tr>
<td>12-01 pm</td>
<td>33</td>
<td>1.48</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>01-02 pm</td>
<td>32</td>
<td>1.44</td>
<td>1</td>
<td>1.25</td>
</tr>
<tr>
<td>02-03 pm</td>
<td>64</td>
<td>2.88</td>
<td>1</td>
<td>1.25</td>
</tr>
<tr>
<td>03-04 pm</td>
<td>174</td>
<td>7.82</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>04-05 pm</td>
<td>331</td>
<td>14.88</td>
<td>17</td>
<td>21.25</td>
</tr>
<tr>
<td>05-06 pm</td>
<td>502</td>
<td>22.57</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>06-07 pm</td>
<td>435</td>
<td>19.56</td>
<td>06</td>
<td>7.5</td>
</tr>
<tr>
<td>07-08 pm</td>
<td>276</td>
<td>12.42</td>
<td>04</td>
<td>5</td>
</tr>
<tr>
<td>08-09 pm</td>
<td>69</td>
<td>3.11</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>09-10 pm</td>
<td>20</td>
<td>0.90</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>2224</td>
<td>100</td>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field survey, 2020

IV. Problems of the Growth Center

Though the importance of growth center in rural area is immense but lack of concern of government these show limited performance than their actual potentialities.

a) Opinion about problems faced by sellers

Sellers of the market face various kinds of problems. In figure 02 shown 23 percent of respondents said that about the inadequate waste collection which is the main reason of creating negative impact of the market and 22 percent respondents said that about lack of maintenance system of the market. Only 6 percent of respondents said that politically biased ness in the time of shop renting or buying.
b) Types of problems are faced by Buyer

Buyers are also facing different kinds of problems. From the interview of buyers, it is found that 35% of respondents said that lack of a vehicle to communicate with the market and 25% of respondents also mention high transport costs for traveling the market. In figure 03 shown only 4% of respondents said that lack of products are available here for that reason they do not find their required product in the market.

c) Condition of road surface

The road within the market is not wide enough and surface cracks were found here and there, which is the leading cause of accidents in this area. Some portion of the road surface became useless. During the rainy season, water logging is a common seen.

d) Encroachment of road space

Some open spaces of the market have encroached by the powerful local people, due to lack of adequate space, goods are assembled and transected on the road side; offers for sale by the grower and traders, which lead to congestion within the market area.
e) **Loading and unloading facilities**

The study area has no specific space for loading and unloading goods. That is why operators always load or unload their goods into the market. This also creates congestion and damage to internal roads.

f) **Waste Disposal System**

The waste disposal system of Rammohan Bazar is very poor to describe. Every day the whole market generates a huge amount of organic, inorganic and kitchen market waste but there is a lack of proper management options for these wastes. At the finishing of hat days the whole market is cleaned by the sweepers. But it is not regular and adequate. Besides, due to lack of dustbins solid wastes are disposed of here and there which create odor and unpleasant to look at.

g) **Sanitation condition**

Though there are two public toilets found but their condition is very bad. Servicing is not regular. As they are in deteriorating condition, people do not want to use them. The open areas for latrine’s purpose. One latrine is situated beside the Curzon canal of the Rammohan Bazar, and other is situated inside the market. These are creating environmental pollution, odor and hamper the buyer and seller to movement in the market.

h) **Existing dumping sites of the market**

From the field survey, 2020 it is found that existing dumping sites are near to the water body and road sides. For this reason, these dumping sites are mainly liable to create water pollution, air pollution, odor, and visually not pleasant (Figure 04).

![Existing dumping sites of the market](image)

*Source: Field Survey, 2020*

**Figure 4:** Existing dumping sites of the market

i) **Dredging of Curzon canal**

Rammohan Bazar is situated beside the Curzon canal. But the present time Curzon canal is unsuitable for boat or launch movement because of unplanned embankment is constructed in the Curzon canal. Irregular dragging also obstructs the movement of the boat.

j) **Opinion about the satisfaction of existing facility provide by market authority**

Rammohan Bazar Market Management Committee tries to provide sufficient facilities for the sellers. But sometimes the authority facing a financial and technical problem for these reason they does not provide sufficient facilities. From the field survey 2020, it is found that 45 percent of sellers are not satisfied with the facility provided by market management committee.

V. **Potentials of the Growth Centre**

There are a lot of potentials in the studied growth center. This growth center is strengthening the local economy.

a) **Positive impacts of the market**

Growth center is functioning in the grass root level of rural development and it acts as an economic hub of the rural areas. Without their presence economic activities of rural area will be stopped so they have high influential characteristics in the context of the rural economy. Every single growth center and the rural market is influence he rural economy by making a large amount of market revenue.
From the field survey, 2020, it is found that 19 percent of respondents said that the Rammohan Bazar growth center is a better opportunity for selling agricultural products and 18 percent of respondents said that this growth center contributes to strengthening the rural economy. About 16% of respondents said that this growth center is an important source of employment generation. Only 15 percent of respondents said that this growth center contribute to trade transaction.

**b) Monetary transaction**

Monetary transactions is playing an important role in rural growth centers. The function of the growth center is a trade transaction. In the past, monetary transactions were very low. But day by day this transaction is increasing. Table 03 shown the monetary transaction in the growth center.

**Table 3: Monetary transaction in the growth center**

<table>
<thead>
<tr>
<th>Type</th>
<th>2006 (Year)</th>
<th>2020 (Year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hat day</td>
<td>300000 - 500000 tk</td>
<td>1000000 - 15000000 tk</td>
</tr>
<tr>
<td>Non- hat day</td>
<td>50,000 - 100000 tk</td>
<td>2500000 - 5000000 tk</td>
</tr>
</tbody>
</table>

**Source:** Rammohan Bazar Management Committee, 2020

**c) Origin of employment and earnings**

The Growth center is not only a marketplace but also generates employment that improves the condition of the rural poor. From the interview of the market authority, in 2006, the number of shops was 366 and in 2020 the increase of shops continued and reached at 564 and every shop needs two workers for run the shop properly running. After fourteen years, there was an increase of 198 shops that means the growth center creating employment for more 396 people in 198 shops. To carry a market products or take in or take off visitors from villages or main road to market area local young people mainly involve they run their vehicles or get rent from others.

**d) Distance nexus land value of growth center**

Land values of the catchment area vary depending on the inherent quality of the land for agriculture, fisheries, livestock, etc. Land value also depends on the proximity to the growth center. Significant indirect influence is observed on cropland values through capitalization of income from commodity supply by growth center. Land values are closely tied to the income-generating capacity of the land. Production of rice, vegetables, serails, shrimp, livestock, miscellaneous trees, etc. influences on significant increase of land value that is closely linked with growth center (Das and Mondal, 2010). The land value of Rammohan bazar growth center service area was closely linked with production, service facility, transportation network etc. The average land value of the service area is shown in figure 6 in respect to proximity to the growth center.
The land value decreased with the increase of distance from the growth center. The average land value was the highest within one kilometer as Tk.600000 per decimal, most of the services and facilities exist in the area and people were in good access to the growth center. Otherwise, due to lack of access to products market and other influencing services, the increasing distance decreased the land value. So it indicated that the high demand of the land of the adjacent areas of growth center resulted in social and economic development.

e) Resource mobilization

A Rural growth center is a powerful tool for domestic resource mobilization. The Growth center has very successfully mobilized locally available resources both cash and crops in the rural area. Couple with the effect of developing the growth center with the injection of investment has surfaced the growth center as model of enhancing rural economy. The Rammohan Bazar growth center is a great source of resource mobilization and the local people can trade their goods through the market.

f) Growth center: a growing point for comprehensive rural development

Rammohan Bazar growth center served visitors as a place not only for shopping/buying but also as a center for social, political, recreational activities. The visitors spend their time sharing their different ideas or views that helped for their social development and the political leaders/supporters used this place for their political purpose. The people of the community spend their time in the growth center for recreational purposes (Table 4).

Table 4: Purpose wise time spending in the growth center by visitors

<table>
<thead>
<tr>
<th>Purpose of visit</th>
<th>Time spending each visit (Hour)</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-1</td>
<td>1-2</td>
<td>2-3</td>
</tr>
<tr>
<td>Buying</td>
<td>31</td>
<td>53</td>
<td>47</td>
</tr>
<tr>
<td>Political</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Social</td>
<td>1</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Recreational</td>
<td>2</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Medical treatment</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>34</td>
<td>65</td>
<td>61</td>
</tr>
<tr>
<td>Percentage</td>
<td>17</td>
<td>32.5</td>
<td>30.5</td>
</tr>
</tbody>
</table>

Source: Field survey, 2020
g) Recreational facilities

The growth center and recreation facility hosts a multitude of services for rural people and plays both an active and passive role in the quality of life for the service area inhabitants. The market management committee operates and maintains numerous recreational facilities. The facilities include playgrounds, meeting rooms, boats, canal side, and pond. These facilities bring persons with diverse backgrounds together to enjoy special events, relax, and strengthen community relations. The growth center was also a roaming, gossiping place in the evening of the day of the catchments area people likely who were live in the inner service area. The peoples were gathering on the side of the canal for fishing. All ponds were consolidated under one aquatics unit to form a more efficient and effective aquatics organization and also act as a swimming pool of rural people (Das and Mondal, 2010).

h) Services and Facilities

Rammohan Bazar growth center provides the services/facilities for the service area population. This center also influences the alignments of roads, rural small hat/bazaar, social institutions, educational and recreational facilities within the catchment area. Table 05 illustrates the social services within or outside of the growth center. Table 05 states that social, administrative, economic and commercial services network are inter-related with the Rammohan Bazar growth center. The important features are that the most needed facilities are developed within this growth center. Some services are within 10 km from the growth center, such as the general store and police camp. Finally, the social service institution developed in relation to the growth center helped to boost up the morale of the local people. On the other hand, the volume of services of the social institution decreased outside of the catchment area. Table 05 shows that most of the service institutions were found within the growth center.

Table 5: Distance of the nearest facilities from growth center

<table>
<thead>
<tr>
<th>Types of facilities</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social and administrative services</td>
<td>In the growth center</td>
</tr>
<tr>
<td>Primary School</td>
<td>In the growth center</td>
</tr>
<tr>
<td>High School</td>
<td>In the growth center</td>
</tr>
<tr>
<td>Madrasha</td>
<td>2 km</td>
</tr>
<tr>
<td>College</td>
<td>4 km</td>
</tr>
<tr>
<td>Park</td>
<td>1 km</td>
</tr>
<tr>
<td>Playground</td>
<td>In the growth center</td>
</tr>
<tr>
<td>Community center</td>
<td>In the growth center</td>
</tr>
<tr>
<td>Club</td>
<td>In the growth center</td>
</tr>
<tr>
<td>Mosque</td>
<td>In the growth center</td>
</tr>
<tr>
<td>Youth centers &amp; libraries</td>
<td>In the growth center</td>
</tr>
<tr>
<td>Police camp</td>
<td>5 km</td>
</tr>
<tr>
<td>Clinic/Health care center</td>
<td>In the growth center</td>
</tr>
<tr>
<td>Economic and commercial services</td>
<td>In the growth center</td>
</tr>
<tr>
<td>Bank/NGO</td>
<td>In the growth center</td>
</tr>
<tr>
<td>Bus/ other vehicle stand</td>
<td>In the growth center</td>
</tr>
<tr>
<td>Nearest hat/bazaar</td>
<td>8 km</td>
</tr>
<tr>
<td>General store</td>
<td>10 km</td>
</tr>
</tbody>
</table>

Source: Field survey, 2020

VI. Recommendations

The study market meets a great demand of the people of the surrounding area. This helps to create employment opportunities to the residence and also makes a great change to the lifestyle of the residence. But there have also some problems. If all these problems can solve systematically then it will be more effective for the people. To enhance the drawbacks of existing growth center management, the following recommendations should be considered.

a) Improving the existing service facility of the market

There are many problems that are contains in the Rammohan Bazar. Proper drainage of a storm and
Improving the existing service facility of the market

- Improving maintenance system
- Drainage facility
- Sewerage facility
- Storage system
- Parking space
- Sanitation facilities
- Loading and unloading facilities

Source: Field survey, 2020

**Figure 7:** Improving the existing service facility of the market

b) **Provide better communication facilities**

Communication and transportation is the prerequisite for any development activity. The surface of the road of the market area creates problems for the movement of the people in the rainy season, it becomes muddy. The road surface should be well paved and the maintenance should be monitored and checked for better use.

c) **Providing recreational facilities**

The growth center and recreation facility hosts a multitude of services for rural people and plays both an active and passive role in the quality of life for the service area inhabitants. The market management committee can operate and maintain numerous recreational facilities. The Rammohan Bazar market authority should be provided of sitting arrangements for
authority should be provided of sitting arrangements for gossiping or gathering of people beside the Curzon canal.

d) Increasing environmental awareness

Peoples of the market come from different places. People should be encouraged to use the proposed toilet, dustbin, etc. It can be effective with the help of a loud, pestering, milking, training, workshop for growing awareness of the user of the market.

e) Provision of shed

There should have sufficient permanent and temporary provision of sheds for fish and vegetables.

f) Reducing congestion

The market management authority takes some measurements to reduce the congestion during hat day. Proper sitting arrangements for temporary shops reduce traffic congestion. Regular monitoring is needed to reduce the congestion, which is created by the local vehicle.

g) Protecting illegal encroachment

The illegal encroachment of the market area should be legally protected. The market management committee and the Union Parishad had can play a vital role here. Thus the extension of the market can be possible.

h) Provide security

The security system is an important tool for the development of the market. In the record of Bazaar committee, there are seven security guards but it is not enough for the market. According to the market management authority, extra 10 security guards should be needed for effective security system for the growth center. The security guard also should be well trained.

i) Adequate electricity supply

For the inadequate electricity supply, it becomes tough to continue the business in the evening period. From the evening period market generally open only for 3-4 hours. If the Rural electrification board becomes aware to supply electricity properly in that period then it will be very beneficial for the trader and buyer.

j) Dredging of Curzon canal

Rammohan Bazar is situated beside the Curzon canal. But the present time Curzon canal is unsuitable for boat or launch movement because of unplanned embankment constructed in the Curzon canal. Irregular dredging also obstructs the movement of boat. If the Curzon canal is suitable for the boat movement it is helpful for goods movement that will reduce the transport cost. So market authorities needs to take proper steps for dragging of Curzon canal including with government officials.

k) The systematic arrangement of electric wire in the market

The arrangement of electric wire in the Rammohan growth center is the very low height from the surface, which creates problems for a driver to move their transport particularly for the truck and also for the movers moving into the market area. Sometimes electric wire has become cut off because of the movement of a truck in the market area. The electric wire should be replaced height distance from the road surface so that trucks and visitors move the market easily.

l) Reducing traffic accident

This growth has been originated both side of ‘Rammohan to Chandina’ road where all type of transportation such as cycle, bus can move easily. But the growth center has no special arrangement to ensure user’s safety. For this reason, a separate lane for the motorized and non-motorized vehicles, available parking space and specific stoppage location for motorized and non-motorized vehicle should be provided in the market. The temporary shops should be prevented from beside the main road of the market. These will be reduced the traffic accident in the market.

m) Providing adequate space for temporary shops

In the Rammohan market area, temporary traders have to sit on the road. So this internal road totally occupied by them and visitors cannot move easily. Temporary shops should be replaced beside the bank and provide adequate space for temporary shops.

n) Solving financial problems for market maintenance and operation

Rammohan Bazar authority will face a financial crisis in the time of market maintenance and operation. From the interview it is found that 172 respondents are willing to pay more money for providing better facilities if the Rammohan Bazar authority improves the existing service quality, they will pay more fees. So, The Rammohan Bazar authority needs to take many initiatives for service quality improvement and understand the respondents that ab sufficient amount will be needed for market maintenance and operation. Finally, it will generate more revenue.

o) Providing lighting facilities

Provide the proper lighting facilities to the growth center, which will help the rural people in the nighttime and give them security and safety.

p) Suggestion to improve market waste management

Indiscrimination and way-ward disposal of wastes in and around it deteriorates the working environment of the market. Providing waste disposal provision at proximity of the market and ensuring regular cleaning of these provisions. For alleviating this situation, respondents suggest different options for
effectively manage market waste management. In figure 08, about 29 percent of respondents said that adequate numbers of dustbin or container should be provided for waste disposal. About 29 percent of respondents said that an appropriate location should be identifying for waste disposal. 15 percent of respondents said that an appropriate location should be identifying for waste disposal. 15 percent of respondents said that an appropriate location should be identifying for waste disposal. 15 percent of respondents said that an appropriate location should be identifying for waste disposal. 15 percent of respondents said that an appropriate location should be identifying for waste disposal. 15 percent of respondents said that an appropriate location should be identifying for waste disposal.

q) Strong configuration of a market committee

A Strong configuration of the market committee is very essential to operate and manage the market. To make a responsible and effective market committee, the following structure of the committee can be useful.

- Thana Nirbahi Officer
- Thana Engineer
- Union Chairman
- Two local elites
- Teacher of School/college
- Two government officers

Responsibilities of the market committee could be:

- Preparation of Market development plan and implementation.
- Toll collection, supervision and control.
- Maintenance of law and order.
- Hat maintenance.
- Land use control.
- Review meeting.
- Informing the district commission regarding the management of the market.

![Suggestion to improve market waste management](image)

Source: Field survey, 2020

**Figure 8: Suggestion to improve market waste management**

**VII. Conclusion**

Rural growth center plays a vital role in the socio-economic development of the rural area in Bangladesh. The provision of infrastructure facilities creates a favorable environment for economic uplift. The infrastructure element of the growth center, which can be termed as nerve center of rural economy. It has been seen that the provision of rural markets paves the way to employment generation and contributes to the increasing number of traders and customers, market lease rate and market turnover. All this has a significant role in the rural economy. This study focuses on the problems of existing conditions of growth center and potentials of the rural development by the improvement of the market conditions. Furthermore, the study will attempt to recommend some long-term measures and guidelines for solving the identified problems of the market.

The growth centers must be integrated with rural development policies by promoting agro-processing industries, large investment from local or outer of its vicinity, provided necessary facilities and services to smooth its, function. Government has to play a significant role in the improvement of market facilities for better comfort. It is hoped that authority would realize the vital role of the markets in the society and at the same time; it should take necessary steps for the improvement of the market to enhance the rural economy as well as the national economy.

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Impact of Business Intelligence on Business Performance of Food Delivery Platforms in Sri Lanka

By Kishore Shanmugam, Kabilesh Jeganathan, Mohamed Saif Mohamed Basheer, Mohamed Aakib Mohamed Firthows & Anuradha Jayakody

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Keywords: business intelligence, business performance, COVID-19, food delivery platform.

GJMBR-G Classification: JEL Code: M00

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Keywords: business intelligence, business performance, COVID-19, food delivery platform.

I. Introduction

The food delivery industry is a booming industry with an enormous business opportunity for both third party FDP, and restaurant chain, which have a separate delivery system with potential market size of $210 billion in the US, and the Food delivery business like Eat street and Grub hub offers delivery for the many types of establishments. There, and are startups like Blue apron uses consumer preference to sell fresh food which doesn’t require more preparation for delivery [1]. This study will investigate the impact of Business Intelligence (BI) on the business performance (BP) of the Food Delivery Platform (FDP) in Sri Lanka. Because BI is becoming an integral part of many companies, especially in FDPs’ since many data are being received and it can be used properly with the help of BI. Also, this study will help to understand the impact of external environmental factors, in terms of the customers’ perception towards the business and Covid-19 outbreak, and how that impacted the BP of these delivery platforms.

These delivery services have started to penetrate all forms of businesses, from small local restaurants to large international restaurants. Customers’ needs are vast, and their lifestyle keeps changing, to satisfy and cope with these changes, all these different kinds of restaurants have to be covered. These delivery businesses will have to compete in the market within each other’s in terms of delivery time, availability, service quality, and other factors that will affect their customers. Online food delivery market penetration stroked at 30% in 2016 and expected to be growing further as the market started to mature, reaching 65% per year [2].

When customers use the applications to order food, their data, which generated daily is massive and could be used in their respective delivery business to give them a competitive advantage. With BI, these businesses could give personalized services to each customer in the form of offers for their favorite restaurants, reduction of delivery charges, and so on, to retain them. Worldwide BI total revenue is said to drastically increase to $40+ billion by this year (2020). BI and its analytics will be important in supporting the rapid growth of data outside and within the organization as well [3].

a) Problem Statement

There are several online FDPs’ existing in Sri Lanka that are using BI in their organization, and the impact that the BI has on BP on these FDPs’ remains unknown. Uber EATS have delivered three million orders to Sri Lankans and single-handedly dominated the market from 2018 to 2019 [4]. All the previous research was done in BI and FDP separately, despite having a complete understanding of the data and BI tools & methods used to provide insights and solutions for these platforms is vital to sustain their market share and increasing revenue.

During this Global pandemic situation of the Covid-19 virus outbreak, Uber and Pick Me both the taxi services and FDP have been operating under government regulations. [5]. Uber EATS and Pick Me food have also partnered with other businesses to distribute essential products such as Groceries, pharmaceutical products, and fresh vegetables & fruits.

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b) Research Objectives  

a. Main Objective  
- To determine if BI has an impact on BP of FDPs’ in Sri Lanka.  
This objective will help to find how does the BI has an impact on FDPs’ BP and how it helps the industry’s betterment.

b. Sub Objective  
- To understand the impact of Strategic planning, Organizational Support, Knowledge Management, and Technological Innovation on BP.  
- To identify the BI methods and tools is used by FDPs’ in Sri Lanka.  
- To identify the effect that external environmental factors have on BP.

c) Significance of the study  

The significance of the study can be the academic and practical implications for this study. As per the academic implication for this study, the study can be used for future research for a better understanding of how Business intelligence can be used to improve organizational performance and can be used as literature for the application of the food delivery platform.

Whereas per the practical implication of the study is where this study can be used by the food delivery platform where the organization can use this to improve their BI Framework and helps the food delivery platforms without BI to implement BI System and help an entrepreneur who is planning start business in Food delivery industry for BI implementation in terms of Business intelligence implementation in the organization.

II. Literature Review & Conceptual Framework

The literature review for this research has been divided into three different sections, such as BI, BP & External environment factors (customer perspective on FDP & impact of a global pandemic). The past literature was collected on these areas to get a better understanding of the topics.

a) Business Intelligence  

A study on the implementation of BI for the Malaysian Halal Food Manufacturing Industry for strategic performance management was able to conclude and understand the level of influence of critical success factors that can improve or limit the adoption of BI and organization financial performance [6]. Another study investigating De Lones and Mclean’s Information systems success model on 12 public hospitals and the success factors that influence the BI stated that all the relationships such as information quality and system quality are positively related to user satisfaction. This research shows that this model has a good fit and a predictive value [7]. A study on BI solution for Food Industry to reduce the inventory level of Pakistan National Food concluded that BI system could be used to analyze data using effective dashboard more efficiently, as well as big data, can be handled with implementing data warehouse where data warehouse gives the flexibility to accommodate a large amount of data [8]. Another study conducted to understand how the implementation of BI and analytics will help the organization to improve its BP, proved that there is a positive relationship between the implementation of BI and Analytics in an organization to improve the BP. The firms, which are equipped with the ability to analyze web and social media data, have a higher relationship BP and BI where the companies who collect data from sensors are outperforming those who are not collecting [9]. A study to understand what are the critical success factors that influence the BI in the Swedish market, stated that the findings show that all the respondents have a positive outlook regarding BI, a suitable level of self-service BI to the maximum varies depending on the respondents. BI suppliers promote a high level of self-services to use the full potential of; BI users and BI specialists/consultants want a more modest method, where the BI is managed and used are not allowed the alter the business data as they need [10].

A study understanding the success factors that influence the BI in the pharmaceutical companies of Pakistan stated that BI has a significant relationship with marketing performance. The four main success factors, strategic planning, knowledge management, technological innovation, and organizational support, have an impact on BI success factors. The success of BI has a significant impact on market performance [11]. A study with the objectives of creating a conceptualization and discussing the dynamic capability of BI and designing a framework for BI concluded that the survey shows that the BI is considered as a tool or technology, which used to gather and analyze data and does not occur to be the only main factor in deciding on an organization. BI will also improve organizational performance and help to come up with new business ideas and creating a new business procedure for business operations. The organization should focus on creating a strategic alignment of BI and Business strategy of the organization [12]. Research conducted on BI application in Healthcare delivery in the USA proved that healthcare providers in a competitive market need a strong BI foundation to correlate, analyze, and visualize operational & financial data. The BI Tools help healthcare providers to manage population health since nowadays. Technology plays a vital role in the healthcare industry [13].
b) Business Performance

A study conducted on the influence of BI capacity, network learning, and innovativeness on start-up performances concluded that there is a positive effect among the variables, namely network learning, innovativeness and performances have an impact on BI capacities. Also, in the start-up's perspective, some attention should be taken on BI [14]. Research on Marketing, Innovation, and BP of women entrepreneurs in the fashion industry, stated that that intelligent generation and innovation has a positive relationship between a firm’s performances [15]. A study was conducted how the marketing orientation effects on BP on the Foodstuff industry, stated that marketing orientation is efficient creation of information, disseminating information & the level of responsiveness to reach through information. These three factors are always related to customer, market & competition [16]. Research on online retail store performance measurement was able to conclude that that information available, quality of the product, and product delivery are the factors most important in measuring the performance of the online retail store [17]. A study on the Impact of marketing strategy on BP of Small and Medium Enterprises (SMEs) stated that marketing strategies were significantly independent and joint predictor of BP, despite that promotion has no positive effect on BP. Thus, the research confirms that combining different strategies provide functional benefits to consumers [18]. A study on BP for SMEs resulted in showing that subjective evaluations are important alternatives to objective measurement [19]. A study to understand the relationship that Employee satisfaction and customer satisfaction on financial performance concluded that there is a significant positive relationship between customer satisfaction and financial performance. Aslo it indicated that there is an indirect relationship between Organizational financial performance and employee satisfaction [20].

c) External Environmental Factors

i. Customer Perspective on Food Delivery Platform

Research on consumer behavior towards the utilization of online FDPs’ stated that there is a huge demand for mobile food delivery application in the future. Also, it saves consumers time, and they would be able to have a wide range of selection among the available restaurants and most importantly customer has had the satisfaction of able to access the mobile technology and being informative. Thus, these developments are modernizing food delivery with a faster availability of food to their doorsteps [21]. Similar research on the impact of online food delivery apps on the restaurant business concluded that customer comfort and digital systems combined, helping FDPs’ to sustain and develop. The organization that knows about colossal potential for development will endure by keeping their offer and their image dynamic in customers’ minds through having delivered food and foodstuffs to their doorstep with well prepared to eat and less cost [22]. A study on evaluative collaborative consumption of food delivery services through web mining techniques stated that online FDP can be improved and could understand the different cultural existence in food preference and customers’ level of satisfaction by analyzing customers’ comments with text mining techniques [23]. Research on the influence of food delivery apps on the operations of the restaurant business concluded that there is an increase in sales when there is an increase in the usage of delivery apps and that restaurants should implement proper inventory management to deal with the demand [24]. An empirical study on consumer perception towards Online Food Ordering and Delivery Services concluded that Zomato (Online food delivery portal) stands top with gained most positive opinion among other service providers by their better on-time delivery and better discounts [25].

ii. Impact of Global Pandemic (Covid-19)

A study conducted on understanding the impact of Covid-19 on the expectation and outcomes of small businesses concluded that those small business firms are currently holding on to the small amount of money, which force them to take drastic measure on their business to cut expenses, to take a loan, which can increase their debt, and in the worst case to declare them bankrupted [26]. A study on the employees’ wellbeing and adjustments in the current era of Covid-19 stated that that the impact that Covid-19 might have on the human resource will not be short-lived. The world can focus on forward-thinking and building based on assumption that we are currently not facing a single event, but this might create a new chain of events that leads to a new reality and new opportunities to which the scholars and practitioners should be attentive [27]. A study on understanding the macroeconomic scenario in Morocco, conclude that the overall result shows that economic condition will deteriorate, but socio-economic relation become closer [28]. A study on an emerging Business model in the Aviation industry Ultra Long Haul (ULH) in Covid-19 Outbreak stated that ULH is become more popular prior Covid era, and now, with the Covid outbreak has accelerated the use and acceptance of the point-to-point ULH approach. [29]. A study on how to manage the uncertain situation in terms of international business perspective in this global pandemic situation concluded that globalization changes how the world conducts business when a problem is faced for instances such as SARS, Ebola, and wars, etc. The Covid-19 crisis helps to review the organization's reactions and the organization's consequences; there are implications for international business managers and suggest directions for future research [30].
d) Conceptual Framework

The Conceptualization framework has been designed for the research where the BP for the organization is considered as a Dependent variable, and BI is considered as an Independent variable. External environmental factors are considered as a moderator variable. This conceptual framework will help to understand how does BI impact BP of FDP and how does the external environment will impact the BP while other factors remain the same.

III. Data and Methodology

The current study is pursuing a deductive research approach or also known as a top-down approach, as this study is developed on rigorous literature review, and based on them, a hypothesis was developed, which will be answered after the data had been analyzed.

a) Questionnaire 1 – Employees’ Perspective Questionnaire

In selecting the sample for the FDP, the convenience-sampling method was decided to be used, which is a non-probability sampling method, and the sample will be Uber EATS and Pick Me Food. For the employee perspective survey, the sample size is based on the number of employees available in the BI department, and received 178 responses for the questionnaire.

b) Questionnaire 2 – Interview Questionnaire

To understand how the FDP overcame the global pandemic, it was analyzed based on the responses given by the head of the BI department of Uber EATS and Pick Me Food. The answers for this will be gathered through an interview approach based on the questions developed. Also, the information gathered has indicated the importance of BI tools and methods that have been used by organizations.

c) Questionnaire 3 – Customer Perspective Questionnaire

Customers’ perspective survey was conducted on the general population to understand how customer perspective impacts BP of FDP, and simple random sampling was used. And the acceptable responses received for this was 379.

This flow chart helps reviewers to easily understand each step, which is going to be done under the methodology process in this study.
After all the data are gathered, it will be analyzed using Statistical Package for Social Sciences (SPSS), and the hypothesis will be tested using the statistical significance of variance, correlation, and regression. For this study, Quantitative analysis will be made where descriptive statistics, Correlation analysis, Regression analysis, one paired T-test analysis & validity testing.

**IV. RESULTS AND DISCUSSION**

a) Regression Analysis

The regression model is used to check the significant relationship between hypotheses. The equation that is used to check the regression between hypotheses is stated as below.

**Equation 1: Regression Equation**

\[
1. \quad Y_{BI} = a_1 + (\beta_1 X_{SP} + \beta_2 X_{OS} + \beta_3 X_{KM} + \beta_4 X_{TI}) \\
2. \quad Y_{BP} = a_5 + \beta_5 X_{BI}
\]

Where, 
- \(Y_{BI}\) = Business Intelligence, \(\beta_1 X_{SP}\) = Strategic Planning, \(\beta_2 X_{OS}\) = Organizational Support, \(\beta_3 X_{KM}\) = Knowledge Management, \(\beta_4 X_{TI}\) = Technological Innovation.
- \(Y_{BP}\) = Business Performance, \(\beta_5 X_{BI}\) = Business Intelligence.

Where \(X_{SP}, X_{OS}, X_{KM}, X_{TI}\) are independent variables and a dependent variable is \(Y_{BI}\) = BI in equation one, and \(Y_{BP} = BP\) and \(X_{BI}\) = BI are dependent and independent variables respectively in equation two. Also, \(a = \) constant (\(a_1 = \) constant values of independent variable 1,2,3,4 respectively) and \(\beta = \) coefficient of independent variable.

The first four models show the relationship between the success factor of BI (\(X_{SP}, X_{OS}, X_{KM}, X_{TI}\) as independent variable) and BI (\(Y_{BI}\) as dependent variable) the fifth model shows the relationship between BI (\(X_{BI}\) as independent variable) and BP (\(Y_{BP}\) as dependent variable).

A model table has been drawn via SPSS output (regression) to check the relationship of each success factor as per the equation, which is stated above. That model table has five sub-model for the equation showed Equation 1.
Table 1: Regression Model for Employee Perspective Survey

<table>
<thead>
<tr>
<th>Model</th>
<th>Constant Value</th>
<th>B</th>
<th>P- Value</th>
<th>Adjusted R-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>1.063</td>
<td>0.696</td>
<td>0.000</td>
<td>0.491</td>
</tr>
<tr>
<td>Model 2</td>
<td>1.359</td>
<td>0.608</td>
<td>0.000</td>
<td>0.403</td>
</tr>
<tr>
<td>Model 3</td>
<td>1.066</td>
<td>0.698</td>
<td>0.000</td>
<td>0.488</td>
</tr>
<tr>
<td>Model 4</td>
<td>0.965</td>
<td>0.710</td>
<td>0.000</td>
<td>0.513</td>
</tr>
<tr>
<td>Model 5</td>
<td>0.913</td>
<td>0.749</td>
<td>0.000</td>
<td>0.542</td>
</tr>
</tbody>
</table>

All five models have a lower P-Value than .05. Where businesses are considered as social science. Based on the regression, the Adjusted R-Square value of all the models is greater than 30%. Thus, it is concluded that all the five models are reliable since a greater 80% P-value shows the significant relationship between the success factor and BI. Also, the result shows that each success factor has an impact on BI separately as well as collectively.

b) To understand the impact of success factors of BI to BP
i. Strategic Planning impact on BP

Table 2: Strategic Planning to BP

<table>
<thead>
<tr>
<th></th>
<th>B-Coefficient</th>
<th>Standard Error</th>
<th>T-Ratio</th>
<th>P-value</th>
<th>Adjusted R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.030</td>
<td>0.187</td>
<td>5.507</td>
<td>0.000</td>
<td>0.509</td>
</tr>
<tr>
<td>Strategic Planning</td>
<td>0.718</td>
<td>0.053</td>
<td>13.626</td>
<td>0.000</td>
<td>0.509</td>
</tr>
</tbody>
</table>

Independent Variable = Strategic Planning, Dependent Variable = BP

The strategic planning coefficient is statistically significant, which shows that there is a strong relationship between strategic planning and BP. The adjusted R-square value is 0.509, which shows 51% of variation between BP and strategic planning done by the organization.

ii. Organizational Support impact on BP

Table 3: Organizational support to BP

<table>
<thead>
<tr>
<th></th>
<th>B-Coefficient</th>
<th>Standard Error</th>
<th>T-Ratio</th>
<th>P-value</th>
<th>Adjusted R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.407</td>
<td>0.202</td>
<td>6.964</td>
<td>0.000</td>
<td>0.390</td>
</tr>
<tr>
<td>Organizational Support</td>
<td>0.607</td>
<td>0.057</td>
<td>10.723</td>
<td>0.000</td>
<td>0.390</td>
</tr>
</tbody>
</table>

Independent Variable = Organizational Support, Dependent Variable = BP

The Organizational Support coefficient is statistically significant, which shows that there is a strong relationship between Organizational Support and BP. The adjusted R-square value is 0.390, which shows 39% of variation between BP and Organizational Support.
iii. Knowledge Management impact on BP

<table>
<thead>
<tr>
<th>Table 4: Knowledge Management to BP</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B-Coefficient</strong></td>
</tr>
<tr>
<td>-------------------</td>
</tr>
<tr>
<td>Constant</td>
</tr>
<tr>
<td>Knowledge Management</td>
</tr>
</tbody>
</table>

The Knowledge Management coefficient is statistically significant, which shows that there is a strong relationship between Knowledge Management and BP. The adjusted R-square value is 0.422, which shows 42.2% of variation between BP and Knowledge Management in the organization.

iv. Technology impact on BP

<table>
<thead>
<tr>
<th>Table 5: Technology Impact on BP</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B-Coefficient</strong></td>
</tr>
<tr>
<td>-------------------</td>
</tr>
<tr>
<td>Constant</td>
</tr>
<tr>
<td>Technological Innovation</td>
</tr>
</tbody>
</table>

Independent Variable = Technology, Dependent Variable = BP

The Technology coefficient is statistically significant, which shows that there is a strong relationship between Technology and BP. The adjusted R-square value is 0.491, which shows 49.1% of variation between BP and Technology in the organization.

Hypothesis related testing for the above mentioned is stated below in the table.

<table>
<thead>
<tr>
<th>Table 6: Hypothesis Testing Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hypothesis</strong></td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
</tbody>
</table>

Since the success factors of BI show a significant relationship between BP, this also proves that BI has a significant relationship with BP. This statement can be statistically proven using this table.
v. **BI Impact on BP**

**Table 7: BI to BP**

<table>
<thead>
<tr>
<th></th>
<th>B– Coefficient</th>
<th>Standard Error</th>
<th>T– Ratio</th>
<th>P– value</th>
<th>Adjusted R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.913</td>
<td>0.183</td>
<td>4.977</td>
<td>0.000</td>
<td>0.542</td>
</tr>
<tr>
<td>BI</td>
<td>0.749</td>
<td>0.051</td>
<td>14.554</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

Independent Variable = BI, Dependent Variable = BP

The table shows that there is a significant relationship between BI and BP. The BI coefficient is statistically significant, which shows that there is a strong relationship between BI and BP. The adjusted R-square value is 0.542, which shows 54.2% of variation between BP and BI in the organization.

The Regression Equation between BI and BP is as follows,

**Equation 2:** Regression Equation for BI vs. BP

\[
Y_{BP} = 0.913 + 0.749X_{BI}
\]

Equation 2 shows that the coefficient value shows that when BI increases by one unit, the BP will increase by 0.749 units. When no BI is available in the FDP, the BP will be 0.913 units.

**vi. Success Factor of BI on BP**

**Table 8: Success Factor of BI on BP**

<table>
<thead>
<tr>
<th></th>
<th>B– Coefficient</th>
<th>Standard Error</th>
<th>T– Ratio</th>
<th>P– value</th>
<th>Adjusted R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.434</td>
<td>0.193</td>
<td>2.249</td>
<td>0.026</td>
<td></td>
</tr>
<tr>
<td>Strategic Planning</td>
<td>0.278</td>
<td>0.083</td>
<td>3.335</td>
<td>0.001</td>
<td>0.598</td>
</tr>
<tr>
<td>Organizational Support</td>
<td>0.152</td>
<td>0.066</td>
<td>2.300</td>
<td>0.023</td>
<td></td>
</tr>
<tr>
<td>Knowledge Management</td>
<td>0.166</td>
<td>0.073</td>
<td>2.271</td>
<td>0.024</td>
<td></td>
</tr>
<tr>
<td>Technological Innovation</td>
<td>0.290</td>
<td>0.076</td>
<td>3.835</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

Independent Variable = Strategic Planning, Organizational Support, Knowledge Management, Technological Innovation
Dependent Variable = BI

The table shows that there is a significant relationship between the Success Factors of BI and BP. Success Factors of the BI coefficient is statistically significant, which shows that there is a strong relationship between BI and BP. The adjusted R-square value is 0.598, which shows 59.8% of variation between BP and BI in the organization.

The Regression Equation for between Success Factors of BI and BP is as follows,

**Equation 3:** Regression Equation for Success factors of BI vs. BP

\[
Y_{BP} = 0.434 + 0.278X_{SP} + 0.152X_{OS} + 0.166X_{KM} + 0.290X_{TI}
\]

c) **To identify the BI methods and tools is used by FDPs’ in Sri Lanka**

The interview responders say that the BI Deployment they have in their respective organization is an enterprise-wide BI deployment based on corporate IT. They have an integrated BI system that can be used by every employee in the organization. Pick Me Foods uses open-source BI Tools such as Modo, whereas Uber EATS use in-house BI Tools such as Uber’s...
Business intelligence is applied in the organization for several business operations detecting fraud using complaint data, visualization, making new business promotion and location intelligence, etc., which help improve organizational performance. These organizations use the data for predicting time for preparation and delivery, natural language processing (NLP), Text mining, recommending restaurant/ foods to a customer, forecasting demand and supply for each restaurant, optimizing spending patterns of the customer for giving better offers and dynamic pricing, etc. for instance,

1. **Customer Rating system** – This rating system is used by the FDP to create a trust in customers on the quality of the service that is delivered by the rider as well as the organization, and the rating on the customer will help the organization customer relationship management (CRM) to segment the customers.

2. **Surge pricing**– FDP uses this pricing when they must deliver the Food to the customers in distant locations or order, made in an off-peak hour, where the cost for delivery will be increased. FDP has developed their algorithms to predict the amount that they can charge for the delivery. This system will help the rider to make more sustainable profits in their delivery services as per requirements.

d) To identify the effect that external environmental factors have on BP

i. **Customer Perception**

From the 400 responses received for the questionnaire, 21 incomplete responses were there; therefore, 379 of the responses were used for the analysis purposes. The survey’s demographic question found a relatively higher number of males (54.6%) than females (45.4%). Most of the respondents were between the age group of 20-25(49.9%) and 26-30(38.8%).

Frequently used FDP Uber EATS had 73.1%, and Pick Me Foods had only 26.9%. This Customer Perception comparison shows as follows,

<table>
<thead>
<tr>
<th><strong>Table 9</strong>: Customer Perception Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Customer perception</strong></td>
</tr>
<tr>
<td>I feel This application is very easy to use</td>
</tr>
<tr>
<td>I feel I can control the decision making</td>
</tr>
<tr>
<td>I feel this application is reliable to use</td>
</tr>
<tr>
<td>I feel this application is user friendly</td>
</tr>
<tr>
<td>I feel I am provided with the required information when I make a purchase</td>
</tr>
<tr>
<td>I feel that this application provides quicker delivery</td>
</tr>
<tr>
<td>I feel that this application provides better and frequent promotions</td>
</tr>
<tr>
<td>I feel that this application covers a variety of cuisines</td>
</tr>
<tr>
<td>I feel that this application has a high amount of service providers</td>
</tr>
<tr>
<td>I feel that this application has service providers with good attitudes</td>
</tr>
<tr>
<td>I feel that this application has highly accurate location trackers</td>
</tr>
</tbody>
</table>

To test hypothesis five, Average Sales and Customer Perception on FDP were tested, the average sales values are used for Testing Hypotheses. For this testing, a Non-parametric test (Independent Samples Kruskal-Wallis test) is used. The reason for using this non-parametric test is the data is not normally distributed, and the variable used is nominal and ordinal variables.
There is no relationship between external environmental factors and BP.

There is a significant relationship between external environmental factors and BP.

And the result showed that the significance value of the test is less than 0.05, thereby accepting the alternate hypothesis stating there is a significant relationship between external environmental factors and BP.

e) How are the FDP utilizing BI to face an uncertain situation like the global pandemic (Covid-19)?

The Current Global Pandemic is seen as an opportunity as well as a threat for the FDP since the disease spread at a higher rate, which created a situation of lockdown where many essential businesses were shut down. For example, groceries and medicine were closed to reduce the spreading virus around the country. The FDPs saw a business opportunity to fill the gap of supplying essential products to the consumers by collaborating with suppliers to deliver the products online. The organization must also have to face problems that are related to delivery where the customer feared to order food from FDP since the customers feared how the food is produced and delivered to them.

Pick Me Foods Interview respondent also stated that the real challenge that they faced was how to gain the confidence of customer regarding the delivery of food, and once the FDP are relieved from the curfew, they made sure to comply with the rules and regulation to ensure the safety of the riders and the customers.

V. Conclusion

The findings of this study show the success factors of BI has a significant impact on the BP of FDPs’ which is seen evident in the results from the employee perspective survey where Strategic planning, Organizational Support, Knowledge management, Technological innovation are statistically significant for the BP of FDP since the p-value of each analysis is less than 0.05.

The interview respondents feel that the current national and international climate that has been created due to the spread of Covid-19 at a higher rate has created an opportunity in terms of delivering essential products through their application as well as a threat for FDPs’ where the organization have to build trust among their customers both the restaurants and consumers their delivery process to prevent them getting infected by disease on the point of contact through delivery. The FDPs’ delivery riders were made to adhere to the government regulation on testing, non-contactless delivery to bring back the trust in the organization.

In terms of limitation faced, Covid-19 pandemic impacted the data collection process, and the data collected from the organization is sensitive for the organization were reluctant to provide more information regarding the study and unable find literature for external environmental factor – Covid-19 was another limitation since the global pandemic is still happening.

The future study opportunities that can be seen through this study, the conceptual framework can be applied to other industries to understand how BI can impact the BP of the business organizations in a specific industry. Future research can also be conducted on how FDPs’ in different countries perform and how the other external environmental factors (PESTLE) influence business performance.

The future study can also be conducted on methods that are used in the tech companies, for instance, technologies like Location intelligence, sentiment analysis, etc, and how they use big data to gain insights from these methods. This study can add value by filling the knowledge gaps in the method applied in the new business world in this current industrial revolution of Industrial revolution 4.0, where future studies can include objective measures in numerical methods to evaluate the BP of FDP. Also, in FDPs context, the term BI is no longer considered since it is evolving towards Data Science and Artificial Intelligence (AI) as future research can be done including these technical evolvements.

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Preferred Author Guidelines

We accept the manuscript submissions in any standard (generic) format.

We typeset manuscripts using advanced typesetting tools like Adobe In Design, CorelDraw, TeXnicCenter, and TeXStudio. We usually recommend authors submit their research using any standard format they are comfortable with, and let Global Journals do the rest.

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Acknowledgments

Contributors to the research other than authors credited should be mentioned in Acknowledgments. The source of funding for the research can be included. Suppliers of resources may be mentioned along with their addresses.

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Authors can submit papers and articles in an acceptable file format: MS Word (doc, docx), LaTeX (.tex, .zip or .rar including all of your files), Adobe PDF (.pdf), rich text format (.rtf), simple text document (.txt), Open Document Text (.odt), and Apple Pages (.pages). Our professional layout editors will format the entire paper according to our official guidelines. This is one of the highlights of publishing with Global Journals—authors should not be concerned about the formatting of their paper. Global Journals accepts articles and manuscripts in every major language, be it Spanish, Chinese, Japanese, Portuguese, Russian, French, German, Dutch, Italian, Greek, or any other national language, but the title, subtitle, and abstract should be in English. This will facilitate indexing and the pre-peer review process.

The following is the official style and template developed for publication of a research paper. Authors are not required to follow this style during the submission of the paper. It is just for reference purposes.
**Manuscript Style Instruction (Optional)**

- Microsoft Word Document Setting Instructions.
- Font type of all text should be Swis721 Lt BT.
- Page size: 8.27” x 11””, left margin: 0.65, right margin: 0.65, bottom margin: 0.75.
- Paper title should be in one column of font size 24.
- Author name in font size of 11 in one column.
- Abstract: font size 9 with the word “Abstract” in bold italics.
- Main text: font size 10 with two justified columns.
- Two columns with equal column width of 3.38 and spacing of 0.2.
- First character must be three lines drop-capped.
- The paragraph before spacing of 1 pt and after of 0 pt.
- Line spacing of 1 pt.
- Large images must be in one column.
- The names of first main headings (Heading 1) must be in Roman font, capital letters, and font size of 10.
- The names of second main headings (Heading 2) must not include numbers and must be in italics with a font size of 10.

**Structure and Format of Manuscript**

The recommended size of an original research paper is under 15,000 words and review papers under 7,000 words. Research articles should be less than 10,000 words. Research papers are usually longer than review papers. Review papers are reports of significant research (typically less than 7,000 words, including tables, figures, and references)

A research paper must include:

a) A title which should be relevant to the theme of the paper.

b) A summary, known as an abstract (less than 150 words), containing the major results and conclusions.

c) Up to 10 keywords that precisely identify the paper’s subject, purpose, and focus.

d) An introduction, giving fundamental background objectives.

e) Resources and techniques with sufficient complete experimental details (wherever possible by reference) to permit repetition, sources of information must be given, and numerical methods must be specified by reference.

f) Results which should be presented concisely by well-designed tables and figures.

g) Suitable statistical data should also be given.

h) All data must have been gathered with attention to numerical detail in the planning stage.

Design has been recognized to be essential to experiments for a considerable time, and the editor has decided that any paper that appears not to have adequate numerical treatments of the data will be returned unrefereed.

i) Discussion should cover implications and consequences and not just recapitulate the results; conclusions should also be summarized.

j) There should be brief acknowledgments.

k) There ought to be references in the conventional format. Global Journals recommends APA format.

Authors should carefully consider the preparation of papers to ensure that they communicate effectively. Papers are much more likely to be accepted if they are carefully designed and laid out, contain few or no errors, are summarizing, and follow instructions. They will also be published with much fewer delays than those that require much technical and editorial correction.

The Editorial Board reserves the right to make literary corrections and suggestions to improve brevity.
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It is necessary that authors take care in submitting a manuscript that is written in simple language and adheres to published guidelines.

All manuscripts submitted to Global Journals should include:

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The title page must carry an informative title that reflects the content, a running title (less than 45 characters together with spaces), names of the authors and co-authors, and the place(s) where the work was carried out.

**Author details**

The full postal address of any related author(s) must be specified.

**Abstract**

The abstract is the foundation of the research paper. It should be clear and concise and must contain the objective of the paper and inferences drawn. It is advised to not include big mathematical equations or complicated jargon.

Many researchers searching for information online will use search engines such as Google, Yahoo or others. By optimizing your paper for search engines, you will amplify the chance of someone finding it. In turn, this will make it more likely to be viewed and cited in further works. Global Journals has compiled these guidelines to facilitate you to maximize the web-friendliness of the most public part of your paper.

**Keywords**

A major lynchpin of research work for the writing of research papers is the keyword search, which one will employ to find both library and internet resources. Up to eleven keywords or very brief phrases have to be given to help data retrieval, mining, and indexing.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy: planning of a list of possible keywords and phrases to try.

Choice of the main keywords is the first tool of writing a research paper. Research paper writing is an art. Keyword search should be as strategic as possible.

One should start brainstorming lists of potential keywords before even beginning searching. Think about the most important concepts related to research work. Ask, “What words would a source have to include to be truly valuable in a research paper?” Then consider synonyms for the important words.

It may take the discovery of only one important paper to steer in the right keyword direction because, in most databases, the keywords under which a research paper is abstracted are listed with the paper.

**Numerical Methods**

Numerical methods used should be transparent and, where appropriate, supported by references.

**Abbreviations**

Authors must list all the abbreviations used in the paper at the end of the paper or in a separate table before using them.

**Formulas and equations**

Authors are advised to submit any mathematical equation using either MathJax, KaTeX, or LaTeX, or in a very high-quality image.

**Tables, Figures, and Figure Legends**

Tables: Tables should be cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g., Table 4, a self-explanatory caption, and be on a separate sheet. Authors must submit tables in an editable format and not as images. References to these tables (if any) must be mentioned accurately.
Figures

Figures are supposed to be submitted as separate files. Always include a citation in the text for each figure using Arabic numbers, e.g., Fig. 4. Artwork must be submitted online in vector electronic form or by emailing it.

Preparation of Electronic Figures for Publication

Although low-quality images are sufficient for review purposes, print publication requires high-quality images to prevent the final product being blurred or fuzzy. Submit (possibly by e-mail) EPS (line art) or TIFF (halftone/photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Avoid using pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings). Please give the data for figures in black and white or submit a Color Work Agreement form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

For scanned images, the scanning resolution at final image size ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs): >350 dpi; figures containing both halftone and line images: >650 dpi.

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Tips for Writing a Good Quality Management Research Paper

Techniques for writing a good quality management and business research paper:

1. **Choosing the topic:** In most cases, the topic is selected by the interests of the author, but it can also be suggested by the guides. You can have several topics, and then judge which you are most comfortable with. This may be done by asking several questions of yourself, like "Will I be able to carry out a search in this area? Will I find all necessary resources to accomplish the search? Will I be able to find all information in this field area?" If the answer to this type of question is "yes," then you ought to choose that topic. In most cases, you may have to conduct surveys and visit several places. Also, you might have to do a lot of work to find all the rises and falls of the various data on that subject. Sometimes, detailed information plays a vital role, instead of short information. Evaluators are human: The first thing to remember is that evaluators are also human beings. They are not only meant for rejecting a paper. They are here to evaluate your paper. So present your best aspect.

2. **Think like evaluators:** If you are in confusion or getting demotivated because your paper may not be accepted by the evaluators, then think, and try to evaluate your paper like an evaluator. Try to understand what an evaluator wants in your research paper, and you will automatically have your answer. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

3. **Ask your guides:** If you are having any difficulty with your research, then do not hesitate to share your difficulty with your guide (if you have one). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work, then ask your supervisor to help you with an alternative. He or she might also provide you with a list of essential readings.

4. **Use of computer is recommended:** As you are doing research in the field of management and business then this point is quite obvious. Use right software: Always use good quality software packages. If you are not capable of judging good software, then you can lose the quality of your paper unknowingly. There are various programs available to help you which you can get through the internet.

5. **Use the internet for help:** An excellent start for your paper is using Google. It is a wondrous search engine, where you can have your doubts resolved. You may also read some answers for the frequent question of how to write your research paper or find a model research paper. You can download books from the internet. If you have all the required books, place importance on reading, selecting, and analyzing the specified information. Then sketch out your research paper. Use big pictures: You may use encyclopedias like Wikipedia to get pictures with the best resolution. At Global Journals, you should strictly follow here.
6. **Bookmarks are useful:** When you read any book or magazine, you generally use bookmarks, right? It is a good habit which helps to not lose your continuity. You should always use bookmarks while searching on the internet also, which will make your search easier.

7. **Revise what you wrote:** When you write anything, always read it, summarize it, and then finalize it.

8. **Make every effort:** Make every effort to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in the introduction—what is the need for a particular research paper. Polish your work with good writing skills and always give an evaluator what he wants. Make backups: When you are going to do any important thing like making a research paper, you should always have backup copies of it either on your computer or on paper. This protects you from losing any portion of your important data.

9. **Produce good diagrams of your own:** Always try to include good charts or diagrams in your paper to improve quality. Using several unnecessary diagrams will degrade the quality of your paper by creating a hodgepodge. So always try to include diagrams which were made by you to improve the readability of your paper. Use of direct quotes: When you do research relevant to literature, history, or current affairs, then use of quotes becomes essential, but if the study is relevant to science, use of quotes is not preferable.

10. **Use proper verb tense:** Use proper verb tenses in your paper. Use past tense to present those events that have happened. Use present tense to indicate events that are going on. Use future tense to indicate events that will happen in the future. Use of wrong tenses will confuse the evaluator. Avoid sentences that are incomplete.

11. **Pick a good study spot:** Always try to pick a spot for your research which is quiet. Not every spot is good for studying.

12. **Know what you know:** Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

13. **Use good grammar:** Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice. Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

14. **Arrangement of information:** Each section of the main body should start with an opening sentence, and there should be a changeover at the end of the section. Give only valid and powerful arguments for your topic. You may also maintain your arguments with records.

15. **Never start at the last minute:** Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

16. **Multitasking in research is not good:** Doing several things at the same time is a bad habit in the case of research activity. Research is an area where everything has a particular time slot. Divide your research work into parts, and do a particular part in a particular time slot.

17. **Never copy others' work:** Never copy others' work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

18. **Go to seminars:** Attend seminars if the topic is relevant to your research area. Utilize all your resources.

19. **Refresh your mind after intervals:** Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

20. **Think technically:** Always think technically. If anything happens, search for its reasons, benefits, and demerits. Think and then print: When you go to print your paper, check that tables are not split, headings are not detached from their descriptions, and page sequence is maintained.

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22. **Report concluded results:** Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

23. **Upon conclusion:** Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print for the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects of your research.

**Informal Guidelines of Research Paper Writing**

**Key points to remember:**
- Submit all work in its final form.
- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

**Final points:**

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

*The introduction:* This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

*The discussion section:*

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

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Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

*To make a paper clear:* Adhere to recommended page limits.

*Mistakes to avoid:*
- Insertion of a title at the foot of a page with subsequent text on the next page.
- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.
• Use paragraphs to split each significant point (excluding the abstract).
• Align the primary line of each section.
• Present your points in sound order.
• Use present tense to report well-accepted matters.
• Use past tense to describe specific results.
• Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
• Avoid use of extra pictures—include only those figures essential to presenting results.

Title page:
Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

Abstract: This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

An abstract is a brief, distinct paragraph summary of finished work or work in development. In a minute or less, a reviewer can be taught the foundation behind the study, common approaches to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Use comprehensive sentences, and do not sacrifice readability for brevity; you can maintain it succinctly by phrasing sentences so that they provide more than a lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study with the subsequent elements in any summary. Try to limit the initial two items to no more than one line each.

Reason for writing the article—theory, overall issue, purpose.
• Fundamental goal.
• To-the-point depiction of the research.
• Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

Approach:
• Single section and succinct.
• An outline of the job done is always written in past tense.
• Concentrate on shortening results—limit background information to a verdict or two.
• Exact spelling, clarity of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else.

Introduction:
The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.

The following approach can create a valuable beginning:
• Explain the value (significance) of the study.
• Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
• Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
• Briefly explain the study's tentative purpose and how it meets the declared objectives.
Approach:
Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point for every section. If you make the four points listed above, you will need at least four paragraphs. Present surrounding information only when it is necessary to support a situation. The reviewer does not desire to read everything you know about a topic. Shape the theory specifically—do not take a broad view.
As always, give awareness to spelling, simplicity, and correctness of sentences and phrases.

Procedures (methods and materials):
This part is supposed to be the easiest to carve if you have good skills. A soundly written procedures segment allows a capable scientist to replicate your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order, but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt to give the least amount of information that would permit another capable scientist to replicate your outcome, but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section.
When a technique is used that has been well-described in another section, mention the specific item describing the way, but draw the basic principle while stating the situation. The purpose is to show all particular resources and broad procedures so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step-by-step report of the whole thing you did, nor is a methods section a set of orders.

Materials:
*Materials may be reported in part of a section or else they may be recognized along with your measures.*

Methods:
- Report the method and not the particulars of each process that engaged the same methodology.
- Describe the method entirely.
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- Simplify—detail how procedures were completed, not how they were performed on a particular day.
- If well-known procedures were used, account for the procedure by name, possibly with a reference, and that's all.

Approach:
It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer’s interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.
Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

What to keep away from:
- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings—save it for the argument.
- Leave out information that is immaterial to a third party.

Results:
The principle of a results segment is to present and demonstrate your conclusion. Create this part as entirely objective details of the outcome, and save all understanding for the discussion.
The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.
You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.

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Content:

- Sum up your conclusions in text and demonstrate them, if suitable, with figures and tables.
- In the manuscript, explain each of your consequences, and point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation of an exacting study.
- Explain results of control experiments and give remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or manuscript.

What to stay away from:

- Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- Do not include raw data or intermediate calculations in a research manuscript.
- Do not present similar data more than once.
- A manuscript should complement any figures or tables, not duplicate information.
- Never confuse figures with tables—there is a difference.

Approach:

As always, use past tense when you submit your results, and put the whole thing in a reasonable order.

Put figures and tables, appropriately numbered, in order at the end of the report.

If you desire, you may place your figures and tables properly within the text of your results section.

Figures and tables:

If you put figures and tables at the end of some details, make certain that they are visibly distinguished from any attached appendix materials, such as raw facts. Whatever the position, each table must be titled, numbered one after the other, and include a heading. All figures and tables must be divided from the text.

Discussion:

The discussion is expected to be the trickiest segment to write. A lot of papers submitted to the journal are discarded based on problems with the discussion. There is no rule for how long an argument should be.

Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implications of the study. The purpose here is to offer an understanding of your results and support all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of results should be fully described.

Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact, you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved the prospect, and let it drop at that. Make a decision as to whether each premise is supported or discarded or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."

Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work.

- You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- Give details of all of your remarks as much as possible, focusing on mechanisms.
- Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
- One piece of research will not counter an overall question, so maintain the large picture in mind. Where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.
Approach:
When you refer to information, differentiate data generated by your own studies from other available information. Present work done by specific persons (including you) in past tense.
Describe generally acknowledged facts and main beliefs in present tense.

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