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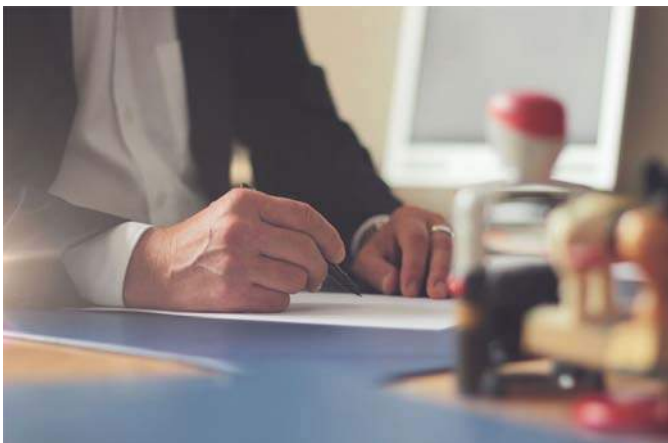
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The Impact of Multi-Party Cooperation on China's Democratization Process

Si Chen, Mohd. Mahadee Ismail, Ku Hasnita Ku Samsu & Mohd Sabri bin Md Nor

ABSTRACT

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Keywords: political parties, democracy, political consultation, elections, pluralistic development.

Classification: JEL Code: P16

Language: English

Great Britain Journals Press

London Journal of Research in Management and Business

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Political parties play a crucial role in a democratic country, not only in running for and governing in elections, but also as the cornerstone of democratic politics, playing an important role in guiding social thinking, representing public opinion, mediating conflicts and promoting social progress in many ways. From the perspective of the Chinese People's Political Consultative Conference, the paper argues through case studies that the role of political parties in a democratic state is multi-faceted. Political parties are not just organisations that participate in elections and govern, but should also be the cornerstone of democratic politics, playing important roles such as guiding social thinking, representing public opinion, mediating conflicts and advancing social progress. Political parties should be concerned with the interests of the people, co-ordinate various interests and promote social harmony. At the same time, political parties should also actively participate in law-making, government supervision and policy proposals, contributing to the development of the country and its people. Finally the paper argues that in a democracy, the development and growth of political parties is key, because only the pluralistic development of political parties can provide more choices for the people and promote political stability and development.

Keywords: political parties, democracy, political consultation, elections, pluralistic development.

I. INTRODUCTION

1.1 Background

Since the 19th century, modern states and societies have experienced three waves of democratisation. During this process, Western Western capitalist countries infiltrated liberal party democracy into some developing countries and helped some developing In this process, Western capitalist countries have infiltrated the idea of liberal party democracy into some developing countries, helping some of them to complete the transition to party democracy (Zhang & Lu, 2013). However, there were also nations where the transition failed, and a division between the state and society emerged. This has contributed to a particular crisis of faith in capita realise democracy. As the central organisation of contemporary state politics, the party system has played a crucial role in modernisation. The party system, as the key institutional framework of modern state politics, assumes a pivotal role in the administration of a nation. As the bedrock of contemporary state politics, it serves as the foundation for effective governance, as highlighted by Zhuang and Wang (2020).

Drawing on the extensive practical experience of socialist democracy with distinctive Chinese characteristics over the long term, and incorporating the innovative contemporary insights into Marxist party democracy as expounded by Marx (1977), we aim to develop a comprehensive understanding of this concept. General Secretary Xi Jinping has formally proposed the theoretical prerequisite for China's innovation and development of a novel form of political party structure. The Chinese political party system has undergone significant transformation, characterized by a unique arrangement where the Communist Party of China (CPC), charged with safeguarding and promoting the fundamental interests of the vast majority of Chinese citizens, collaborates with democratic parties in China to advance their shared objective of democratic governance. The CPC's original mandate, "working for the happiness of the Chinese people" and "working

for the rejuvenation of the Chinese nation," underpins its leadership role in this new paradigm. It is a crucial component of the democratic process (Hu, 2022).

China's rapid progress in economic and social development, as well as the ongoing reform and opening-up process, have triggered a continuous evolution and transformation of its political system. Among them, the democratic system, as a contemporary model of the political system, has garnered an increasing amount of research interest (Wang & Wang, 2021). In China's democratic system, parties are essential components, and the collaboration and competition between different parties significantly impact China's democratisation process (Han, 2022).

Participation parties are an integral element of China's political party system (Qi & Chai, 2020). The multi-party cooperation system led by the Chinese Communist Party is a unique political party system in the world. It is a novel conception of a political party within the theory of political parties, a novel form of political Party on a global scale, and a political phenomenon unique to China. They embrace the leadership of the Communist Party of China, cooperate with it instead of fighting it, supervise each other instead of opposing it, and are active in the contemporary Chinese political arena in order to share power rather than seize it (Ran & Li, 2019). It also demonstrates that China's socialist democratic political system is superior. As the scope of China's reforms expanded from the economic to the political spheres, the significant development of material civilisation stimulated the advancement of political civilisation. Increasing daily are the demands for advancing China's democratic politics (Yang & Liu, 2023).

1.2 Statement of The Problem

In the 1980s, as China's political system entered a new phase of reform, the study of the function of political parties in China's democratic system gained attention and underwent modification (Gao & Yang, 2018). Subsequently, scholars began examining the role and position of political parties in China's democratic system and their contribution to political reform and democratisation (He, 2020).

Consequently, political parties are essential to democratic politics. In democratic politics, political parties play multiple roles, including representing the interests of electors, organising the political competition, setting the political agenda, participating in political decision-making, coordinating political interests, and promoting political reform (Norris, 2019). Political parties serve not only to win elections, but also to influence political decision-making and promote the advancement and progress of democratic politics (Katz & Mair, 2020). Lastly, as democratic politics develop and advance, the Role of political parties in democratic politics is continuously changing and evolving (Mainwaring, 2021). In the process of deepening democratic politics, for instance, the supervision, restriction, and consultation functions of political parties are constantly being bolstered, and the organisation and concept of political parties are constantly evolving and innovating (Scarrow, 2022). Therefore, the study of the function of political parties in democratic countries has essential theoretical and practical significance, which aids in advancing the development and progress of democratic politics and enhancing the understanding and comprehension of democratic politics.

In China's multi-party system, parties represent diverse political forces and interest groups with varying ideologies and political agendas (Chen, 2018). Parties may play a role in democratic oversight, superintend the work of the government and the implementation of policies, advance political reform and institutional development, and promote a transparent government. Parties can cultivate and promote democratic values, improve citizens' political quality and democratic awareness through continuous publicity and education, and advance China's democratic politics (Zhang, 2022).

In the current Chinese political party system, there are eight democratic parties in addition to the CPC. The eight parties mentioned are the Revolutionary Committee of the Chinese

Kuomintang, China Democratic League, China National Democratic Construction Association, China Association for the Promotion of Democracy, China Farmers and Workers Democratic Party, China Zhigong Party, Jiusan Society, and Taiwan Democratic Self-Government League.

Democratic parties in China, despite functioning as participating parties, lacked a clear identity as such long after the founding of the People's Republic of China. It wasn't until 1989 when the CPC Central Committee published the "Opinions on Upholding and Improving the System of Multi-Party Cooperation and Political Consultation under the leadership of the Communist Party of China" that the democratic parties were officially recognized as "accepting the leadership of the Communist Party of China". The close friends who cooperate with the CPC and commit themselves to the cause of socialism together are participating parties."The role and significance of participating parties in China's democratic political system have become increasingly clear and recognized over time (Li, 2018).

Participating parties are distinct political phenomena and types of political parties in China, each with its functions (Li & Li, 2019). The theoretical study of participating parties in China started late but has developed significantly and is essential to the study of Chinese political parties (Lin, 2020). The realisation of the democratic value of participating parties depends on whether the advantages of China's political party system can be demonstrated and whether China's democratic politics can develop healthily. There is a vast research space and many pressing questions to be answered. Exploring the democratic value of participating parties based on existing academic accomplishments is advantageous for advancing the theoretical study of participating parties. Also, it meets the requirements for developing democratic politics in China. It has considerable theoretical significance and practical application value (Liang, 2021).

In other words, parties play an indispensable role in Chinese democracy, which influences the growth and development of democratic politics in China. Therefore, strengthening party construction and maximising its Role in democratic politics is required to develop democratic politics in China.

1.3 Significance of the Study

The focus of this paper is to advance and enhance China's political party system in accordance with the overall development of China's democratic politics. It maintains the theme of constructing participating political organizations from the new perspective of democratic value. This paper carries significant practical implications for the development of Chinese democratic politics and political civilization, the consolidation and perfection of the Chinese political party system, the promotion of constructing participating political parties, and the realization of their party values.

1.3.1 The Essential Conditions for China's Development of Democratic Politics

Political democratisation is an essential content of national modernisation, and the degree of political democratisation is an important symbol of a country's modernisation level (Liu, 2018). No matter the "wave of democratisation" around the world after the 1970s (according to the explanation of the American scholar Huntington, from the 19th century to the 20th century, humankind experienced three waves of democratisation, and the third wave referred to as the period from 1974 to 1990s when about 33 countries established democratic systems), It is also the "colour revolution" in the Commonwealth of Independent States and Central Asian countries in this century, which is full of distinct Western value preference and system choice. The "universal value of democracy" is more about the West's use of democracy in densification, instrumentalisation, utilitarianism and politicisation, which is the realistic expression of Western values and ideologies (Yang, 2019). In view of the impact of the democratic trend dominated by the power of discourse in the West, our country needs to make its own interpretation and interpretation of democracy (Liu, 2020).

Since the turn of the millennium, China has put forward that "there can be no socialism without democracy" and "realising and developing people's democracy is the unswerving goal of the Communist Party of China and all democratic parties" (Tong,2020). These expressions not only convey the connotation of democracy of socialism in China from the goal and ideal level, indicating that democracy is the inherent meaning of socialism, but also determine that the realisation of democratic value, the practice of democratic spirit, and implementation of the democratic system will always run through the whole course of contemporary China's political development.

Although the West acknowledges China's economic progress and social changes following the reform and opening up, it has not fully recognized China's political system and the advancements made in its democratic political development (Borzel & Risse, 2018). Our party system and democratic politics are tested by the influence and infiltration of Western democratic concepts and other ideologies (Carothers, 2018).

To ensure the steady growth of China's economy and society, it is essential to establish a stable political environment that supports the development of China's democratic politics (Ma, 2019). The cooperation between the Chinese Communist Party and democratic parties is crucial in achieving this goal. Without the leadership and support of the ruling Party and the complete support of all participating parties, progress in the development of democratic politics and the expansion of political civilisation in China would not be possible. Realising the democratic value of participating parties and continuously accumulating incremental democracy (the concept of incremental democracy proposed by Chinese scholar Yu Keping includes four fundamental meanings) is conducive to coping with the impact and challenge of the democratic trend and promoting the healthy The advancement of China's democratic politics and political civilization is a crucial aspect of China's overall development (Tiezzi, 2019).

1.3.2 The Practical Need to Consolidate China's Political Party System

Since the start of the new millennium, China has emphasized that the multi-party cooperation system under the leadership of the Communist Party "embodies the characteristics and advantages of China's political system and reflects the essence of socialist democracy where the people are masters of the country" (Guo, 2019). The word "democracy" is firmly integrated into China's political party system, and the democratic value orientation is demonstrated in the democratic objectives chosen by the ruling Party and other parties (Wang, 2018). This perspective enables an examination of the Communist Party's governance and the participation of democratic parties in politics with regard to realizing and advancing the people as masters of the country and understanding the current Chinese political party system from the essence of socialist democracy.

Currently, a benevolent political guarantee is imperative to advance the development of democratic politics in China as it sustains the stable and long-term health of China's economy and society (Liu, 2019). The current political party system in China operates on the basic framework of the ruling of the Communist Party and the participation of multiple parties in politics, providing an essential vehicle for democratic politics and an institutional platform for the ruling and participating parties to demonstrate their democratic values and fulfil their respective social responsibilities and political functions (Wang, 2020). It is crucial to realise the democratic value of participating parties to enhance mutual promotion between the ruling Party and participating parties, deepen multi-party cooperation, consolidate and develop the socialist political party system with Chinese characteristics, and evaluate and highlight the benefits of China's political party system, thus enhancing its influence and international standing (Zhang, 2020).

1.4 Literature Review

The research on the valuable Role of participating parties in democratic countries is at the

theoretical frontier, and there are almost no direct research results in the academic community. The research on China's political party system, including the ruling Party, democratic parties, and democratic politics, has been the primary focus of relevant studies (Bogaards, 2015). However, due to distinct ideological barriers and different political positions, domestic and foreign studies on the above topics have been heavily influenced by their discourse systems. There are specific barriers and difficulties in communication and dialogue between them (Lust-Okar, 2016).

The Role of political parties in democratic nations is an essential research direction in political science, as it significantly impacts the political system, political culture, and political economy (Zhang, 2019). Few foreign articles analyse the democratic nature of China's new political party system compared to those written by domestic scholars. More scholars examine Chinese political parties and democratic models, and the majority examines the essence of Chinese democracy through the lens of culture, language, and history (Hu & Bai, 2019). To understand the democratic logic behind China's new political party system, it is essential to compare it with the well-developed theories of Western political party democracy. This will help identify the differences between the two political party systems and highlight the comparative advantages of China's new political party system (Yin, 2019). Weber's analysis of the characteristics of political parties and Sartori's analysis of political parties and the party system have long influenced the party system theory (Sartori, 2019). In addition to the perspective of party organisation, western democratic theory can also serve as a reference. The theories of unitary democracy by Mansbridge, deliberative democracy by Johansen, inclusive democracy by Gale, and consensus democracy by Rifat (Manin, 2019). Holly Snape's research on the history of the Chinese Communist Party and official documents suggests that the official discourse in China allows for political participation (Johnson, 2019).

In 1999, Stepanova, a Russian scholar, published a work entitled The Multi-party Cooperation System in the People's Republic of China, which explored the formation, characteristics, and

functions of the multi-party cooperation system with Chinese characteristics, as well as the role of the eight non-communist democratic parties. Additionally, a collective work from the Russian perspective titled The Chinese Political System and the Legal System in the Process of Reform 1978-2005, published in 2007, sheds light on China's democratic parties and their involvement in party politics (McBride, 2019). Since the 1990s, foreign academics have made significant advancements in studying China's democratic parties, such as the 1995 study by German researchers. H. M. Umbach's book The Chinese Democratic Parties under the Influence of the Communist Party provides a detailed analysis of the historical background, programmatic objectives, functions, and self-identification of the formation of democratic parties in China. Umbach argues that democratic parties only cooperate with the Chinese Communist Party because they shared the same goals during the New Democratic Revolution. However, they were never founded to serve the Communist Party's objectives. In 1999, Stepanova, a Russian scholar, published The Multi-party Cooperation System in the People's Republic of China, which delved into the formation, characteristics, and functions of the multi-party cooperation system in China. This monograph also shed light on the eight non-communist political parties and democratic parties. Meanwhile, a collective work on Chinese party politics from the Russian perspective titled The Chinese Political System and the Legal System in the Reform Process of 1978-2005 was published in 2007, providing additional insights into China's democratic parties (McBride, 2019).

Due to space constraints, this paper will not elaborate on the research methods. However, these methods can help political science scholars obtain a more comprehensive understanding of the Role and influence of political parties in democracies.

II. THE DEMOCRATIC RESPONSIBILITY OF CHINA'S POLITICAL PARTIES IN THE NEW POLITICAL PARTY SYSTEM

2.1 *The Introduction of The Idea of Popular Sovereignty and The Breakthrough of Democratic Theory*

Rousseau, one of the most notable representatives of the Enlightenment in the eighteenth century and an ideological forerunner of the French Revolution, made a significant conceptual contribution to the development of democratic theory by introducing the concept of the sovereignty of the people.

Rousseau believed every human being is born free and equal and that freedom is a natural right of man (Rousseau, 2016). When faced with obstacles to survival, humans with such a proper natural form a bond through the conclusion of a social contract (Rawls, 1993). The establishment of the state is the result of a contract made by a free people, representing a political and moral community that has been created through their voluntary agreement. The conclusion of the contract means that "each bond and all its own rights are transferred to the collective as a whole (Dahl, 2015)." At the same time, "from any one of the unions, the people can acquire the same rights that they have ceded to them so that they receive the equivalent of everything they have lost and greater power to preserve all that they have and to be free as before (Habermas, 2015). The general guides everyone will in a state formed by a social contract. The public will is the "constant will of all the members of the state" and is the central expression of the public interest and the common will of the people. It always tends towards equality, applies to all united people, and is always just (Held, 2016).

Rousseau was not the first to formulate a theory of sovereignty; Bourdin, Grotius and Hobbes, who had elaborated it before him, all bore the imprint of the age of kingship, while Locke insisted on parliamentary sovereignty against hereditary kingship. However, he believed the people could not exercise power directly (Guo, 2019). In contrast, there is a distinct idea running through Rousseau's assertion that the people are the sole source of state power and that the sovereignty of the state (i.e. supremacy) should also belong to the people as a whole. Sovereignty comes from the people and should also be held by the people and exercised by the people. Since sovereignty was not transferable, indivisible or representative, Rousseau believed that direct democracy could achieve the people's sovereignty (Weiler, 2020).

Rousseau's idea of "popular sovereignty" has profoundly impacted the history of democracy. Ancient Greek democracy, emphasising "rule by the people", was a political system in the form of a city-state polity imbued with the pursuit of values such as equality and freedom. The idea of "popular sovereignty" reflects an ideal tendency in human nature, which covers the political demands for political equality and individual freedom. It is the core value of democracy, revealing the essence of democracy. Although Rousseau's idea of popular sovereignty had many objective and illogical flaws, and although he favoured direct democracy but left himself torn by doubts about its feasibility, he could not foresee the critical value and prospects of popular sovereignty (Yang & Zhu, 2018). However, subsequent historical developments have shown that the idea of popular sovereignty has extensively promoted the development of democratic theory, not only stimulating the democratic political enthusiasm of the masses during the bourgeois ascendancy and becoming a powerful ideological weapon of the French Revolution but also influencing the course of democratic political development in the West and the world since modern times, becoming a later generation's resistance to political oppression, the achievement of political equality and the struggle for individual freedom and human emancipation. It has become a theoretical banner of resistance to political oppression, political equality and the struggle for individual freedom and human emancipation for generations to come, exuding a timeless ideological appeal (Larmore, 2019).

2.2 *Political Party Consultation is An Exemplary Form of Socialist Consultative Democracy*

Over the past seven decades since the founding of New China, democratic parties have, under their

unique institutional, channel, organisational and talent advantages, participated in the significant decisions of the CPC and the state on a long-term and continuous basis and have established a relatively close contact mechanism with high-level decision-making bodies and decision-makers, fully intervening in all aspects of public decision-making, which is an essential manifestation of full-process people's democracy (Huang, 2019). Party consultation, a key democratic process, involves direct consultation between the CPC and democratic parties, with a shared focus on political goals. It is particularly important before and during the implementation of significant policies and affairs of the Party and the state, and plays a critical role in promoting socialist consultative democracy (Wang, 2021). Political party consultation is a crucial component of socialist consultative democracy and the political party system in China. It serves as a significant mechanism for state governance with Chinese characteristics and a model of socialist consultative democracy (Xie, 2018). At present, political party consultation includes three forms of consultation: meeting consultation, consultation by appointment and written consultation, which are political, party-based, high-level and direct and are virtual channels and ways for the central committees of democratic parties to participate in high-level decision-making (Yang, 2019).

General Secretary Xi Jinping emphasised in September 2019 that "the multi-party cooperation and political consultation system under the leadership of the CPC is a fundamental political system in China and a new type of political party system originating on Chinese soil" (Li, 2021). In December 2020, the CPC Central Committee revised the "Regulations on the Work of the United Front," again clarifying political party consultation's content and general requirements through party regulations (Yu, 2020). According to the Opinions on the Implementation of Strengthening Political Party Consultations, the main contents of political party consultations between the CPC Central Committee and the Central Committees of democratic parties include "the relevant important documents of the

National Congress of the CPC and the CPC Central Committee; the proposed amendments to the Constitution, the proposed formulation and amendment of relevant important laws; the proposed candidates for important positions." The primary contents include "important issues related to reform, development, and stability; major issues of the united front and multi-party cooperation; and other important issues requiring consultation," which are all fundamental, global, and strategic issues (Zhu, 2018).

2.3 Practical Features of the Role of Democratic Values of Political Parties

"Democracy is generated from within and not imposed from without." Similarly, national party systems result from particular historical circumstances and cannot be transplanted or replicated (Liu, 2019). The multi-party cooperation system managed by the Party is a unique form of political party system in the world and a crucial aspect of achieving socialist democracy. Political parties are a fundamental manifestation of the uniqueness of China's political party system, which has distinct practical characteristics in its democratic role compared to Western political parties (Li & Zhang, 2018).

In general, political parties are a product of the development of the state to a particular stage and arise as the political power of the state opens up to society and under the conditions of a certain level of democratic political factor development in the country (Yang, 2017). The spread of democracy is a significant indicator of the significance of political parties' roles (Chen, 2016).

In modern Western party systems, pursuing democratic goals is hidden chiefly but also explicit. When people think of Western democracy, they unconsciously think of the sovereignty of the people and representative government, which has almost become the standard of Western democracy and the logical starting point of the current Western party system (Habermas, 2019). "It continues the democratic aspirations of the bourgeoisie, represented by Rousseau's idea of "popular sovereignty" since the 18th century, and is intertwined with the ancient

democratic values of equality and liberty, which are still the traditional democratic values of Western political parties. (Inglehart & Norris, 2019). As modernisation progresses and traditional capitalism gradually evolves into modern capitalism, the social structure of European and American countries has undergone a significant transformation due to the declining ratio of industrial workers to proletarians and the growing ranks of the middle class; class differences are no longer as apparent as they once were; the class nature of Western democracy has become very different from the era of Marx and Engels' proletarian revolution, and democracy and it is closely related Although these words are rarely found in the political programmes or election platforms of Western political parties, they are the default political consensus and democratic values of political parties in all countries. They are practised in the political behaviour of party societies and party states (Mudde, 2020).

In contrast, pursuing democratic objectives in the modern Chinese political party system has unique characteristics. China's unique political party system emerged from the national democratic revolution, evolved during the complex development of socialist construction with Chinese characteristics and the reform and opening up process, and is guided by the ideals of equality, freedom, fairness, and justice in the pursuit of democracy. The CPC and the state now view the role of the ruling Communist Party and democratic parties in politics as a means to achieve and advance people's democracy, and interpret the Chinese political party system through the lens of socialist democracy with a Chinese character that reflects the will of the people (Guo & Tao, 2020). Democracy is deeply embedded in China's political party system, reflecting the people's control (Xu, 2018).

Although the participating parties have distinct positions and roles in achieving and advancing people's democracy, and different ways of expressing the people's mastery due to different political labor divisions, the democratic parties still emphasize their political participation as their

specific party role—the democratic value concept (Yang, 2018).

China's democratic political construction offers favourable conditions for political parties to fulfil their political democratisation function and democratic value role (Chen, 2022). On the one hand, the multi-party cooperation system guided by the Party satisfies the urgent need for rapid modernisation to increase the effectiveness of political participation and the expansion of socialism (Huang, 2019). The political participation of democratic parties, while conveying the interests and proposals of the specific social groups to which they belong, can also receive the wishes and demands of all levels of society and, after deliberating, sifting, and integrating them, eliminate the irrational and immature contents and transform the independent, fragmented, and individual demands into organised, systematic, and generally meaningful suggestions and opportunities. Democratic parties can aggregate the pluralistic demands of society through effective political participation and expression of opinions within the system, avoid and prevent the risks of social governance arising from uncontrolled political participation, and significantly impact China's political democratisation process (Li & Li, 2021).

On the other hand, democratic oversight based on united and cooperative party relations is also a crucial guarantee for harmonious party relations and the effective operation of the political system (Zheng, 2020). As the ruling Party, the CCP has the legal status and supreme power specified by the Constitution. It has always prioritised realising the interests of the most significant number of people without regard for their self-interest (Zhao & Lu, 2020). However, the universal political law of party development suggests that unmonitored and uncontrolled power is bound to breed corruption, which can lead to the development of political parties that deviate from their political goals and to the alienation and transformation of the parties themselves (Zhang, 2021). The ruling position of the CCP places it at the centre of power, and without adequate oversight, power can easily be

overstepped. Inter-party supervision, especially democratic supervision of the Communist Party by democratic parties, is a kind of high-level heterogeneous political supervision. The suggestions, opinions and criticisms of democratic parties are positive and constructive rather than harmful and destructive. The inter-party supervision effect (Yang, 2021). The more effective the democratic supervision of democratic parties is, the more fully their democratic value as participating parties will be realised. Accordingly, democratic parties, as participating parties, also need to keep pace with the times. The leadership and democratic supervision of democratic parties by the Communist Party of China (CPC), as the ruling Party, will also constantly promote the consciousness of democratic parties to strengthen the construction of participating parties, enhance the concept of political participation and improve their ability to participate in politics in the ever-changing social order, better realise their participation in politics and democratic supervision, and bring into play their due democratic values (Chen. 2019).

III. CONCLUSION

To summarize, the democratic participation of new political parties in China is essential for modernizing the country's state governance. This paper examines the development of China's new political party system through the lens of the multi-party cooperation and political consultation system under the leadership of the Chinese Communist Party. The process of democratization in China's new political party system can be traced back to the democratic revolution, the socialist construction period, and the reform and opening-up era. The CPC has led democratic parties in achieving comprehensive democratization in five key areas: decision-making, consultation, elections, supervision, and management. These efforts have yielded impressive results and reflect the new concept of green development in governance.

In recent years, world political parties have enhanced the political interaction of the CPC, which stems from the fact that China's new political party system has provided a new mode of

thinking in addressing the transformation of the democratisation of world political parties. The irreconcilable class-democratic contradictions faced by the traditional capitalist theory of party democracy are effectively addressed in socialist China's theory of party democracy, which ensures the introduction of a competitive element while avoiding the political risks of political parties collapsing against each other. At the same time, with the development of a multi-polar world and the increasingly close inter-regional relations between countries, human coexistence requires a country like China, whose philosophy of development is "harmony", and the inclusiveness embodied in the new Chinese model of party democracy is welcomed by the world's political party organisations.

The Communist Party of Russia, the Communist Party of Spain and others said, "The Communist Party of China has carried out fruitful work in promoting global inter-party contacts and cooperation, and we are willing to work together with the Communist Party of China to exchange and cooperate in order to work together for global peace and development and enhance the well-being of people in each other's countries and around the world." Many political parties worldwide are eager to share their governance experiences with Chinese political parties to confront the emerging global crises, and they have expressed a desire to join forces with the Communist Party of China in international party cooperation to address these crises. Among other things, the world's political parties must urgently learn from the ideological leadership of Chinese political parties as they implement reforms.In summary, the democratization of China's new political parties is not only necessary for meeting the country's democratic and rule of law development needs, but also serves as a basis for international cooperation between Chinese and foreign political parties.

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Self-Insurance Optimized

Dr. Lloyd Anthony Foster

BACKGROUND

Any large economic project will invariably involve some form of insurance, as a necessary part of its risk management process. Depending on the project, the premiums for such insurance could potentially assume formidable proportions, significantly affecting overall project cost. Not surprisingly, project managers therefore occasionally choose to self-insure (i.e. forego the services of the usual insurance entities and assume the liability themselves, as just one more cost of doing business).

The main aim of this paper is to demonstrate that it is not always necessary to approach the issue of self-insurance in a binary manner: In many cases, the choice will involve retaining part of the risk/liability and passing on the rest to the appropriate insurer(s).

Self-Insurance Optimized

Dr. Lloyd Anthony Foster

The Basics

BACKGROUND

Any large economic project will invariably involve some form of insurance, as a necessary part of its risk management process. Depending on the project, the premiums for such insurance could potentially assume formidable proportions, significantly affecting overall project cost. Not surprisingly, project managers therefore occasionally choose to self-insure (i.e. forego the services of the usual insurance entities and assume the liability themselves, as just one more cost of doing business).

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The Economic Basis for Optimizing Self-Insurance.

Two crucial considerations will impact the decisions concerning self-insurance :

Minimizing Losses

The project manager(s) will want to avoid incurring excess costs, due to damages/losses that could have been insured (In this regard, the lower the liability retained, the more protection will be provided for the project, *ceteris paribus*).

Minimizing Premiums

The project manager(s) will want to avoid passing on too much money to insurers in the form of premiums, if there is a way to demonstrate that such premiums are unnecessary or redundant (In this regard, the higher the liability retained, the more savings will be obtained with respect to premium payments, *ceteris paribus*).

Posing the Equation to be Solved

The risk manager(s) responsible for the project will aim for an optimum retention level such that the sum of premiums paid and losses incurred (i.e. the total outgo with respect to insurance) is minimized.

I.   THE MATHEMATICS

1.1 Selecting an Appropriate Premium Principle

Optimizing the retention level requires the application of one of the premium principles from actuarial science.

For purposes of illustration, this article will utilize the Exponential Premium Principle, an authoritatively recognized method of premium formulation (1) which will be applied in two steps as follows:

Step 1: Premium Payable

$$\text{Prem}[a\_, S\_, R\_] := \frac{1}{a} \text{Log}\left[\mathcal{E}\left[e^{a\ (S-R)^+}\right]\right]$$

Here:

a represents a non-negative scalar, which provides a numerical scale for risk-aversion

S represents the (random) total liability payable for insurable events over the coverage period

R represents a retention limit determined by the project risk manager

$\mathcal{E}$ represents the expected value function for the liability above

To further concretize the illustration, it will be assumed that all the above formula parameters are explicitly known:

- a: 0.05

- S: A gamma distribution with shape parameter 0.7 and scale parameter 7.5

- R: 4.99 units
    - Here the expression 'units' is employed, to avoid being locked into any specific currency or denomination
        - So for example, a unit could be 10 million US dollars or 1 billion Japanese yen

The formula for the premium principle can then be applied by the systematic steps below.

1.2 First, Assuming Losses Follow the Above Gamma Distribution

Here 'losses' refers to payments from the project, due solely to peril/risk incurred in the normal course of operations.

```
GD = GammaDistribution[0.7, 7.5]
```

Graph of the Cumulative Distribution Function of Losses
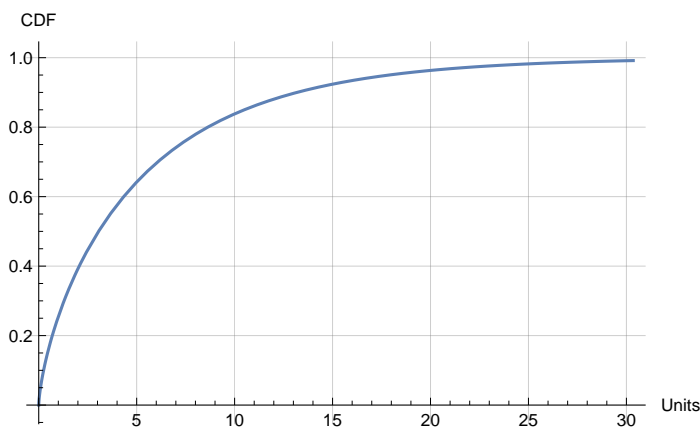
Next, Obtain a Computational Proxy For ∞ (The Upper Limit of The Distribution Function)

```
U = InverseCDF[GD, 0.999999999]
```

This produces a value of 146.669.

1.3 Then Apply the Premium Principle In Practical Terms

If we denote the cumulative distribution function of S at a value $\mathcal{Y}$ as CDF[S, $\mathcal{Y}$], and the corresponding probability density function as PDF[S, $\mathcal{Y}$], then we will have (2):

$$\text{Prem}[a\_, S\_, \mathcal{R}\_] := \frac{1}{a} \text{Log}\left[\text{CDF}[S, \mathcal{R}] + \int_{\mathcal{R}}^{U} e^{a\ (\mathbb{X}-\mathcal{R})}\ \text{PDF}[S, \mathbb{X}]\ d\mathbb{X}\right]$$

Applying our chosen premium principle to the specific values defined above, we determine the premium, $\mathcal{P}$, to be:

$\mathcal{P}$ = Prem[0.05, GD, 4.99]

The result is 3.25533 units.

Step 2: Insurer Limits

We will now consider the situation where the insurer contractually imposes a limit, $\mathcal{L}$, on the amount of liability for which it is responsible. In such a situation, the insurer will pay claims up to $\mathcal{L}$, and will disregard claim amounts greater than $\mathcal{L}$. This will necessarily reduce the premium payable by the project. Application of the Exponential Premium Principle will yield:

$$\text{Prem}[a\_, S\_, \mathcal{R}\_, \mathcal{L}\_] := \frac{1}{a} \text{Log}\left[\text{CDF}[S, \mathcal{R}] + \left(\int_{\mathcal{R}}^{\mathcal{L}} e^{a\ (\mathbb{X}-\mathcal{R})}\ \text{PDF}[S, \mathbb{X}]\ d\mathbb{X}\right) + 1 - \text{CDF}[S, \mathcal{L}]\right]$$

If we keep the same risk-aversion parameter, loss distribution function and retention as previously used, but also impose a limit of 25 units, we would obtain the following premium, $\mathcal{P}$:

$\mathcal{P}$ = Prem[0.05, GD, 4.99, 25]

The result is 1.87142 units.

II. SOLVING THE RETENTION PROBLEM

The way to obtain the solution for optimum retention then becomes clear:

Derive a function of $\mathcal{R}$ (keeping all other parameters at the constant levels above) based on the premium principle, and solve for the value of $\mathcal{R}$ that minimizes the function.

In short, minimize:

Pr[$\mathcal{R}$_] := Prem[0.05, GD, $\mathcal{R}$, 25] + Prem[0.05, GD, 0, $\mathcal{R}$]

III. THE FINAL RESULT

The practical approach to obtaining the desired result, consists of:

- (a) defining a comprehensive range of possible values of $\mathcal{R}$
- (b) calculating the corresponding values of Pr[$\mathcal{R}$]
- (c) graphing the results
- (d) identifying the minimum value from observation of the graph

Self-Insurance Optimized

The illustrative example used in this paper proceeds as follows:

- Range of possible value of $\mathcal{R}$: 5.00 to 9.99
- Incremental step in values of $\mathcal{R}$: 0.01

3.1 Observation of Graph

The results are graphed below. Observation shows the required minimum to be between 6.5 and 7 units.
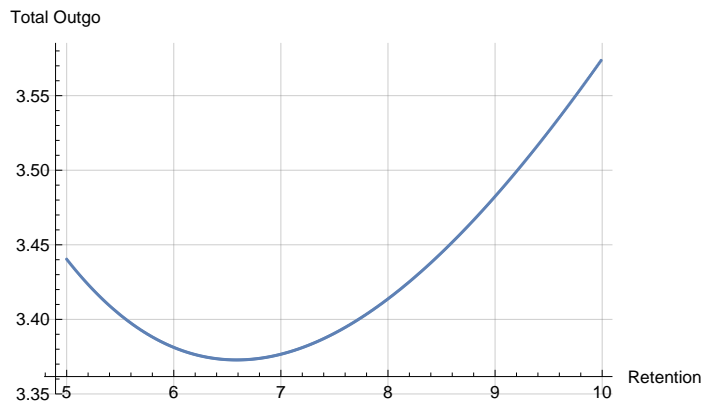
By applying appropriate numerical techniques to refine/improve the precision of the model, it can be shown that the correct answer is between 6.59 and 6.6 units.

VI.   ANALYSIS

The above treatise is for illustration only.

Practical application in a real setting would require intensive statistical research to arrive at the distribution function that best fits the insurable losses. Similarly, investigation and study would be required to determine the best representative risk-aversion parameter.

Note however, that even if precise definitions of these parameters cannot be obtained, the project risk manager(s) could still provide useful information by applying the model in a simulation setting, with multiple runs to show results under various 'what if' situations and combinations of situations.

The approach outlined in this article could therefore, at the very least, form a foundation for addressing the important issue of self-insuring projects.

Lloyd Foster FSA MAAA

APPENDIX

Derivation of Premium Formula When Insurer Limit, $\mathcal{L}$, is Imposed

When There Are No Limits

It is instructive to first see how the formula is derived when there are no limits. The relevant point is that the insurer liability between 0 and $\mathcal{R}$ is identically 0. We therefore take this fact into account when applying the premium principle.

Successively:

$$\texttt{Prem}[a\_, \, \mathcal{S}\_, \, \mathcal{R}\_] \; := \; \frac{1}{a} \; \texttt{Log}\Big[\mathcal{E}\big[\mathbb{e}^{a \, (\mathcal{S}-\mathcal{R})^+}\big]\Big] \; :=$$

$$\frac{1}{a} \; \texttt{Log}\Big[\int_0^{\mathcal{R}} \mathbb{e}^{a \times \theta} \, \texttt{PDF}[\mathcal{S}, \, \mathbb{X}] \, \texttt{d}\mathbb{X} + \int_{\mathcal{R}}^{U} \mathbb{e}^{a \, (\mathbb{X}-\mathcal{R})} \, \texttt{PDF}[\mathcal{S}, \, \mathbb{X}] \, \texttt{d}\mathbb{X} \Big] \; =$$

$$\frac{1}{a} \; \texttt{Log}\Big[\int_0^{\mathcal{R}} \texttt{PDF}[\mathcal{S}, \, \mathbb{X}] \, \texttt{d}\mathbb{X} + \int_{\mathcal{R}}^{U} \mathbb{e}^{a \, (\mathbb{X}-\mathcal{R})} \, \texttt{PDF}[\mathcal{S}, \, \mathbb{X}] \, \texttt{d}\mathbb{X} \Big] \; =$$

$$\frac{1}{a} \; \texttt{Log}\Big[\texttt{CDF}[\mathcal{S}, \, \mathcal{R}] + \int_{\mathcal{R}}^{U} \mathbb{e}^{a \, (\mathbb{X}-\mathcal{R})} \, \texttt{PDF}[\mathcal{S}, \, \mathbb{X}] \, \texttt{d}\mathbb{X} \Big]$$

When Limit, $\mathcal{L}$, is Imposed

In the case of a limit, $\mathcal{L}$, we note that in addition to the above restriction, the insurer liability between $\mathcal{R}$ and U is identically 0. Again, we take this fact into account when applying the premium principle.

First, let

$$\mathcal{W} = \int_{\mathcal{L}}^{U} \mathbb{e}^{a \times \theta} \, \texttt{PDF}[\mathcal{S}, \, \mathbb{X}] \, \texttt{d}\mathbb{X} \; =$$

$$\int_{L}^{U} \texttt{PDF}[\mathcal{S}, \, \mathbb{X}] \, \texttt{d}\mathbb{X} \; =$$

$$\mathbf{1} - \texttt{CDF}[\mathcal{S}, \, \mathcal{L}]$$

Then successively:

$$\texttt{Prem}[a\_, \, \mathcal{S}\_, \, \mathcal{R}\_] \; := \; \frac{1}{a} \; \texttt{Log}\Big[\mathcal{E}\big[\mathbb{e}^{a \, (\mathcal{S}-\mathcal{R})^+}\big]\Big] \; :=$$

$$\frac{1}{a} \; \texttt{Log}\Big[\int_0^{\mathcal{R}} \mathbb{e}^{a \times \theta} \, \texttt{PDF}[\mathcal{S}, \, \mathbb{X}] \, \texttt{d}\mathbb{X} + \int_{\mathcal{R}}^{\mathcal{L}} \mathbb{e}^{a \, (\mathbb{X}-\mathcal{R})} \, \texttt{PDF}[\mathcal{S}, \, \mathbb{X}] \, \texttt{d}\mathbb{X} + \mathcal{W} \Big] \; :=$$

$$\frac{1}{a} \; \texttt{Log}\Big[\texttt{CDF}[\mathcal{S}, \, \mathbb{X}] + \int_{\mathcal{R}}^{U} \mathbb{e}^{a \, (\mathbb{X}-\mathcal{R})} \, \texttt{PDF}[\mathcal{S}, \, \mathbb{X}] \, \texttt{d}\mathbb{X} + \mathbf{1} - \texttt{CDF}[\mathcal{S}, \, \mathcal{L}] \Big]$$

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2. An Introduction to Mathematical Risk Theory, Chapter 7, Pages 96 and 97, by Hans U Gerber

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Examining Safety Perceptions Across Diverse Bus Systems in Brazil

Elenice de Souza Oliveira, Ph.D., Braulio Figueiredo Alves da Silva, Ph.D., Pietra Raissa Silva, Ana Marcela Ardila Pinto, Ph.D. & Elisa Dilly Generoso Macedo

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ABSTRACT

This study investigates the safety perceptions of victims and witnesses of crime on various bus systems in Belo Horizonte, Brazil. A cross-sectional web-based survey, utilizing a non-probabilistic convenience sampling technique, targeted the population of bus users - students, faculty, and staff at the Federal University of the State of Minas Gerais (UFMG) in Belo Horizonte, Brazil, to analyze the influence of mechanisms of control and surveillance technology on safety perceptions across two distinct bus systems: the conventional bus system and the BRT MOVE system. These mechanisms include secure and enclosed bus stations with security personnel, monitored CCTV video cameras, and surveillance inside buses. Through linear regression analysis, the study hypothesized that participants' perceptions of fear and insecurity within different types of bus systems, across various bus environments - (1) inside the bus, (2) at the bus station, and (3) bus stop, vary based on gender, age, exposure to crime, and frequency of bus use as well as on and the presence of control and surveillance mechanisms. The study addressed limitations, reviewed reliability and validity concerns, and highlighted the impact of various risk factors and socio-demographic factors on riders' safety perceptions at bus stops, on buses, and at stations. These findings contribute to a greater understanding of the challenges facing urban mobility for bus riders in Brazil and offer potential solutions.

Keywords: safety in public transport, bus systems, witnesses and victims' perceptions, crime on buses, surveillance technology, urban mobility, transportaion security, belo horizonte.

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I. INTRODUCTION

Safety in public transportation is a pressing issue in cities worldwide, including Brazil. Over the past few decades, the safety of passengers on buses in Brazil has significantly declined, with a notable increase in robberies and thefts on public transport. A survey carried out by the National Confederation of Public Transport in 2015 revealed that crimes on buses were among the primary concerns for riders, who make up approximately 25% of the country's population. In a 2015 study on crime on buses, Paes-Machado and Viodres-Inoue highlighted the alarming trend of violent and threatening incidents experienced by passengers during bus travel. The researchers indicate that such exposure to criminal activities could have severe consequences on the mental health and behavioral habits of both victims and witnesses. The coercive use of firearms, threats, as well as psychological and verbal abuse, leave victims and witnesses feeling helpless and vulnerable (Paes-Machado & Viodres-Inoue, 2015; Jacobs, 2012-2013).

According to a 2016 study conducted by the National Confederation of Public Transport in Brazil in 2016, which surveyed 100 bus drivers in 169 Brazilian municipalities, armed robbery, physical assaults, and verbal abuse were found to be the most common crimes faced by bus drivers.

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The study also revealed that the fear of becoming a victim of crime ranks as the second most common reason why bus drivers and conductors consider resigning earlier than usual. This situation not only affects the safety of bus drivers but also compromises the overall mobility of the population.

The anxiety and uncertainty among passengers, bus drivers, and conductors are constantly being fueled by the unexpected, rapid, and violent actions of armed youth and young male adults who work in groups of two or three. These individuals are often opportunistic robbers who target buses as a prime location for their criminal activities. They seek immediate results by robbing passengers of their valuables, with electronic devices such as cellphones and money being the most sought-after items (Oliveira, Natarajan & Silva, 2019). Drivers are often familiar with them, as they frequently use the bus system by evading fares or using it as a means to escape after committing crimes. These robbers are known for their swift and aggressive tactics, using guns to intimate and threaten passengers. Victims on buses are particularly vulnerable as they are confined in a small place with limited options for escape, making them easy targets for the robbers (Oliveira et al, 2019).

The impact of bus robberies extends beyond just the immediate victims. These crimes create a climate of fear and insecurity among the population, who may feel unsafe using public transportation. This can have a negative impact on the economy and social fabric of urban centers in Brazil, as people may be less likely to travel or engage in activities that require them to use public transportation. Therefore, a more in-depth analysis is needed in order to gain better control and prevent these issues.

Safety on bus systems has become a top priority for the government in many Brazilian cities. Modern innovations aimed at increasing passenger comfort, safety, and overall efficiency have been introduced alongside traditional bus systems. One such innovation is the Bus Rapid Transit (BRT) system, which was first implemented in 1974 by Jaime Lerner and has since been adopted in major cities like Sao Paulo, Belo Horizonte, Rio de Janeiro, and Goiania.

The BRT system, consisting of large and articulated vehicles, is considered more efficient, predictable, rapid, and comfortable than traditional bus systems. It features modern technologies such as CCTV cameras in buses and stations for 24-hour monitoring, advanced payment systems, redesigned bus stops with automatic doors and turnstiles, segregated bus lanes, and increased physical and personnel surveillance.

Despite the various measures put in place to enhance the efficiency and safety of bus transit environments, the paradox of innovation and perceptions of safety within bus systems remains a prevalent and complex issue. Understanding the factors that influence passengers' perceptions of safety in the public bus system and the implications for urban mobility is essential for addressing security challenges and improving the overall public transportation experience in Brazil.

This study aims to explore the key factors that shape perceptions of safety within the bus system in Belo Horizonte, the seventh largest city in Brazil, which features both the BRT system (known as MOVE) and the traditional bus system. The study offers a unique perspective on the perception of safety among victims and witnesses of robbery on buses in both types of bus system environments, influenced by objective and vicarious victimization.

The BRT system, implemented in 2014 in Belo Horizonte, includes an extensive surveillance system with CCTV cameras and security personnel at all BRT stations, integrated with conventional buses. The goal of this system was to enhance safety on buses and improve urban mobility and public transportation. Despite these innovations, the actual situation on the ground told a different story. Data on bus robberies in Belo Horizonte from 2012 to 2016 showed a notable surge, with reported incidents rising from 882 incidents in 2012 to 2,541 incidents in 2016, according to the public security secretariat of the Minas Gerais state in Belo Horizonte (Secretaria

de Seguranca Publica de Minas Gerais). This represents a 65% increase over a four-year period, indicating a concerning trend of a deteriorating safety in the city and posing risks to passengers.

The prevalence of armed youth and young male adults carrying out robberies on buses has created a climate of fear and insecurity among those who depends on public transportation in Belo Horizonte. According to Oliveira et al. (2019), the modus operandi of these individuals committing crime on buses typically involves boarding buses at bus stops in areas where they can easily make a quick gateway. They often target buses near impoverished neighborhoods known as *favelas* due to the lack of security measures in these areas, where they can blend in and escape without being noticed. This strategic choice of location allows them to evade capture and continue their criminal activities with impunity. Similarly, buses are also targeted in busy downtown areas which are often crowded with passengers, making them as easy target for thieves. These criminals take advantage of the chaos and confusion that comes with the hustle and bustle of downtown areas, making it easier for them to carry out their crimes without attracting attention, particularly at bus stops. Additionally, buses in busy downtown areas are often filled with people who are distracted and preoccupied, making them more vulnerable to attacks.

In an effort to reduce and prevent crime on buses, the municipal Guarda in Belo Horizonte, which is responsible to prevent and control crime on buses has implemented the Safe Trip Operation in 2017 (PBH, 2018). This initiative involves conducting preventive blitzes on buses and increasing patrols on specific routes during times and days considered at higher risk of thefts and robberies. By increasing their presence on buses and implementing targeted security measures, the municipal Guarda is actively working to combat crime and ensure the safety of passengers using the public transport system in Belo Horizonte. By combining surveillance technology, emergency response mechanisms, and targeted patrols the authorities are working to create a secure environment for passengers to travel without fear of crime. While the increase in robberies and thefts on buses is a concerning trend, the efforts being made to address the issue are positive step towards enhancing safety and security of public transport in the city.

Conducted in 2017, this study investigates and contrasts the perception of safety on both the BRT system and the traditional bus system among a convenient sample of bus users - faculty, students, and administrative staff of a local university in Belo Horizonte. While official robbery data does not distinguish between incidents on the BRT system and the conventional bus system, exploring the perception of safety among passengers – both victims and witnesses of crime – provides valuable insights into the relationship between innovation and safety in bus systems.

Based on a cross-sectional web-based survey design, the study aims to answer two primary questions: (1) Does the perception of safety within busy systems vary among riders controlled by factors such as socio-demographic background, locality of residence, exposure to risk (measured by frequency of ridership) as well as exposure to crime (victims and/or witnesses to crime)? (2) Does the perception of safety among riders vary depending on the type of bus system? The hypothesis is that the perception of safety among victims/and or witnesses to crime varies across different bus transit systems. It is expected that individuals' perception of safety will be lower in bus environments (or risky facilities) deemed risky due to a lack of control and surveillance mechanisms. This aligns with the Routine Activities theory (Hollis & Felson, 2013) which posits that enhancing capable guardianship at suitable targets (such as private security and CCTV-monitored cameras) and the implementing control mechanisms at specific locations or high-risk facilities (like bus station managers and staff, and alarm buttons on buses) can help decrease and deter crime.

What constitutes a risky facility is defined by Eck and Clark (2016) as an environment with unique functions that pose a high risk of crime. This is evident in bus stops, which have higher rates of crime compared to other areas within the bus system, such as the buses themselves, as indicated

by Ryan Gale, 2013, and Hart and Miethe, 2014. Risky facilities are also considered crime attractors, as defined by Bowers (2013), due to the concentration of opportunities they provide for criminal activity. In this study, bus systems may not only be considered high-risk facilities but also crime attractors based on the opportunities they present for criminal activities. This may involve the concentration of potential targets confined on buses during transit, making it easy for criminals to commit crimes with little effort and high rewards, such as robbing multiple passengers at once and escaping without consequence.

The study employs a linear regression model to enhance understanding of the impact of exposure to crime and various risk factors on the perception of safety on buses. The findings could aid in developing a broader spectrum of crime prevention strategies and alternative solutions that foster a more compassionate approach to public transit safety. One of the key findings of this study was the variation in the risk of victimization, as indicated by travel frequency, between the two bus systems analyzed. This variance was statistically significant in reducing the sense of security for individuals who were victims or witnesses of crimes in the traditional bus system. In contrast, the municipal BRT MOVE system was found to have more effective surveillance mechanisms in place, aligned with the Routine Activities theory, which deter individuals from engaging in criminal activities. Our argument posits that this phenomenon could be attributed to the infrastructure, maintenance quality, surveillance, and design of bus stops within the BRT systems. These factors my elevate the challenges faced by individuals seeking to engage in criminal activities on buses, serving as variables that warrant further exploration in future research. The findings indicate that the bus's characteristics, coupled with the presence of safety measures and well-designed bus stops, play a pivotal role in shaping the perception of safety.

II. LITERATURE REVIEW

Transport crime (defined as crime related to buses, trains, rail stations, and bus stops) is a significant issue that instills fear and insecurity in millions of individuals who rely on public transportation systems for their daily commutes (Natarajan et al., 2015). In mega cities across Latin America, incidents of robbery, theft, and sexual harassment, especially targeting female passengers on buses, trains, or subways (Yanes-Pagans et al., 2019) represent a major challenge to the provision of safe, efficient, and high-quality public transportation services. The rise of crime within public transportation leads to heightened economic and operational expenses for the city and public transport companies. This escalation results in setbacks, including a decline in the overall quality of ridership, a greater inclination towards using private vehicles, and a subsequent surge in traffic congestion (Newton, 2014). Research highlights numerous shortcomings that impede safety and crime prevention in public transportation, including the lack or inefficacy of protective measures on vehicles, bus stops, and stations, as well as the safeguarding of employees and passengers (Yanez-Pagans et al., 2019). These factors have significant repercussions for the quality of urban mobility, manifesting in heightened stress and anxiety among victims and public transport personnel, leading to increased absenteeism and chronic mental health issues (Sousa et al., 2017).

Nevertheless, as noted by Rader (2017), the perception of fear poses a significant challenge to public security. Various factors, including gender, age, race, and social class are intertwined with the experience of this emotion (Rader, 2017). Fear plays a pivotal role in shaping social dynamics and urban mobility from both political and economic perspectives (Hernandez & Titheridge, 2016; Soto, Orozco-Fontalvo & Useche, 2017). Therefore, the exploration of fear and passengers' perceptions of safety is crucial for the development of more humane and effective safety and prevention policies within the bus safety transit system.

Despite being chronic issues in public transport, particularly in Latin America and other developing regions where buses are the primary mode of transportation (Oliveira et al., 2019), there is a lack of dedicated studies exploring the impact of victimization and insecurity on urban mobility. Few studies have focused on

understanding how these phenomena affect riders and what preventative measures could mitigate the risk of crime. Similar to the prevalence of crime and violence, fear and safety perceptions shape the behaviors of both passengers and transport workers, regardless of whether they have personally experience victimization. According to Van Leirop and El-Geinedy (2017), safety is a crucial component of service quality for transit users, directly influencing the choice of public transportation and impacting decisions such as the timing, frequency, and routes of travel for commuters.

According to Jackson (2011), the perception of fear is a subjective concept influenced by immediate factors that induce fear and feelings of vulnerability, as well as external influences like media coverage. Research by Irvin-Erickson et al. (2020) suggests that factors such as the stage of journey, overcrowding, and visible signs of disorder, such as graffiti, litter, and indications of substance abuse, can impact the fear perception of public transit users. It is important to note, however, that there is not a direct correlation between increasing crime rates and heightened fear and feelings of insecurity. As highlighted by Hummelsheim et al. (2011), anxiety linked to fear can be significant even in areas with low crime rates.

Therefore, fear of crime and perceptions of safety on public transport may not be evenly distributed among the population of users, exhibiting specific temporal and geographic patterns. According to Grohe et al. (2012), fear and insecurity perceptions vary based on socio-demographic and economic factors, such as gender, age, race, ethnicity, education, place of residence, and prior experiences of victimization. Research indicates that women often experience greater levels of fear and insecurity compared to men, despite engaging in lower-risk behaviors (Ceccato, 2017; Soto, Orozco-Fontalvo & Useche, 2017). Similarly, older individuals tend to feel more anxious and vulnerable than younger people, despite having a lower likelihood of being victims of violence and crime (Ceccato & Bamzar, 2016).

According to Badiora, Ojewale and Okunola (2015), the physical characteristics of the environment and the placement of bus stops and stations can play a significant role in heightening fear and insecurity among riders. Fear of crime is also influenced by the time of day, with heightened levels typically occurring at night compared to daytime (Sreetheran & Van Den Bosch, 2014). Furthermore, riders' perceptions of safety are intertwined with the quality of the public transport, encompassing factors such as functionality, environmental features, nearby locations where bus crimes occur, and concerns about violence from other individuals (Oliveira et al., 2019).

Moreover, the dependence on a disorderly environment marked by a absence of guardianship and informal control mechanisms impacts users' susceptibility to crime. The risk of victimization is further shaped by individuals' daily routines, as elucidated by Bunch, Clay-Warner and Lei (2012), contributing to the heightened risk of victimization among certain demographic groups (Bunch, Clay-Warner & Lei, 2012). This dynamic may also clarify riders' embrace of precautionary measures to mitigate the risk of victimization and fear of crime. Such measures could involve altering urban mobility patterns, like decreasing the frequency of public transportation use, opting for different bus routes, or favoring private car usage over public transportation.

In Brazil, while research has delved into the rise of crime in public transport, there remains a scarcity of studies focusing on the safety perceptions of drivers and users within the intricate bus transit system. This system is characterized by the dual traits of modernization and the persistent presence of disorder within the bus transit environment. Further exploration in this area is essential to grasp the nuances of transport crime variation and safety perceptions across different types of bus systems, as well as the overall safety of the bus network. Addressing strategies to mitigate violence and enhance safety on buses poses a significant challenge for government entities, policy makers, law enforcement, and bus companies.

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III. BUS PUBLIC SYSTEMS IN BELO HORIZONTE

The city of Belo Horizonte, capital of the state of Minas Gerais, has one of the highest standards of living in Brazil. However, it faces various challenges when it comes to ensuring the quality of living for over 2.5 million inhabitants as demonstrated by the Brazilian Institute of Geography and Statistics (IBGE), 2017. According to the City Human Development Index, an indicator published in the Human Development Atlas (2020), the city ranks in 18th place among 5.566 municipalities. It is a very privileged position compared to metropolises such as São Paulo (23) or Rio de Janeiro (28). The numbers for the Metropolitan Area of Belo Horizonte (RMBH for short), which integrates 23 municipalities and has a total population of 5.76 million people (IBGE, 2017), are somewhat less flattering. According to the urban welfare index (IBGE, 2017), it ranks 7th among the 16 Brazilian metropolitan areas and 25th among Brazilian municipalities (Ribeiro, 2013).

As for mobility dynamics, Belo Horizonte is a very special case. In Brazil, it is recognized as one of the most advanced cities in terms of its urban mobility projects. In the 1990s, the city was one of the pioneers in the creation of participatory planning projects, which resulted in the conception of the 1996 Urban Master Plan - Law 7165, 1996 (Fontoura, 2014). 1992 saw the creation of Transport Company Transit in Belo Horizonte (Empresa de Transporte e Tansito de Belo Horizonte, BHTANS). In 1995, the city also pioneered the creation of a permanent urban mobility information system (Fontoura, 2014). By 2011, Belo Horizonte was the first city in Brazil to have an urban mobility plan, and two strategies were prepared for the public organ that manages transport planning: the first plan for use until 2020, and the second until 2030. The city also made important investments to implement a transport system based on the Bus Rapid Transit (BRT) system, named MOVE. The system was launched in 2014, the year of the Confederations Cup and the FIFA World Cup, and won the city a Sustainable Transport Award from the Transport and Development Institute (ITDP).

Despite these initiatives to promote public transport, the Transport Company and Transit in Belo Horizonte (BHTRANS) indicates that mobility in Belo Horizonte is marked by a significantly low use of buses and the highest growth in the use of private automobiles in the country (BHTRANS, 2014). According to data from the Origin and Destination Survey carried out in 2012 (SEGEM, 2013), 6.3 million journeys were taken in the city, most of them by car (32.6%) and on foot (34.8%). Public bus transport accounted for 28% of all journeys, and the subway system, only 1.3% (BHTRANS, 2016). The metropolitan area (RMBH) has similar results. These numbers expose a significant deficiency in the use of buses (BHTRANS, 2014).

The decreasing use of public transport constitutes a strong trend in Brazilian metropolitan regions but is even more visible in the metropolitan region of Belo Horizonte, where public transport used to account for 60% of all trips in 2002. Despite the progressive loss of importance given to the demand for public transport, the bus system continues to supply most journeys in the city. The system offered to users is composed of a variety of vehicles and infrastructures with very unequal quality, accessibility, and safety conditions. There are two large transport systems: the conventional bus system and the MOVE BRT system.

3.1 The Conventional Bus System

The conventional bus system is composed of 2,421 buses (currently, as of 2017) that connect neighborhoods in different parts of the city, and particularly, the city center. According to Belo Horizonte Municipal Government (PBH), these buses circulate on streets and stop for passengers to go in or out at specific bus stops with shelters or signage (PBH, 2020). The supplementary system is composed of buses that connect neighborhoods without crossing the city center, with over 312 microbuses operating 27 lines. The "vilas e favelas" service is composed of 12 lines that serve the city's deprived neighborhoods, employing smaller buses. Some lines are equipped with panic and sexual harassment buttons, installed by the City Hall in 2018 in order to

control the incidence of violence, particularly against women (Observatório do Milênio, 2020). These buttons are connected to Belo Horizonte's Integrated Operations Center (COP-BH), which manages all of the city's security cameras.

Conventional bus stops include various types of infrastructure with different levels of quality. On one hand, they can feature the most modern shelters, installed in the busiest areas, with night lighting, electronic display panels with information about routes, and spaces reserved for people with disabilities. On the other hand, there are shelters equipped only with stools for people with disabilities and "info points" – signs placed on poles along city streets.

According to Hasz (2017), the distribution of bus stops and bus lines in the various areas of the city is "very equitable, with a higher concentration in the Center-South zone, covered with a larger number of bus stops due to being the main destination of most passengers" (Hasz, 2017).

As a whole, the coverage of the public transport system is measured by the potential Accessibility Index (AI) of the population. For Belo Horizonte, this index was estimated by Miranda (2018), as the combination of the following numbers: 1) Bus Stop Density Ratio, the ratio between the number of bus stops and the population of each Field; 2) Frequency Ratio, the frequency of the bus lines that pass by each bus stop in a certain Field; and 3) Line Ratio, the number of bus lines that serve each bus stop in a certain Field. Figure 1 (in Appendix), created by Miranda (2018), shows once again the unequal coverage of the city's transport system, especially precarious in peri-urban areas, close to the towns that form the metropolitan area, and highly concentrated in the city center and surroundings.
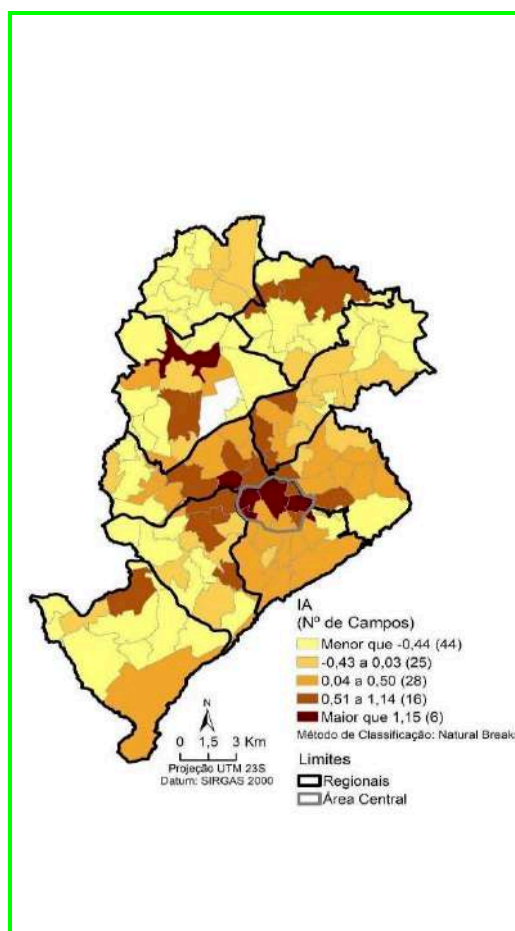
Lessa (2019)

Figure 1: Accessibility Index Map of the Bus Transit System in Belo Horizonte

3.2 The BRT System: MOVE

The execution of the MOVE BRT system started in 2012, due to the city being selected to host matches for the FIFA World Cup. MOVE opened its first line in 2014. The system carries 372,303 passengers every day in the two exclusive corridors currently in operation, with an extension of 39 km (GLOBAL BRT DATA, 2021). MOVE uses the trunk-and-feeder system, which had already been installed as part of the Belo Horizonte Public Transport Restructuring Plan (BHBUS), in operation since 1997; exclusive bus corridors had already been built within the main corridors that connect the city center to the north of the city (BHTRANS, 2013). Thus, the system connects the hyper center to expanding areas of the urban grid, as seen in Figure 2 in the Appendix.
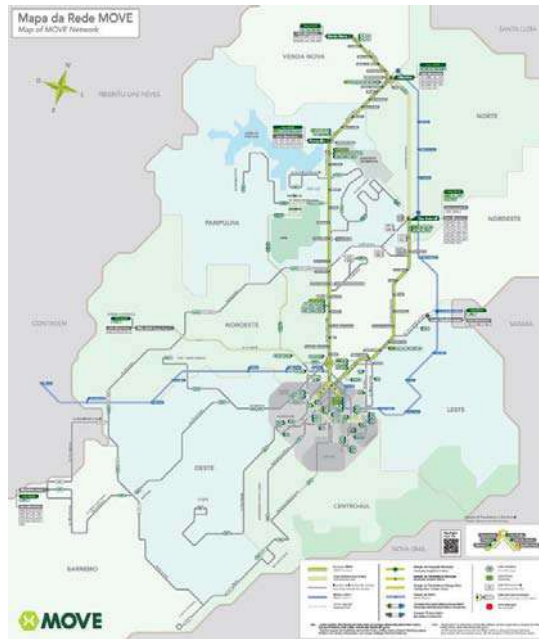
www.bhtrans.pbh.gov.br/move

Figure 2: BRT MOVE System

MOVE is composed of two main corridors, on Antônio Carlos Avenue (14.7 km long) and Cristiano Machado Avenue (7.1 km long), the main axels of the system. In these corridors are exclusive lanes and embarking stations. The stations are divided between transfer and integration stations. Transfer stations (24 in the Antônio Carlos corridor and 9 in the Cristiano Machado corridor) are smaller and are used for either transferring between MOVE lines or for access to surrounding areas (see Figure 3).

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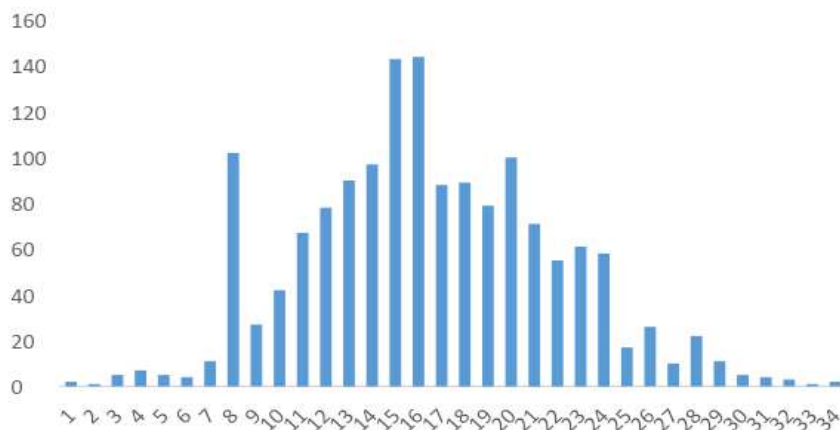
Inside the bus
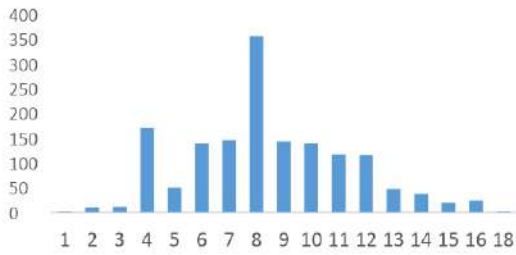
Bus Stations
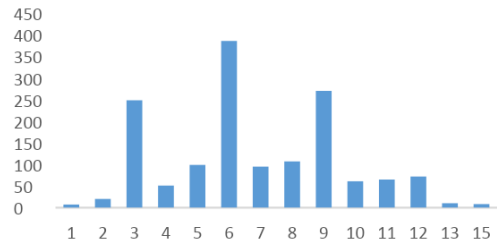
Bus Stops
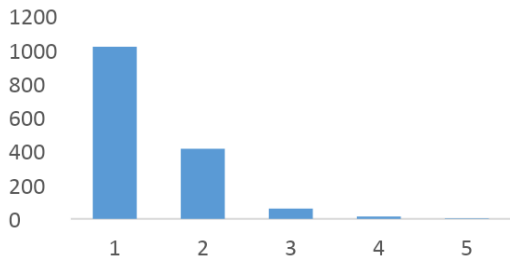
BRT MOVE (Buses & Stations)
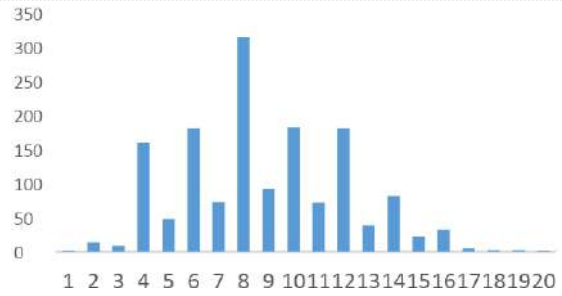
Conv. System (Buses & Stations)
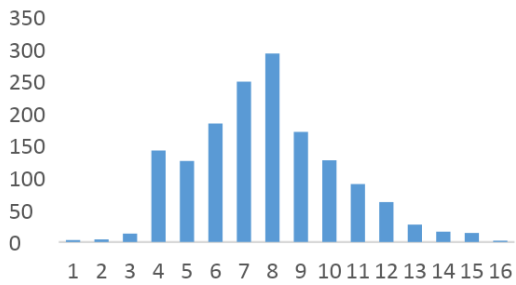
Municipal MOVE (Buses)
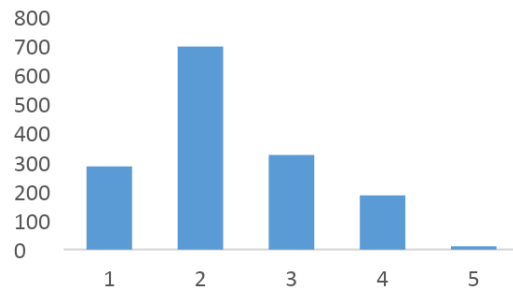
Metropolitan MOVE (Buses)

Municipal MOVE (Stations)

Metropolitan MOVE (Stations)
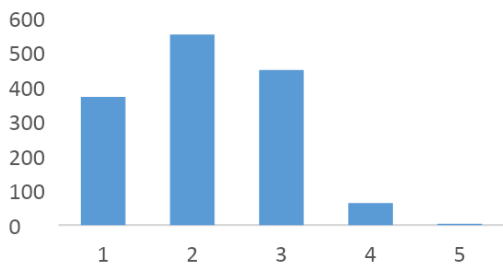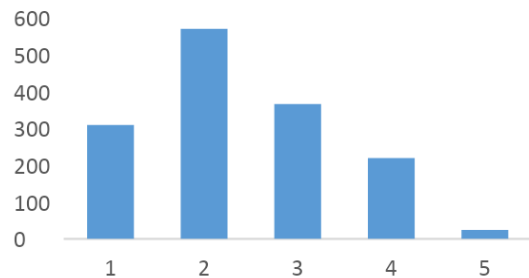
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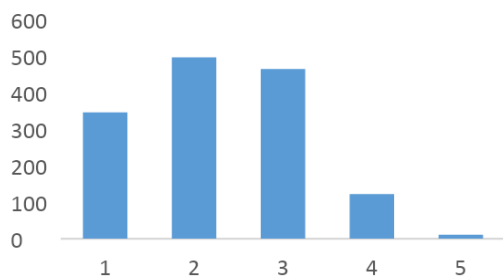
Figure 3: General Model (All Public Transport System Locations)

Integration stations (see Figure 3), on the other hand, are much larger structures that serve MOVE trunk lines and the feeding lines that connect these stations to nearby neighborhoods. The stations are Pampulha, Venda Nova, Vilarinho, and São Gabriel. Vilarinho and São Gabriel also include subway stations and terminals for the metropolitan MOVE system. Of the four integration stations, only Pampulha Station was built as part of the BRT system. The others already operated as part of the BHBUS-trunk-and-feeder system and were adapted when they underwent renovation.

The Antônio Carlos and Cristiano Machado corridors are articulated via a junction on Paraná and Santos Dumont Avenues, in the hyper center. This junction saw the installation of six stations, four for municipal use and two for metropolitan use. Besides exclusive corridors, the system also includes a series of exclusive and preferential lanes for lines that leave segregated lanes and serve other regions.

The MOVE BRT bus system covers not only the city of Belo Horizonte but also its metropolitan area with Metropolitan MOVE, which includes the towns of Santa Luzia, Vespasiano, and Ribeirão das Neves. According to Hasz (2017), the main difference between the conventional system and MOVE is the management of waiting areas, which is more structured in the case of the latter. MOVE bus stations (including Transfer stations and Integration stations) charge customers and control their entry before embarking. These systems are watched by cameras and private security agents hired by the local government. Buses are equipped with GPS as well as panic and harassment alert buttons to control operations and surveil all vehicles in operation. The system is monitored directly by BHTRANS, the Military Police, the Municipal Guard, and the Fire Department via the Integrated Operations Center (COP-BH). Table 1 in the Appendix shows the main differences between the two bus transport systems operating in Belo Horizonte.

Table 1

Features	Public Bus Transport System		
TYPES DESCRIPTION	Conventional and supplementary system	Municipal MOVE BRT	Metropolitan MOVE BRT
COVERAGE	Belo Horizonte, favelas and connecting main streets and neighborhoods	Belo Horizonte. 39 km of extension in two corridors: Antônio Carlos and Cristiano Machado	Belo Horizonte, Santa Luzia, Vespasiano, Riberão das Neves
BUS STOP INFRASTRUCTURE	Open shelters with external signage	Closed transfer stations with automatic doors and turnstiles for passenger circulation. Special stations in buildings to integrate	Closed transfer stations with automatic doors and turnstiles for passenger circulation

		different transport modes and services.	
PUBLIC INFRASTRUCTURE FOR STATION INTEGRATION	Sidewalks	Footbridges or street-level passages, with signs	Footbridges or street-level passages, with signs
LOCATION OF BUS STOP INFRASTRUCTURE	Located on sidewalks of avenues	Located on central lanes of transport corridors	Located on central lanes of transport corridors
SECURITY SYSTEM: CAMERAS	On buses	On stations and buses	On stations and buses
SECURITY SYSTEM: PRESENCE OF GUARDS	No	Private security hired by local authorities	No
OTHER EMPLOYEES	No	Cleaning and entry supervision staff	Cleaning and entry supervision staff
COVERAGE OF BUSES WITH PANIC & HARASSMENT BUTTONS	Partial	All, since 2018. Warnings go to Operations Center	Since 2019, via an app. Great app to connect with Operations Center

IV. METHODOLOGY

This study involves a cross-sectional web-based survey design to investigate and capture the perception of safety on public buses among the academic community and staff of the Federal University of the State of Minas Gerais (UFMG), located in Belo Horizonte, the sixth largest Brazilian city. Web-based surveys, which involve delivering a questionnaire via a hyperlink embedded in the email list, are widely used by researchers and administrators to survey college students due to easy accessibility to this population (Park, K., Park, N., Heo, W. & Gustafson, K., 2019). Web-based surveys provide advantages related to cost reduction per questionnaire, speed of responses, the ability to expand the audience, and facilitating the process of tabulating and analyzing replies. In addition, this method offers greater flexibility to individuals, who may reply at a preferred time and location, as well as access to tools that eliminate issues that may lead to losses, such as a lack of replies that would be detrimental to the survey (Raju & Harinarayana, 2016). Despite advantages for data collection, storage, and analysis, web-based surveys have low rates of responses and selective participation in comparison to other methods (Wengrzik et al., 2016; Heiervang, E. & Goodman, R. 2011).

Target Population and Sampling Technique: The target population consists of a total of 51,189 members of the UFMG. Out of this total, 64% includes undergraduate students (33,056); 21% are graduate students (10,716); 6.2% includes faculty members (3,202), and 8% are administrative staff (4,214) (UFMG.br., 2021). The UFMG community was chosen as a population of interest for this study due to its unique location the outskirts of Belo Horizonte downtown center, which requires accessible public transportation. The campus proximity to a major BRT MOVE corridor (Antonio Carlos Ave) which serves to both municipal and metropolitan BRT buses, made it a convenient location for survey participants. Furthermore, members of the university community regularly use the university's online services, making them easily reachable for the survey. To gather participants, a

non-probabilistic convenience sampling method was utilized, utilizing UFMG's official mailing list which is frequently used for promotion and official communication with students, faculty members, and staff. All members of the target population were personally invited to participate in the survey via an official email, which helped to establish trust in the importance of the research. The email includes details about the survey's principal investigators, in line with the IRB guidelines for participants to contact if they required more information. It also emphasized the confidentiality and anonymity of the data collected. The survey was conducted throughout August 2017 and garnered 1,537 responses, with the majority of participants being undergraduate students (70%) and graduate students (18%).

Majority of faculty and staff did not partake in the survey, potentially due to their preference for private transportation over public options. This discrepancy may also be attributed to the higher number of students in the sample, their greater familiarity with technology compared to older faculty and staff members, and their increased demand for public transportation services.

Data Collection Instrument: A web-based multiple-choice survey conducted through Google Forms was used to gather insights from members of the UFMG community concerning their perceptions of fear, insecurity, and exposure to crime while using buses, along with demographic variables. The choice of a web-based survey was deemed appropriate for this study due to its ability to reach out a broad audience within the targeted participant pool. Prior to commencing the survey, participants were briefed on the study's objectives and requirements, and were requested to provide informed consent by agreeing to the data sharing and privacy policies.

Upon completion, participants accessed the survey directly via the link provided in the email. Subsequently, all survey responses were downloaded as text files and analyzed using SPSS software, version 19, ensuring the utmost anonymity inherent in the web-based survey format, which precludes the identification of sensitive personal information.

To address potential issues related to non-response rates that are common in web-based surveys, efforts were made to increase awareness and participation. The survey and its significance were promoted on the UFMG Facebook page two weeks before its launch and continued throughout August 2017 when the survey was distributed via the university's email list.

Validity and Reliability Concerns: While the target population of UFMG members is generally proficient in using the internet and understanding the requirements of a web-based survey, there were potential validity issues that could arise. Some participants may not open the survey email due to overflowing inboxes, leading to unread messages. Even if all UFMG members were read the official email with the survey's link, there is still a chance that the survey may not be completed in its entirety (Heiervang & Goodman, 2011). As noted by Heiervang and Goodman (2011), reliability issues are also a concern in web-based surveys due to the absence of a trained interviewer. To mitigate these challenges, comprehensive instructions regarding the survey's purposes and requirements were provided on the first page of the survey, along with the primary investigators' contact information for any queries related to question comprehension or technical difficulties in accessing and completing the survey.

In an effort order to enhance reliability, a pre-test questionnaire was circulated to a small group of students for completion. This exercise enabled researchers to detect and address any errors or shortcomings in the questionnaire (Heiervang & Goodman, 2011).

Data Statistical Analysis: A cross-sectional database was utilized for a quantitative and inferential approach, focusing on linear regression analysis (OLS). The safety levels within the bus system were examined across various environments: 1) inside the buses; 2) at the bus station; and 3) at bus stops. Furthermore, variations based on the type of bus system were considered: 1) Conventional; 2) BRT MOVE Municipal; and 3) BRT MOVE Metropolitan.

Respondents used a Likert scale to express their perception of safety within the bus system, addressing various aspects: 1) inside the conventional bus; 2) inside the municipal BRT MOVE bus; 3) inside the metropolitan BRT MOVE bus; 4) at the conventional bus stops; 5) at the municipal integration station; 6) at the metropolitan BRT MOVE transfer station; and 7) the municipal BRT MOVE transfer station.

To evaluate the relationship between fear, insecurity among public transport users, exposure to crime, social-demographic variables, and frequency of public bus transport use, we conducted descriptive data analysis to understand the dataset's composition. This was followed by linear regression analysis to investigate the impact of each dimension on the final variables.

The question designed to assess fear and insecurity among bus users was segmented based on the distinct locations within the public bus system. This approach considered the fundamental disparities in fear and insecurity perceptions between buses and stations, as well as

the variations between the municipal and metropolitan BRT MOVE systems. The question posed was: "On a scale of 1 to 5, with 1= very unsafe; 2 = not very safe; 3 = neutral; 4 = safe; 5 = very safe, how do you perceive the safety level on the bus system?"

To operationalize the dependent variable concerning the perception of safety within different types and environments of the public bus system, the responses were consolidated and scales were aggregated to form the final safety perception measure based on the system's spatial divisions. Figure 3 displays histograms illustrating the perceived security variables. This visual representation showcases the distribution of the response variable for each type and environment associated with the public mobility system examined in this research. Various response variables were generated from the different system spaces to assess the model. The operationalization of the variable involved summing the relevant variables, as detailed in Table 2 in the Appendix.

Table 2: Response variables of the perception of safety in the public transport measurement model.

Focus of Analysis	Response Variable	Composition
All locations	All locations	Conventional Bus + Municipal MOVE + Metropolitan MOVE Bus + Supplementary (conventional) bus + Bus stops (on the street) + Municipal Integration Station + Municipal MOVE Station + Metropolitan MOVE Station
On the bus vs. Bus stations vs. Bus stops	On the bus	Conventional Bus + Municipal MOVE + Metropolitan MOVE Bus + Supplementary (conventional) Bus
	Bus stations	Municipal Integration Station + Municipal MOVE Station + Metropolitan MOVE Station
	Bus stops (on the street)	Bus stops (on the street)
MOVE vs. Conventional System (Buses and Stations)	MOVE System	Municipal MOVE Bus + Metropolitan MOVE Bus + Municipal MOVE Station + Metropolitan MOVE Station
	Conventional System	Conventional Bus + Supplementary (conventional) bus + Bus stops (on the street) + Municipal Integration Station
Municipal MOVE System vs.	Municipal MOVE (Bus)	Municipal MOVE Bus

Metropolitan Bus System (Buses)	Metropolitan MOVE (Bus)	Metropolitan MOVE Bus
Municipal MOVE System vs. Metropolitan MOVE System (Stations)	Municipal MOVE (Stations)	Municipal MOVE Station
	Metropolitan MOVE (Stations)	Metropolitan MOVE Station

Additionally, efforts were made to construct and operationalize the independent variables for the inferential regression model. The independent variables are described as follows:

1) Social-demographic variables: Gender and age are factors that influence differences in bus passengers' fear and safety perceptions. These variables ae essential for implementing targeted and inclusive safety measures within public bus systems.

2) Place of residence: The location of a bus user's residence can impact the availability of public transport services and safety, as well as the duration of their bus system usage. Areas further from the city center often experience longer wait times and more crowded vehicles.

3) Frequency of bus system use: Differences in how often individuals use the busy system can influence their familiarity with key factors that shape safety perceptions and fears, as well as increase their exposure to criminal activities.

4) Exposure to crime: This variable assesses whether bus users have encountered criminal incidents, either as victims, witnesses, or both.

The operationalization of these variables is detailed in Table 3 in the Appendix.

Table 3: Control variables of the measurement model for fear and insecurity in the public transport system

Variable	Options	Operationalization
Victim and/or witness	Yes and No	Dummy variable
Residing in Belo HorizonFte	Yes and No	Dummy variable
Gender	Female or Male	Dummy variable
Age	Open	Continuous variable
Frequency of use of public transport	Once a week; twice a week; 3 times a week; 4 times a week; 5 times a week; 6 times a week; Every day	Scale variable

In examine the impact of gender, age, exposure to crime, and frequency of bus use on safety perception, we conducted a regression analysis that includes the type of bus system and management as crucial variables identified by respondents. The linear regression model was segmented into five sections:

1) Regression analysis was conducted with the safety perception as the dependent variable for all locations within the public bus system.
2) Safety perception was compared between inside the bus and bus stations, as well as bus stops.

3) Safety perception was compared between BRT MOVE (inside the bus and bus transfer stations) and the conventional bus system (inside the bus and bus stop).
4) Safety perception was compared between the municipal BRT MOVE system (inside the bus) and the metropolitan BRT MOVE system (inside the bus).
5) Safety perception safety was compared between the municipal BRT MOVE system (transfer bus stations) and the metropolitan BRT MOVE (transfer bus stations).

The overall model for safety perception across all responses and various subdivisions based on the type of bus system (conventional versus BRT MOVE) and spatiality (limited to the city of Belo Horizonte and its metropolitan network) is presented. Model adjustments can be accessed through the results of the adjusted regression coefficient. Table 5 displays the estimates, standard errors, and test statistic values used to determine the significance of the proposed model's estimates.

V. RESULTS AND ANALYSIS

The survey predominantly attracted female respondents aged between 15 and 39, residing in Belo Horizonte (see Table 4 in the Appendix). Gender and age, besides being key sociodemographic factors, are crucial variables for comprehending mobility patterns and crime prevention strategies (Ceccato, 2017). Moreover, the participants' residential locations highlight disparities in the public bus systems accessible in their respective areas. Notably, bus systems in municipalities within the metropolitan region of Belo Horizonte exhibit notable distinctions in terms of infrastructure, utilization frequency, and proximity to the UFMG campus, a central point of interest for all survey participants.

Over half of the respondents use public transport more than four times a week (and 24% use public transport every day). As for exposure to crime in public transport, including bus stops, stations, and buses, 49.6% of respondents declared they had been victims and/or witnesses of criminal incidents.

The survey results highlight significant disparities in mobility behaviors and safety perceptions concerning sociodemographic factors and respondents' residential regions, aligning with previous research findings (Ceccato, 2017; Ceccato and Bamzar, 2016; Grohe et al., 2012). However, a more thorough examination reveals the considerable influence of the specific type of mobility system, particularly within the bus environment, on shaping perceptions of crime incidence. This influence is closed tied to the infrastructure characteristics provided by public bus systems. In the case of Belo Horizonte, variations in public bus services in terms of quality, coverage, organization, and surveillance present distinct opportunities that may contribute to the occurrence of criminal incidents.

Altogether, Belo Horizonte's public bus transport systems are considered quite unsafe by most respondents (see Table 4). At least more than 50% rate buses and stations as "very unsafe" or "unsafe" spaces. However, it is necessary to point out important variations in relation to the type of mobility system used. In this study we assess the perception of safety not only in the vehicles, but also in the different waiting infrastructures that are part of the service offer.

Overall, our observations indicate that conventional bus system, which operates buses throughout the majority of the city's streets and includes open bus stop shelters, is viewed more unfavorably by participants. Additionally, vehicles within this system were deemed to be more hazardous in comparison to other systems, with 24% labeling them as "very unsafe" and 50% "unsafe." Furthermore, the design of the bus stops, characterized by a lack of physical protection and surveillance, was perceived as "very insecure" by 67% of respondents (Table 4).

Examining Safety Perceptions Across Diverse Bus Systems in Brazil

Table 4: Distribution of Frequency and percentage of the gender, age, place of residence, frequency of use of public transport, and exposure to crime variables

		N	%
Exposure to Crime	Not victim or witness	772	50.4
	Victim or witness	761	49.6
	Total	1533	100.0
Residence City	Other Cities	210	13.7
	Belo Horizonte	1318	86.3
	Total	1528	100.0
Gender	Male	550	36.1
	Female	975	63.9
	Total	1525	100.0
Age Group	15 to 24 years	768	50.0
	25 to 39 years	601	39.1
	40 to 59 years	149	9.7
	60 years or more	18	1.2
	Total	1536	100.0
Frequency of Use of Public Transport	Once a week	170	11.2
	Twice a week	124	8.2
	Three times a week	121	8.0
	Four times a week	115	7.6
	Five times a week	465	30.6
	Six times a week	147	9.7
	Everyday	376	24.8
	Total	1518	100.0

On the other hand, the BRT MOVE system received higher ratings compared to the conventional bus system. Nevertheless, distinctions emerged between the system managed by the municipal BRT MOVE, under the administration of the Municipality of Belo Horizonte, and the metropolitan BRT MOVE system overseen by the state government. As a result, the stations within the municipal system received more positive evaluations, while stations and buses within the metropolitan system were perceived more negatively.

These variations in safety perceptions could be linked to the spatial layout and operational structures of distinct urban mobility systems. The BRT MOVE system features stations that are more secure and enclosed, equipped with dedicated security personnel, CCTV surveillance, and a Municipal Control Center that continuously monitors and supervises these areas. This setup enables more effective deployment of police operations and enhances overall security measures.

The conventional bus system, while providing extensive geographic coverage, relies heavily on

the contextual conditions of its infrastructure locations. Bus stops are typically open spaces, closely connected to surrounding urban areas, and lack institutionalized security measures. Consequently, these spaces may exhibit more variability in terms of potential criminal activities and opportunities for illicit behavior.

To examine variances in perception of safety based on sociodemographic variables, exposure to crime, and frequency of usage, we conducted a regression analysis comparing the type of system and manager. The findings from the regression model presented in Table 5 reveal that across all models, the gender variable, specifically indicating female gender, is negatively associated with the perception of safety. This suggests that female participants in the study generally have a lower perception of safety when using public transportation by bus. Additionally, in cases where it was statistically significant, the age variable exhibits a similar association, indicating that older individuals tend to perceive lower levels of safety within the public transport system, irrespective of spatial location. Conversely, individuals residing in the city of Belo Horizonte demonstrate a higher perception of safety while using public transportation compared to residents and users from other municipalities within the metropolitan region.

Table 5: Distribution of the perception of safety per location type

		Very unsafe	Not Very Safe	Neutral	Safe	Very Safe	Total
On Conventional Buses	N	368	767	294	89	0	1518
	%	24.2	50.5	19.4	5.9	0.0	100.0
On Municipal MOVE Buses	N	286	698	325	186	11	1506
	%	19.0	46.3	21.6	12.4	0.7	100.0
On Metropolitan MOVE Buses	N	371	552	449	64	4	1440
	%	24.1	35.9	29.2	4.2	0.3	100.0
On Supplementary Buses (Conventional System)	N	315	674	365	94	6	1454
	%	21.7	46.4	25.1	6.5	0.4	100.0
Bus Stops	N	1018	415	61	14	3	1511
	%	67.4	27.5	4.0	0.9	0.2	100.0
Municipal Integration Stations	N	310	531	457	145	14	1457
	%	21.3	36.4	31.4	10.0	1.0	100.0
Municipal MOVE Stations and bus stop cabins	N	309	570	366	219	24	1488
	%	20.8	38.3	24.6	14.7	1.6	100.0
Metropolitan MOVE Stations and bus stop cabins	N	346	497	465	122	11	1441
	%	24.0	34.5	32.3	8.5	0.8	100.0

Table 6: Estimates of coefficients, standard error, and level of statistical significance of the linear regression model for the measure of perceived safety in all environments of the public bus transport system

Variables	General Model (All bus environments)	Model 1			Model 2		Model 3		Model 4	
		On bus	Bus stations	Bus stops	BRT (On bus & stations)	Conventional bus (On bus & Bus stations)	Municipal BRT (On Bus)	Metropolitan BRT (On Bus)	Municipal BRT (Bus Stations)	Metropolitan BRT (Bus stations)
Gender (Female)	-,231*** (0,274)	-,194*** (0,149)	-,227*** (0,143)	-,126*** (0,033)	-,231*** (0,165)	-,195*** (0,128)	-,262*** (0,048)	-,143*** (0,046)	-,253*** (0,053)	-,178*** (0,051)
Age	-,098*** (0,015)	-,075*** (0,008)	-,086** (0,008)	**,026 (0,002)**	-,104*** (0,009)	-,059*** (0,007)	-,070*** (0,003)	-,051** (0,002)	-,092*** (0,003)	-,077*** (0,003)
Residence	,081** (0,384)	,090*** (0,209)	,071** (0,200)	**-,014 (0,047)**	,084*** (0,233)	,063*** (0,180)	,052*** (0,067)	,112*** (0,064)	,067*** (0,075)	,101*** (0,070)
Exposure to crime	-,201*** (0,270)	-,219*** (0,147)	-,139*** (0,141)	-,153*** (0,033)	-,198*** (0,163)	-,190*** (0,127)	-,229*** (0,047)	-,217*** (0,045)	-,150*** (0,052)	-,141*** (0,050)
Exposure to Risk (Frequency of use)	-,044* (0,068)	-,055** (0,037)	**-,019 (0,036)**	-,082*** (0,008)	**-,024 (0,041)**	-,069*** (0,032)	-,021 (0,012)	**-,040 (0,011)**	**-,019 (0,013)**	**-,038 (0,013)**

R^2
Adjusted

*Standard error in parentheses below coefficients: *(=90%); **(=95%); ***(=99%)*

Controlling for all other variables, being a victim of crime or witness to crime significantly reduces the perception of safety in bus public transport, with this factor proving to be statistically significant across all models. Moreover, the risk of exposure variable, measured in this study by the frequency of respondents' use of the public bus transport system, is negatively correlated with the perception of safety and attains statistical significance at the 5% level for both model 1 and model 2. In model 1, exposure to risk is inversely linked to the perception of safety inside buses, and when considering both types analyzed (conventional bus and BRT MOVE), this outcome is likely influenced by perceptions associated with conventional buses, as evidenced by the results in model 2.

Furthermore, the coefficient associated with the risk of exposure in model 1 is notably more pronounced concerning the perception of safety at bus stops. This effect is likely attributed to the heightened vulnerability and risk of crime prevalent at these locations. As detailed and illustrated in this study, bus stops are often unprotected spaces for users, typically situated within vehicle lanes, leaving passengers highly exposed and at an increased risk of failing victims to criminal activities.

The coefficients obtained in model 2 pertaining to the risk exposure variable validate the hypothesis that BRT MOVE system, encompassing both stations and buses, provides enhanced security measures (surveillance) for its users. In contrast to the conventional bus system, the perception of safety within the BRT MOVE system does not appear to be influenced by the level of risk exposure. Conversely, the frequency of use by passengers in the conventional bus system is negatively linked to the perception of security within that system, demonstrating statistical significance at the 5% level.

VI. LIMITATIONS AND FUTURE RESEARCH

This study is a cross-sectional analysis of safety perception on various bus systems among members of a local university in Belo Horizonte, and therefore cannot be generalized to the broader population or provide insights into changes in safety perceptions over an extended

period. Safety perceptions may vary over time due to variations in urban characteristics across different locations within the city and other factors, such as media coverage of violence on public transportation, which could heighten feelings of insecurity. Additionally, changes in geographical and temporal mobility patterns of bus riders may impact safety perceptions.

Another limitation of this study is the low number of responses from the target population. This can be attributed to the prevalent tend of email avoidance among students, including avoidance of schools' emails (Ha et al., 2018), which affected the dissemination of the survey. The use of institutional email as the main dissemination method may have hindered participation, as college students are more likely to engage with communication channels such as smartphones apps like WhatsApp, social media platforms, and text messages, rather than emails (Ha et al., 2018). While the research utilized the University's Facebook page to promote the survey, it could have expanded its reach by leveraging other popular networks like LinkedIn, Instagram, and Twitter, which are widely used for easy connection and communication (Shane-Simpson et al., 2018). Utilizing these platforms could have increased the visibility of the survey and encouraged greater engagement, particularly among college students.

Additionally, by focusing solely on two indicators of victimization - exposure to crime and frequency of bus system use - this study is limited in its ability to identify other potential variables, such as the adoption of protective measures by respondents, that could have influenced their safety perceptions across the different bus systems analyzed. Furthermore, the research lacks a comprehensive analysis of how environmental and situational factors, both within the surrounding environments during bus journeys and within the bus systems themselves, from students' residences to the university, may have impacted safety perceptions. This could involve a detailed examination of the design of buses, bus stations where passengers embark and disembark, as well as the physical and social factors present at various bus stops along the journey. Previous studies have demonstrated that feelings of

insecurity and fear among riders can be influenced by the physical characteristics of the public transit environment, particularly for women and the elderly (Grohe et al., 2012). Factors such as enclosed stations that limit visibility, inadequate lighting, isolated locations, and nearby areas with alleys and secluded spots could all contribute to these perceptions (Haans & De Kort, 2012).

Future research could expand beyond environmental variables to explore narratives of passengers regarding the quality and safety of their bus travels. Incorporating qualitative data would provide a deeper understanding of why safety perceptions vary across different bus systems analyzed in this study. Investigating the safety perceptions of victims and witnesses of various types of crimes on buses, including robbery, theft, and sexual harassment, would enhance comprehension and comparison of different patterns of criminal activities on bus systems. This approach could facilitate the design of more effective prevention and reduction measures to ensure safer bus trips.

VII. CONCLUSION

In conclusion, this study addressed the primary research questions by revealing that the perception of safety among bus riders is influence by factors such as individuals' sociodemographic background, place of residence, frequency of bus usage, and experiences with crime (as victims and/or witnesses). Age and gender were found to have a significant negative association, with older individuals and women generally exhibiting lower perceptions of safety within the public bus transportation system, irrespective of its type or location. Conversely, residents of Belo Horizonte exhibit a higher perception of safety in public bus transportation compared to residents and commuters in other municipalities within the metropolitan region. When all other variables are taken into account, being a victim or witness of crime significantly diminishes the perception of safety in public transport, with this variable proving to be statistically significant across all models. Additionally, the frequency of respondents' use of public transport serves as an

operationalized measure for the risk of exposure in this study.

While respondents generally view the bus system as unsafe, the perception of safety among riders is shaped by the presence or absence of control mechanisms in various types of buses and bus waiting facilities, particularly in the case of conventional buses and the BRT MOVE system. Conventional buses are often perceived as unsafe and risky compared to the diverse range of control mechanisms offered by the BRT MOVE system.

One of the key findings of this study is the variation in the exposure to the risk of victimization, as measured by the frequency of travel use, between the two bus environments examined. This exposure was found to be statistically significant in decreasing the sense of security among victims and/or witnesses of crime in the conventional bus system. In contrast to the municipal BRT MOVE system, the conventional bus system lacks effective surveillance mechanisms that could deter potential offenders, as proposed by the Routine Activities theory. We posit that this disparity may be attributed to factors such as infrastructure, maintenance quality, and the design of bus stops, which should be taken into account in future research. The results underscore the importance of considering the characteristics of the bus itself and bus stops as critical factors in shaping the perception of safety for bus riders.

Specific prevention policies and practices should be implemented to enhance the perception of safety on the conventional bus system. These measures should prioritize the design of safer infrastructures that promote increased guardianship over riders and surveillance through the use of technology, private security, and place managers. For instance, drivers could utilize alert buttons to send customized signals to bus companies, the Guarda municipal, and police departments in case of incidents on buses. Additionally, customized LED alert message signs could be displayed simultaneously on exterior message boards on the front and rear of buses. While these recommendations may have seemed novel when this study was conducted in 2017,

similar strategies have been adopted in bus systems in Belo Horizonte and other cities in Brazil in subsequent years. For example, in 2018, BHTRANS in Belo Horizonte took further action by installing "panic buttons" on bus driver dashboards, enabling drivers to alert authorities in cases of sexual harassment. Female victims of such incidents can communicate with the driver, who can immediately activate the panic button. Once activated, this button sends an immediate alert to TransFacil (Consortium of bus companies), the coordination of COP-BH (Integrated Operations Center linked to the municipal security and prevention secretariat) and the representative of BHTRANs at the operations center. Police officers and the Guarda municipal are then notified to take necessary measures.

Similarly, panic buttons have been developed for use in case of robberies, theft, and kidnapping on buses. The concept of implementing panic buttons emerged in 2023 and was initially tested on buses in Cubatao, a city in the state of Sao Paulo. When activated, the button automatically sends an alert to authorities, and a message is displayed on the exterior front board of buses. The use of panic buttons was formally regulated at the national level through bill 685/22 and approved by the Senate. However, it is still pending approval by the Chamber of Deputies and requires sanction by the President of the Republic of Brazil. Additionally, municipal adoption and implementation of the panic button system depend on regulations through local laws. The city of Brasilia, the capital of Brazil, deemed this measure unconstitutional and vetoed the use of panic buttons on local buses. Despite the bureaucratic processes and political debates surrounding the use of panic buttons, the idea appears promising as a deterrent mechanism that may increase risks for criminals.

Alternative situational crime prevention methods for preventing and controlling crime on buses include utilizing crime reporting apps and implementing electronic and digital ticketing systems to reduce cash circulation. The installation of metal detectors on bus doors can help prevent the presence of weapons on buses

and deter criminal activity. While facial recognition and biometric identification have been proposed, ethical concerns regarding privacy and surveillance must be addressed before widespread implementation. Further research is necessary to understand riders' perceptions of safety and the intricates of different public bus mobility systems, considering factors such as location and integration within urban spaces. Other aspects to consider that could enhance the effectiveness and inclusivity of safety measures on public bus systems include: evaluating the presence or absence of safety mechanisms inside buses, stations, and bus stops; examining the interconnectedness between safety perceptions and the surrounding environment during bus journeys; and assessing the effectiveness of place managers and capable guardianship in various bus systems environments.

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Unleashing the Power of the Belt and Road Initiative: Transformative Challenges for China and its Dynamic Partners

MSc. Dan Tshiswaka Dan

ABSTRACT

2015 marked a significant milestone for China's economic development, as its outbound investment surpassed inbound investment for the first time. This shift was driven by various factors, including a mature demographic transition, slower internal migration, and diminishing returns on physical capital investments. As a result, China's competitiveness in low-wage manufacturing exports was declining, necessitating a new growth model. China launched the Belt and Road Initiative (BRI) in response to these challenges in 2013.

The BRI's initial stages took place in Kazakhstan and Indonesia, two developing countries strategically chosen based on economic history, geography, and demographics. The overarching goal of the BRI is to not only drive China's development but also create new opportunities for other developing nations.

Keywords: NA

Classification: JEL Code: F21

Language: English

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The BRI's initial stages took place in Kazakhstan and Indonesia, two developing countries strategically chosen based on economic history, geography, and demographics. The overarching goal of the BRI is to not only drive China's development but also create new opportunities for other developing nations.

A key aspect of the BRI is the concept of "patient capital," which involves concessional investments and foreign aid. This approach allows China to support other countries' development while facilitating the internationalization of its financial sector and strengthening the renminbi's role in the global economy. China's experience with foreign aid and its economic development provides valuable lessons that shape the ongoing form and trajectory of the BRI. By leveraging these insights, the BRI aims to promote sustainable growth, infrastructure development, and economic cooperation among participating countries, fostering mutual benefits and shared prosperity.

London Journal of Research in Management & Business

Overall, the Belt and Road Initiative presents a transformative opportunity for China and other developing nations to collaborate, enhance connectivity, and drive inclusive economic development on a global scale.

In this article, we highlight the benefits that the BRI brings to China in terms of economic development, international cooperation, and enhancing its global influence. The BRI represents a transformative opportunity for China and its dynamic partners, addressing the challenges they face and opening up new paths for mutual growth and sustainable development.

I. INTRODUCTION

The Belt and Road Initiative (BRI), initiated by China in 2013, holds immense transformative potential for global trade and connectivity. It has emerged as a catalyst for enhanced economic cooperation and regional integration. The BRI envisions rejuvenating ancient trade routes, connecting Asia, Europe, Africa, and beyond through a vast network of infrastructure projects, including roads, railways, ports, and pipelines. By investing in these initiatives, the BRI aims to facilitate trade, enhance connectivity, and promote economic collaboration, offering new horizons for market expansion, investment attraction, and innovation for China and its dynamic partners.

For China, the BRI serves as a platform to extend its economic influence and secure crucial supply chains. It enables China to forge closer ties with participating countries, enhancing trade flows and creating new avenues for investment. Additionally, the BRI aligns with China's vision of transitioning from a manufacturing-based economy to a knowledge driven, innovative powerhouse. Through technology transfers, research collaborations, and capacity-building initiatives, China aims to stimulate economic growth and promote regional interconnectedness, fostering a future driven by knowledge and innovation.

The benefits of the BRI extend beyond China's borders, offering participating countries the opportunity to unlock their economic potential

and foster regional integration. The initiative promotes infrastructure development, attracting investments, improving transportation networks, and boosting trade. Moreover, the BRI facilitates cultural exchanges, knowledge sharing, and people-to-people connections, fostering greater understanding and cooperation among nations. Despite challenges such as debt sustainability and geopolitical complexities, the transformative benefits of the BRI outweigh the concerns. By leveraging the BRI's potential, China and its dynamic partners can harness economic opportunities, stimulate growth, and pave the way for a more interconnected and prosperous future.

1.1 Utility of the Article

Announced as the largest infrastructure project in history, the Belt and Road Initiative is often compared to a 21st-century Marshall Plan. The significant rebalancing that this initiative would bring to global trade, along with the increased risks of debt it could cause in many partner countries, raises long-term questions, particularly at a time when concerns about a sharp deceleration in the Chinese economy are growing [1].

Announced in the autumn of 2013 by President Xi Jinping, the Belt and Road Initiative (BRI) is a project for a regional infrastructure network initiated by China and extended across the majority of the Eurasian continent. Encompassing projects in land, maritime, energy, and communication infrastructure through six "corridors," this ambitious initiative is part of China's overall strategy for the "Chinese Dream," which President Xi Jinping has pursued since taking office in 2012, aiming to increase China's international standing.

At a time when Chinese economic growth is slowing down, the central idea of this initiative is to enhance trade links with the rest of the Eurasian continent and seek new outlets for an industry that is experiencing structural overcapacity. Beyond promoting infrastructure projects, the BRI has the general goal of increasing connectivity and cooperation with member countries, particularly by encouraging

greater financial integration and reducing trade barriers [2].

1.2   A Substantial Budget for an Extensive Initiative

The difficulty in assessing the extent of this initiative lies in its lack of clarity. The boundaries of the Belt and Road Initiative (BRI) have not been clearly defined, and numerous projects are associated with it, to the point that the initiative is increasingly seen as part of the broader policy of the Chinese Communist Party or even as a philosophy of China's international development. The BRI was officially included in the Chinese Communist Party's constitution during its 19th National Congress in October 2017[3].

The actual budget allocated to the BRI is difficult to estimate, although most studies mention a range of $800 to USD 900 billion for projects currently underway or under consideration. Geographically, the BRI consists of two main components [4]:

- The "Belt" refers to the development of six land corridors (road and rail) primarily towards Southeast Asia, the Middle East, and Europe.
- The "Road" refers to the development of maritime routes and port activities along the entire Indian Ocean rim, extending to Europe via the Red Sea.

Also known as the "New Silk Road," this initiative has the symbolic aim of reviving the historical Silk Road, which dominated Asia-Europe trade until the 15th century. Covering 68 countries representing 65% of the global population and 40% of the world's GDP, the BRI primarily aims to address a significant infrastructure deficit in the regions involved. According to the Asian Development Bank, the infrastructure needs (energy, transportation, telecommunications, water, and sanitation) for the Asia-Pacific region amount to USD 1.7 trillion per year by 2030 to

sustain the region's current growth rate [5]. Many Central Asian countries lack the necessary finances and industrial capacity to invest in the required infrastructure improvements.

Moreover, only a limited portion of the funding provided by current development institutions (primarily the Asian Development Bank) is allocated to infrastructure [6]. To address this, several financial institutions have been established to provide financial support for project development, with the New Silk Road

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Unleashing the Power of the Belt and Road Initiative_Transformative Challenges for China and its Dynamic Partners

Fund (NSRF) and the Asian Infrastructure Investment Bank (AIIB) being the two main ones [7]. The NSRF, primarily funded by the Chinese sovereign wealth fund China Investment Corp., as well as the two state-owned banks, the Export-Import Bank of China and China Development Bank, operates as a development fund with a capital of USD 40 billion [8]. It differs in structure from the AIIB, a multilateral organization developed by 57 countries, including 37 in Asia, with a capital of USD 100 billion [9]. Both institutions aim to finance infrastructure projects in the countries participating in the BRI through loans (AIIB) and equity investments (NSRF) [10, 11, 12]. Similarly, a policy of facilitating regulations for Chinese companies investing overseas has resulted in a significant increase in Chinese investments in the Asian region [13].

1.3 What Effects on the Involved Countries?

The primary goal of the Belt and Road Initiative (BRI) is to promote trade among its participating members. As highlighted by Ruta and Boffa, trade between BRI members and the rest of the world has already increased significantly over the past thirty years. Driven mainly by intermediate goods, this increase masks a significant disparity between dynamic regions (East Asia and Europe) and regions that are still weakly integrated (MENA and Central Asia). This increased integration is also seen at the level of value chains, with value-added production being more dispersed among partner countries. However, BRI exports are still heavily dependent on value-added from non-BRI countries. For example, in the electronics sector, half of the value-added from BRI countries comes from abroad, with two-thirds of it coming from countries outside the BRI [14].

The advantage that the BRI could provide in terms of reducing trade costs could be particularly significant for intermediate goods, as they cross borders multiple times between production sites, resulting in multiplied productivity gains. Beyond the trade benefits it would generate (Djankov, Freund, and Pham show that each additional day a product spends waiting to be shipped reduces trade flows by 1%), reducing transit time could also improve connectivity for regions that are not well integrated into global trade flows, through increased regional trade and investment. The benefits for the local populations in these countries, including poverty reduction, could therefore be substantial [15].

Thus, as demonstrated by Baniya, Rocha, and Ruta using a gravity model and comparative advantage analysis, the infrastructure alone of the BRI would lead to a 4.1% increase in trade flows between member countries (simulation before and after the implementation of infrastructure). When including trade reforms such as tariff reductions, removal of technical trade barriers, and a common regulatory framework, this effect would triple. Finally, the gains would be most significant for countries that benefit the most from new infrastructure (such as Myanmar, Laos, and Thailand) and countries that are highly integrated into global value chains (countries producing products that require fast delivery, such as Bangladesh or Kenya) [16].

1.4 A "safety valve" in the context of the "new normal"?

The "Belt and Road" initiative can also be analyzed within the context of China's ongoing structural deceleration process. Reflecting China's interest in achieving slower but more stable long-term growth ("higher quality" growth) through more mature economic structures, this "new normal" is also evident in other strategic plans such as "Made in China 2025," announced in 2015. The goal of this plan is to advance the Chinese industry in the value chain through massive investments in high-value-added sectors like information technology, robotics, and green energy [17].

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Chinese growth towards a "new normal"

source: IMF World Economic Outlook, BSI Economics
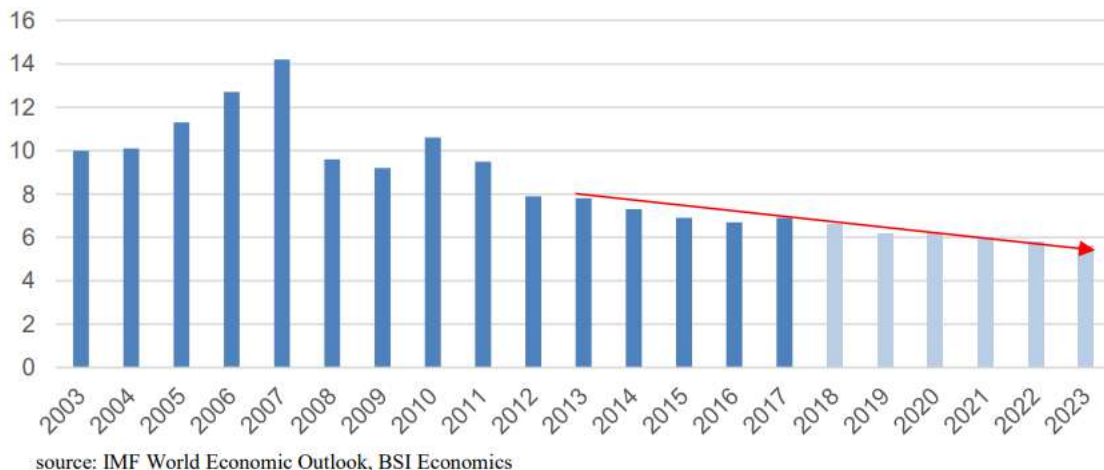
The situation of overcapacity in many Chinese industries, particularly steel, cement, aluminum, and green energy, ten years after the 4 trillion-dollar stimulus package implemented after the financial crisis, requires the development of new export markets in the context of credit tightening and weak domestic demand. As highlighted by the Lowy Institute [18], moving Chinese production sites to Belt and Road Initiative (BRI) member countries would address this overcapacity problem while also promoting the Chinese industry and economic growth in partner countries through technology transfers associated with these relocations.

Similarly, in the context of potential trade conflicts and protectionism between China and the United States, the search for new outlets through the Belt and Road Initiative is essential for safeguarding Chinese exports [19]. Therefore, the combination of bilateral trade agreements and infrastructure financing aims to stimulate increased external demand for Chinese products and enable China to protect itself against a deterioration in domestic demand or protectionist policies from its trading partners [20].

1.4   What Viability of the Project?

The security aspects of the Belt and Road Initiative (BRI) raise significant concerns. A large part of the BRI's land corridor passes through countries in Central Asia that face important security challenges, including terrorism risks. Additionally, the Chinese region of Xinjiang,

through which the BRI also extends, experiences ongoing political and social instability. While the Chinese government hopes that the economic growth resulting from the BRI will contribute to better integration in these regions, the security risks associated with the project raise questions about its viability [21].

Broader geopolitical risks must also be taken into account, such as the risk of currency inconvertibility, transfer blockages, nationaliza-tion, expropriation, and political or social instability in countries where political risk is often high [22]. The example of the Myitsone Dam in Myanmar, a $3.6 billion project funded by China that has been blocked by the military government and remains stalled, illustrates this risk. Furthermore, the potential discontent among local populations towards Chinese companies (such as the employment of Chinese workers at the expense of local populations or land sales to Chinese investors) further adds to the overall viability risks of the BRI.

The financing of the BRI itself is also a matter of concern. With $900 billion of projects (under development or consideration), primarily financed by public or commercial banks, credit rating agency Fitch warns that political motivations behind project selection and the substantial entry into unpredictable markets could lead to resource misallocation and a significant increase in non-performing loans [23]. Moreover, the potential impact of loans on the economies of recipient countries, many of which

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have low sovereign ratings, raises questions about the sustainability of the BRI for these countries. The low level of foreign reserves to finance

Countries that are unsustainable in terms of their debt

projects, often denominated in renminbi, as well as the sometimes massive indebtedness, represent significant points of risk [24].

AAA 3%
not rated 15%
AA+ to AA- 12%
A+ to A- 10%
B- to B- 24%
BBB+ to BBB- 19%
BB+ to BB- 16%

Investment grade

speculative grade
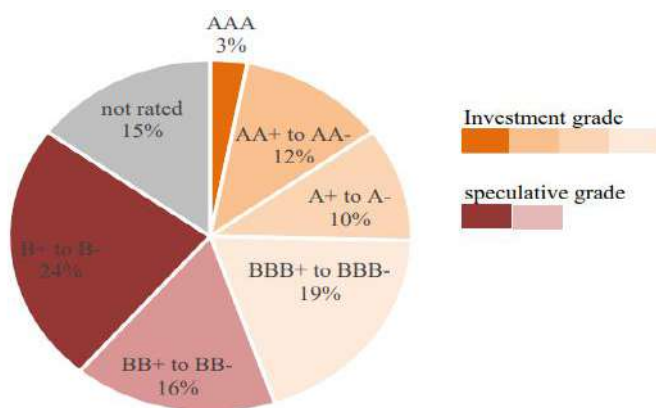
This graph is based on the lo ng-term sovereign ratings from the three major credit rating agencies (S&P, Moody's, and Fitch) for countries participating in the Belt and Road Initiative (BRI). In cases where multiple rating agencies have assigned a rating[25].

Finally, the concentration of the Belt and Road Initiative (BRI) on infrastructure investments raises concerns about the lack of consideration for necessary institutional reforms to successfully execute the projects. As highlighted in an analysis by the World Bank, countries in Central Asia often rank low in the Doing Business report, indicating challenges in the business environment. This raises questions about the profitability of future projects in the absence of complementary reforms aimed at improving institutions and the political framework.

Similarly, the lack of consideration for the environmental impact of BRI projects, as emphasized in another World Bank report, could lead to additional costs, particularly for energy and transportation-related projects. Failure to address environmental concerns adequately can have long-term consequences and sustainability implications for the affected regions [26].

It is important to note that these concerns highlight the potential risks and challenges associated with the BRI. However, it is also essential to consider that the initiative is a complex and evolving endeavor, and efforts may be made to address these issues as the projects progress.

1.5 A vector of expansion for China?

Even though economic factors remain at the core of the Belt and Road Initiative (BRI), it can also be analyzed from a geopolitical standpoint. Firstly, within China, the integration of the western regions of Xinjiang and Yunnan through increased trade facilitated by the BRI represents a key to the country's political stability. This is particularly relevant in light of the Uighur population, as the economic opportunities presented by the BRI could contribute to better integration. Similarly, as highlighted in an article by BSI Economics, China's desire to reduce its dependence on maritime supply routes, which are primarily secured by American military presence, also explains its massive investments in port infrastructure in the Asian region [27].

Externally, the BRI tends to be perceived as a means for China to expand its global influence, particularly vis-à-vis the United States, which sees the development of the AIIB and the NSRF as a way to compete with the institutions established under the Bretton Woods system, such as the World Bank and the IMF. The growth in the use of the renminbi in trade, investment, and other financial activities is also a goal for China through the BRI, with the inclusion of the currency in the IMF's basket of reserve currencies in 2015 serving as a promising first step in this direction [28].

The "pivot to Asia" policy pursued by President Obama has adapted to China's increasing power, leading to expanded American involvement in the region (diplomatically, militarily, and economically). This approach was also continued by the Trump administration with its "Free and Open Indo-Pacific" policy, which includes a project to develop alternative infrastructure in partnership with Japan, India, and Australia as a response to the BRI. The frequent comparison made between the BRI and the Marshall Plan reflects the prevailing skepticism towards the project, which is primarily seen as politically motivated by China to gain a dominant position regionally and globally.

One can also speculate that the BRI is a way for China to export its economic model. China has developed based on an infrastructure-driven growth model, with the belief that dedicating a significant portion of the budget to long-term assets (transportation, energy, social infrastructure) would enhance long-term economic performance (technological innovation, improved social inclusion, etc.) and create an environment conducive to private sector development. The World Pensions Council contrasts the rapid development of China and other Asian economies based on this model (such as Singapore and South Korea) with Latin American economies that adhere to the Washington Consensus and face obstacles to development due to insufficient infrastructure.

The potential for China to influence the finances of recipient countries is also a cause for concern, leading to the development of the term "debt trap diplomacy." The lack of transparency regarding the conditions and amounts of loans granted by China raises questions about its intention to extract economic and/or political concessions when debtor countries are unable to fulfill their debt obligations, particularly when the financing is tied to an asset. The example of the Sri Lankan port of Magampura Mahinda Rajapaksa, which was 85% financed by the Export-Import Bank of China at an annual interest rate of 6.3%, is indicative of this concern [29].

Indeed, when Sri Lanka was unable to finance its debt following the commercial failure of the port, it was leased to China for 99 years, reinforcing Indian and Western concerns that it could become a Chinese naval outpost in the Indian Ocean. Sri Lanka is not the only example of a "white elephant" project financed by China in a heavily indebted country. The Center for Global Development has identified several countries for which the risks of current debt unsustainability and increased dependence on Chinese debt were exacerbated, leading to a significant risk of default due to BRI projects. The case of African countries is also questionable, as data from the China-Africa Research Initiative shows that Chinese loans to all African countries increased from $130 million in 2000 to $30 billion in 2016. However, the same report demonstrates that Chinese loans are not (yet) the primary cause of over-indebtedness in these countries [30,31].

II. CONCLUSION

Effective coordination in BRI investment is paramount for the success of this ambitious initiative. Rooted in President Xi Jinping's foreign policy, the Belt and Road Initiative (BRI) aspires to elevate China's global stature by fostering a regional community with shared interests and destiny. For partner nations grappling with infrastructure deficiencies, increased trade and investments promise significant economic growth and inclusivity. However, concerns loom over the associated risks, particularly reliance on Chinese debt and the potential for political, security, social, and environmental vulnerabilities. These risks encompass political instability, corruption, and terrorism, casting doubts on the initiative's viability without complementary reforms to bolster institutions and the political framework.

Western nations view the BRI with apprehension, fearing it serves as a vehicle for China to extend its global influence. Massive investments without economic justification in financially and politically fragile countries could render the initiative a colossal "white elephant." However, amidst these challenges, there is a profound recognition: China, by engaging in the BRI, willingly assumes significant risks by investing in

unstable economies. This underscores the critical need for strengthened partner coordination to ensure mutual benefits.

Acknowledging shared risks reinforces the notion of collective responsibility in driving the initiative's success. Navigating these uncertainties for the collective good is courageous on China's part, demonstrating a commitment to a common cause that merits recognition and applause. Therefore, fostering better coordination mitigates risks and underscores the collaborative spirit essential for realizing the BRI's transformative potential.

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The University Beyond its Walls: Expectations of Community Leaders

Dr. Wagner Ragi Curi Filho

ABSTRACT

This study aimed to evaluate the perception of the community about the impact of a university. It is also expected to contribute to the consolidation of mechanisms that aim to evaluate the perception of the impact of the university on the community. To this end, 30 interviews were carried out with community Leaders from different segments of society. The themes considered in the interviews were guided by a conceptual model that considers three types of impact: socioeconomic impact, scientific and technological impact, and impact on the region's culture and image. The model also addresses the idea of the outputs and inputs of a university. The outputs are products and services that universities generate for the Community (Eg. Graduates or projects), and the inputs are the demands that a university has from the community (Eg. Public policy). The answers were systematized searching to identify the positive impacts, negative impacts, and elements that the community sees as the university's omission. In the group "Positive impact" highlighted the following elements: The existence of projects, impact on the economy, formal education available, and image of the region associated with the university's positive actions. The group "Negative impact" is related to the connection made to the presence of universities with a rise in drug use, loud noise, and disturbance of the peace in addition to the rise in the cost of living and the negative image of the region associated with the facts negative events that occurred at the university.

Great Britain Journals Press

London Journal of Research in Management and Business

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ABSTRACT

This study aimed to evaluate the perception of the community about the impact of a university. It is also expected to contribute to the consolidation of mechanisms that aim to evaluate the perception of the impact of the university on the community. To this end, 30 interviews were carried out with community Leaders from different segments of society. The themes considered in the interviews were guided by a conceptual model that considers three types of impact: socioeconomic impact, scientific and technological impact, and impact on the region's culture and image. The model also addresses the idea of the outputs and inputs of a university. The outputs are products and services that universities generate for the Community (Eg. Graduates or projects), and the inputs are the demands that a university has from the community (Eg. Public policy). The answers were systematized searching to identify the positive impacts, negative impacts, and elements that the community sees as the university's omission. In the group "Positive impact" highlighted the following elements: The existence of projects, impact on the economy, formal education available, and image of the region associated with the university's positive actions. The group "Negative impact" is related to the connection made to the presence of universities with a rise in drug use, loud noise, and disturbance of the peace in addition to the rise in the cost of living and the negative image of the region associated with the facts negative events that occurred at the university. Finally, there are the answers that were classified in the "University Omission" group. What stands out in this group are the absence of the university in the community, the institution's difficulty in inserting itself in the local context, the difficulty in carrying out projects, the low effectiveness of university means of communication, and the low effectiveness of university participation in municipal bodies and councils.

Keywords: impact of a university, community leaders, perception about the impact of the university.

I.   INTRODUCTION

The universities relate to the local community in the region where they are located (Silva, 2006). This relationship occurs through various possibilities, such as jobs generated by the institution, a rise in the number of local youth access to higher education, or projects carried out by the university (Georgen, 1998; Jain, George, & Maltarich, 2009; Leten, Landoni, & Looy, 2014).

In the face of the various ways that a university can impact the community, studies have been conducted to identify how this impact occurs (Harrison & Turok, 2017). However, there is a slight evaluation of how communities perceive this impact. It is also worth noting that although there are works that evaluate the impact of a university on the local community, there is no consensus on the types of impact that a university provides for its community. However, the literature review by Curi Filho & Wood Jr (2021) identified that the impact generated by a university in its community can be grouped into three types: socioeconomic impact, scientific-technological impact, and impact on the image of culture and the region.

Considering that identifying how a university impacts its community is a recurring concern of the managers of these institutions and given the questions about what these impacts are, this study seeks to address this gap by evaluating how the

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impact of a university is perceived by its community. To this end, this work evaluates the responses of 30 interviews with community Leaders from two cities in the interior of Brazil, where academic units of a public university are located.

The interview script was organized considering the idea that the university-community relationship has outputs and inputs. The outputs are the products and services that a university provides to the community, and inputs refer to the demands that the institution benefits from society. The inputs and the outputs were considered for socioeconomic impact, scientific-technological impact, and impact on the image of culture and the region.

This work comprises seven sections, with the first being this introduction. The second provides a brief literature review of the three types of impact mentioned. The third section is dedicated to presenting the methodology. The fourth and fifth sections present the results and analyses, respectively. Following that, there are the final considerations and references.

II.   THEORETICAL REVIEW

2.1 Socioeconomic Impact of Universities

The first group comprises the works of Mcnicooll, Kelly, & March (2008), Kureski & Rolim (2009),

and Tarocco et al. (2014), in which analyses of the socioeconomic impact of universities are conducted using a quantitative methodology called input-output. This methodology used a mathematical model to evaluate university expenditures by comparing them with data from the economy of the studied region. Still, from a quantitative perspective, Bessete (2003) suggests calculating the return on investment for each university project, Ohme (2003) argues that one way to analyze the impact is by comparing university data with local economic data.

The second group is composed of the works of Steinaker (2005), Taylor & Cox (2006), Kureski & Rolim (2009), Huggins & Johnston (2009), and Lendel (2010). These works emphasize that the analysis of the socioeconomic impact of a university should be carried out using a mixed methodology. The authors highlight the importance of understanding the diversity of the outputs and inputs that there are in the relationship between the university and the local community. Thus, for these authors, in addition to collecting and analyzing quantitative data, it is necessary to analyze variables such as human capital produced by the university, the production of new knowledge, and new technologies.

Table 1 presents the themes that will guide the various interviews regarding the socioeconomic impact.

Table 1: Topics to be covered in the interview to identify the perception of the socioeconomic impact

Nature of the Relationship	Means of Impact	Topics to be Covered in Interviews
Outputs	Employment creation	• Social participation of the university. • Perception about if the local people working at the university. • Perception if there are local companies that have a relationship with the university. • Knowledge about university projects. • Demand from the university community for public services. • Perception of the local population if there are businesses and economic activities directly related to the university's target audience.
	Financial expenditure	
	Extension course projects	
	Other activities	
Inputs	Direct business with the university	
	Demand for public services	

Source: Author adapted from Curi Filho & Wood Jr (2021)

2.2 Scientific and Technological Impact

Just like for the socioeconomic impact, this section presents two sets of works.

The first set of articles includes the works of Thorpe et al. (2011), Bertero et al. (2013), Musselin (2013), Kieser, Nicolai, and Seidl (2015). They discuss the need for research to approach studies of practical relevance. In this sense, these works suggest that the measurement of research results should be considered, in addition to elements such as the number of publications, the context in which the research was conducted, and its practical relevance. Martin (1998), Barnes, Pashby, & Gibbons (2002), Alcadipani (2011), Pettigrew (2011), and Gomes (2014) also criticize that research results are measured by unidimensional metrics.

The second set of articles comprises works that present studies on the relationship between the university and local businesses. Etzkowitz & Leydesdorff (2000), Sutz (2000), Leydesdorff & Meyer (2003), Johnson (2008), Fernandes et al. (2010), and Gomes & Pereira (2015) examine the university-industry-government relationship, called the Triple Helix. Looy et al. (2006) and Garcia et al. (2014) consider that the presence of the university is critical to local development, especially in a knowledge-based economy. According to Fisher, Atkinson-Grosjean, and House (2001), the university's approach to the community should come from research that results developing marketable technologies.

The ideas of the articles in this section are summarized in Table 2, which presents the themes covered in the interview related to how the population perceives scientific and technological impact.

Table 2: Topics to be covered in the interview to identify the perception of the *scientific and technological*

Nature of the relationship	Means of impact	Topics to be covered in interviews
Outputs	Intellectual capital	• Knowledge about the participation of interns and graduates in organizations. • The university's involvement in the local workforce. • knowledge about the involvement of the university in public and social organizations. • Knowledge about the projects (extension, research, or service provision) of the university. • The university's communication with the community (website, project dissemination, etc.) • Knowledge about the university's projects with local companies.
	Public policies	
	Research projects	
	Projects with local companies	
Inputs	Demand for public policies	• Knowledge about municipal laws and policies that the university has contributed to the drafting of or that involve the university in some way.

Source: Author adapted from Curi Filho & Wood Jr (2021)

2.3 Impact on the Region's Culture and Image

The third type of impact presented is the impact on the culture and image of the region. In this section, the articles are grouped into three types.

In the first group of articles are Santos (2003) and Perry & May (2006). These authors highlight that the university must address communication problems to participate in local culture.

In the second group of articles are Guetzkow (2002), Langem & Garcia (2009), Doval, Bondrea, and Negulescu (2011), and Popescu & Corbos (2012). These authors evaluate the impact of a university through the organization of artistic and cultural events. According to the authors, the impact of these events can be analyzed, for example, based on the jobs generated. Alternatively, it can be analyzed based on the self-reflection and self-awareness that a cultural event can provide to a population. Popescu &

Corbos (2012) emphasize that cities are socioeconomically structured around large events organized by a university in the region.

The third group of articles highlights the importance of the university in the implementation of local public policies. In this group are the works of Arbo & Benneworth (2007), Alshuwaikhat & Abubakar (2008), Jain & Paint (2009), and Jorge et al. (2015). The authors consider that when a city or community wants to implement a public policy, the university can contribute. Thus, for example, a university can contribute to an innovation policy or focus on sustainability.

Table 3 presents the themes approached of the interview script to identify what Leaders think about the impact of the university on the culture and image of the region.

Table 3: Topics to be covered in the interview to identify the perception of the *region's culture and image*

Nature of the Relationship	Means of Impact	Topics to be Covered in Interviews
Outputs	Region promotion through university initiatives	• University communication channels. • Relationship with events and projects development of the university. • Knowledge about university Projects. • Understanding the involvement of the university in public and social organizations.
	Regional image stemming from university initiatives.	
	Cultural and social events promoted by the university	
	University contribution to developing public policies.	
Inputs	Demands for public policies.	

Source: Author adapted from Curi Filho & Wood Jr (2021)

III. METHODOLOGY

In front of the objective of evaluating the community's perception of the impact of the university in its region, interviews were collected and analyzed with leaders from two small cities, located in the interior of the state of Minas Gerais, Brazil. In this region, there are 11 academic units of a Brazilian federal university. It is a public university and students don't pay by course. In total, the university has approximately, 12000

undergraduate students, 1100 postgraduate students (masters and doctorates), 870 technical administrative staff, and 820 professors from various fields of knowledge.

Considering that the objective was to identify the perception of the community through interviews with Community Leaders from various segments of society, it was decided to conduct qualitative analyses (Cresweel, 2010), focusing on the analysis of the content of the answers.

3.1 Sampling and Data Collection

Based on the guidelines of Adler and Adler (2012), it was initially planned to conduct 30 interviews. This number would rise if, after 30 interviewees, response patterns appeared to be different, which was not necessary (Glaser and Strauss, 1967; Fontanella *et al.*, 2011). Responses showed similarity around the twenty-second interview, although 30 interviews were conducted.

One concern of the research was to conduct interviews with a wide diversity of societal segments. Thus, interviewees were selected considering the proposal of Mainardes (2010), which suggests that the University has 21 stakeholders.

Leaders were sought from formally organized institutions such as associations and unions. Therefore, aiming for a sample that represented the community's diversity, the following were interviewed: nine Leaders from Neighborhood Associations, six Union Leaders, five Political Leaders, two Leaders from Commercial and Industrial Associations, two Leaders from Professional Associations, two Leaders from Educational and Social Institutions, two police force Leaders, one Religious Leader, and one local journalist. In total, It was realized 30 interviews, with 13 leaders from city A and 17 from city B.

The data collection was conducted through semi-structured interviews conducted in person by the author. The interviews lasted between 15 and 45 minutes and took place for one year, from April 2017 to March 2018. The protocol was standardized for all interviewees. However, throughout each interview, some questions relevant to those moments were inserted, always seeking a more in-depth contribution regarding the perception of impact.

3.2 Data Analysis

The data was analyzed based on the content of answers and reaching interpretations of meaning (Creswell, 2010; Spradley, 1979). The interviews were transcribed, and after transcription, the author analyzed the records, as suggested by Fontanella (2011). The intention was to search to identify elements that could contribute to the evaluation of the interviewees' perceptions about the impact of the university,

Thus, a response that emphasized positive elements related to the university's presence in the community was classified as "Positive Impact"; responses that emphasized negative elements were classified as "Negative Impact"; and responses that did not emphasize negative or positive elements were considered as "Omission". These three codes were subdivided into 14 subcodes that allowed for a better understanding of the interviewees' perception of the impact. Table 4 shows the codes and subcodes.

Table 4: Codes and subcodes

Code	Subcodes
Positive Impact	Formal education available
	Economic elements
	Improvement in workforce qualification
	Social elements and project developments for society
	Cultural elements and the region's image
Negative Impact	Drugs, vandalism, and disturbance.
	Problems arising from the city's population rise.
Omission	Low community engagement
	Difficulty in carrying out projects
	Percentage of local students
	Integration into the local context

	No interference in the qualification of the local workforce.
	Participation in entities, councils, and related organizations
	The media channels of the university fail to reach the community.

IV.   INTERVIEW RESULTS

The interviews were organized based on the relationship between positive, negative, and omission impacts, and the types of impact: socioeconomic, scientific-technological, and the image and culture of the region. Thus, Figure 1 introduces a summary of how the perception of the impact of the analyzed university can be viewed schematically. The sizes of the diagrams qualitatively represent the difference in the number of occurrences of each response.
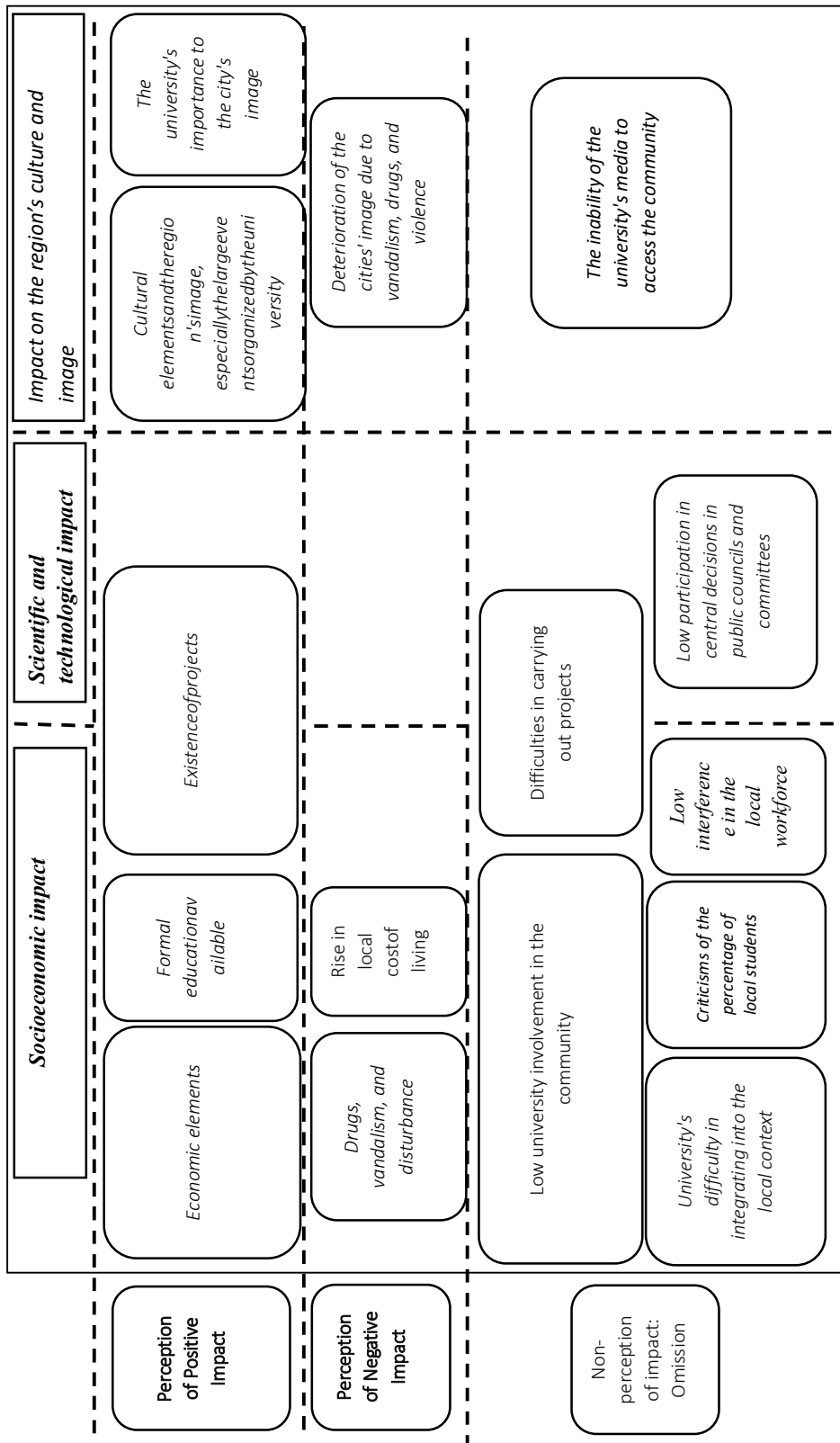
Figure 1: Schematic representation of the perception of the impact of University A

Source: Author

Table 5 presents the number of respondents and responses associated with each code and subcode used in the systematization of the answers.

Table 5: Number of responses and respondents for each subcode

Code	Subcodes	The number of interviewees mentioned the subcode.	Number of responses related to each subcode
Positive Impact	Formal education available	17	27
	Economic elements	28	41
	Improvement in workforce qualification	8	8
	Social elements and project developments for society	27	48
	Cultural elements and the region's image	17	29
Total number of responses classified as positive impact on the university			**153**
Negative impact	Drugs, vandalism, and disturbance.	15	19
	Problems arising from the city's population rise.	9	15
Total number of responses classified as negative impact on the university.			**34**
Omission	Low community engagement	25	65
	Difficulty in carrying out projects	22	41
	Percentage of local students	13	17
	Integration into the local context	17	31
	No interference in the qualification of the local workforce.	14	16
	Participation in entities, councils, and related organizations	14	17
	The media channels of the university fail to reach the community.	21	31
The total number of responses classified as Omission			**218**

Source: Author

V. ANALYSIS OF THE INTERVIEWS

To analyze the community's perception of the university's impact on the local community, it organized this section considering the three types of impacts presented in the theoretical review.

5.1 Socioeconomic Impact of Universities

i) The community recognizes the economic impact of the university

Regarding the socioeconomic impact, it can be observed that the Leaders interviewed perceive this form of impact. After all, all respondents emphasized the economic importance of the university. However, this perception is much greater about economic elements than about social elements. This perception corroborates with the significant concern of the literature in studying the economic impact of universities.

ii) The social impact of the university falls short of expectations

Although the economic impact is emphasized, for the interviewees, the university fails to integrate into the community or demonstrate its social participation. As shown earlier, the code "Omission" was the most frequent. The responses suggest that the university has difficulty engaging with the community and understanding the social and historical context of the region. Even in the training of the local workforce, many interviewees pointed out that they don't see the importance of university. There is also criticism regarding the percentage of local students, which, according to the interviewees, is excessively low.

Despite many projects being mentioned in the interviews and their existence being considered positive by the university, the responses from the interviewees make it clear that the projects have a slight impact and reach small segments of the population.

iii) Drugs, disturbance of peace, and raised cost of living are related to the presence of the university

Within the Type of Socioeconomic Impact, responses were identified that were classified as a negative impact, namely: Drugs, vandalism, and disturbance; Problems arising from population rise. From the perspective of public services, it is noteworthy that the demands are related to the population rise resulting from the establishment or growth of the university. This rise also leads to real estate speculation and a general rise in the cost of living. This situation was described in many responses from the interviewees.

5.2 Scientific and Technological Impact

i) The community does not recognize the existence of research projects and faces difficulties in establishing partnerships with the university

Thus as projects to the community (They are called extension projects in Brazil), research projects are not perceived by the community. The analysis of the responses suggests that research projects do not generate perceptible results for the population. Even projects focused on local demands have limited insertion into small parts of the population. In this sense, various studies in the literature questioning the metrics of how to evaluate research projects corroborate with the fact that the population does not see themselves benefiting from the results of the university's research projects.

ii) The presence of interns and graduates does not generate a perception of a positive impact

Between 2014 and 2017, the units of applied social sciences, engineering, and three health areas provided around 2,400 interns and over 600 graduates. However, the existence of this number of interns and graduates, as well as research projects with local companies do not seem to contribute to a perception of the rising intellectual capital of the city.

Although some interviewees had emphasized the importance of the university for the intellectual capital of the city, there were contradictory responses that already indicate that the community does not perceive a positive impact of the university on the intellectual capital of the city, especially in, especially in the training of a local workforce. The responses suggest that this

intellectual capital is only found in big companies presents in the region.

iii) Perception is that the university's participation in councils and public bodies is ineffective.

The evaluation of the responses highlights that many of the Leaders are aware of the university's participation in councils and public bodies. However, they also emphasize that this participation is not very effective, as university representatives frequently miss meetings, and when they are present, they contribute slightly to the decision-making discussions. In this sense, the interviewees emphasize that the university should control who represents it and whether these representatives are indeed contributing to the debate.

5.3 Impact on the Region's Culture and Image

i) Large events organized by the university are recognized by the population, but communication channels are ineffective

All interviewees are familiar with some projects or events in the city. In this regard, the two major events organized by the university contribute to these responses. Community-oriented projects, with a narrower scope, were also mentioned as a possibility for collaboration of the university in the culture of cities A and B.

Although the two major events organized by the university were mentioned by all interviewees, many of them highlighted the lack of effectiveness of the university's communication channels. The need to publicize the university's actions passes through across the three types of impacts but is most emphasized in the analysis impact on the region's culture and image.

ii) The interviewees recognize that the university affects the region's image, both positively and negatively.

The university, located in cities A and B, has academic units older than the university itself. In this regard, many of the interviewed leaders emphasized that the city's image is positively affected by the existence of these units.

These units participate in rankings and reports associated with the names of cities A and B. However, it is worth noting that the interviewees also highlight that events at parties and disturbances organized by students negatively impact the city's image.

In the literature, studies analyzing the impact of universities on the culture and image of the region highlight precisely the ability of units to disseminate the city's name through their actions and public appearances.

VI. CONCLUSIONS

The purpose of this paper is to show an evaluation of how the impact of a university is perceived by its local community. To this end, 30 interviews were conducted with community Leaders from various segments of society. The interviews were organized in such a way that it was possible to understand how the interviewees perceive the socioeconomic impact, scientific-technological impact, and impact on the region's culture and image of two cities, 12km away.

The interview script followed guiding themes for each type of mentioned impact. Therefore, considering the university's outputs and inputs expected for each type of impact, themes to be addressed in the interviews were defined. The responses were analyzed to identify the community's perception regarding the positive impact, negative impact, and elements that the community sees as omissions of the university.

The answers highlight the following positive impacts: the existence of projects; the impact on the local economy, especially local business; availability of formal education in the region; and positive news of the region associated with successful university initiatives. The answers that highlighted the negative impact are related to drug consumption, vandalism, disturbance of the peace, and increased cost of living resulting from population growth, particularly related to real estate speculation. Finally, negative situations associated with issues related to the university were also highlighted, such as the death of young people due to overdose. Additionally, there are several elements identified as omissions of the

university. Responses indicated that the university: is absent from the community, struggles to understand the local context, faces organizational and bureaucratic hurdles that hinder project implementation, has a low percentage of students from cities A and B regions, fails to noticeably contribute to local workforce qualification, participates ineffectively in public bodies and councils, and has communication channels that fail to reach the entire population.

Considering the three forms of impact presented in the literature, it can be highlighted that from the perspective of socioeconomic impact, the community perceives the economic impact, but the perception of social impact falls short of community expectations. There is also emphasis on the rise in the cost of living, which the population considers to be a result of the existence and expansion of the university. From the perspective of scientific-technological impact, it is possible to highlight that: the community has difficulty identifying the impact of research projects; the community does not perceive the participation of graduates and interns in the region's daily life; and the community evaluates the university's participation in public bodies as unconstructive. From the perspective of impact on the culture and image of the region, the following elements stand out: the importance of the region's major events for the culture and economy of the cities; and the region's image is associated with the university, whether positively or negatively.

Although there are studies in the literature that analyze the impact of universities, there is no consolidated methodology on this topic. There is also no consensus on how the perception of the community about the impact of a university should be evaluated. Therefore, this work contributes to advancing methodologies for evaluating the impact of a university in a local community, especially by addressing the gap regarding studies that evaluate the perception of the community about the impact of the university in its local community.

The practical nature of this work can be seen in the management decisions that the university can make to expand the positive perception of its presence. Similarly to the work that has been carried out, other institutions may evaluate the perception of impact in their respective communities.

This work is limited by diversity and number of interviewees. Therefore, it is possible to complement the work realized through interviews with different kinds of leaders. It is also possible to carry out quantitative research to confirm the elements found in qualitative research. Finally, it is emphasized that evaluating other universities can also contribute to university evaluations, considering that community perceptions may be similar - which, in this case, can contribute to more comprehensive solutions.

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Offboarding and Performance of Employee among Health Workers in ondo State, Nigeria

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ABSTRACT

In recent years, various scholars have worked on employee turnover, but this study examined offboarding and employees' performance among health workers in Ondo State. The objectives of the study are to determine the impact of offboarding mindset and employee retention strategies on employee performance among health workers in Ondo State. The study used the survey design method. The population of the study was 842, and the sample size was 271. A stratified random sampling technique was used to distribute the questionnaires among the professionals that make up the health workers.

Multiple-regression data analysis was used. The model exhibits a good fit with the data. The value of R-Square for multiple regression shows that up to 97.6% of changes in employee performance are the result of offboarding mindsets and employee retention strategies. The findings revealed that offboarding mindset and employee retention strategies have a high effect on employee's performance among health workers in Ondo State. The study concluded that offboarding has a high effect on the performance of employees among health workers in Ondo State. The study also recommended that there should be a cordial relationship between management and employees; in addition, regular onboarding and training of the new staff should be highly upheld. Also, to improve the employee retention strategy to aid employee performance, good compensation packages, a better condition of service, and career growth for health workers must be put into place.

Keywords: employee performance offboarding, offboarding mindset, retention strategies.

Classification: JEL Code: J24

Language: English

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I. INTRODUCTION

Employee offboarding is the process by which an organization handles a departing employee. This process involves transfer of knowledge and the securing of organization property and data. Offboarding of any staff is done legitimately in developed countries like United Kingdom, Canada and United State of America because of better condition of service, good environment to work with and job satisfaction (Wilson, 2016). The contrary case is what is obtainable in Africa where an employee can decide to leave at any time he or she wishes without proper notice or the employers disengage their employees irrationally (Han, 2020).

Health organizations in Nigeria keep investing ample amount of capital and time on their employees in terms of induction, development, training and retraining and many others (Ibitomi & Adeleke, 2020). Despite this huge investment, it is quiet unfortunate that staff retention among the health specialist are not sustained (Engetou, 2017). Off boarding in our hospitals is now a common phenomenon, when an employee leaves, he goes with a great deal of human capital in the form of knowledge and skills developed on the job. Patients visiting hospitals in Ondo state and in Owo particularly spend hours waiting before being attended to due lack of sufficient health workers lost to improper offboarding. Therefore, strategies to maintain and retain work force is necessary, there is need to develop a fuller understanding of the employee offboarding, more especially, what determines employee offboarding, effects and policies that the medical

directors can put in place in order to minimize offboarding (Mosebeck & Mobasher, 2021).

Health workers are extremely very important to the health sectors since their contribution to the organization is essentially invaluable and not easily replicated (Okpiabhele, *et al.*, 2022). Therefore, the medical directors must recognize that employee's performance has a major contribution to the efficient achievement of the hospital's success. Health managers should control employee offboarding for the benefit of the organizational productivity (Obiekwe *et al,* 2019).

Employee offboarding is very costly to health organizations, with replacement costs estimated to range from 32% to 114% of an individual's annual salary (Collins *et al*, 2015). The cost of employee offboarding extends beyond the actual cost of replacing the employee, having a negative impact on employee performance and customer service (Park & Shaw, 2013). Voluntary offboarding occurs when the individual chooses to leave the organization of his or her own volition (Hom *et al,* 2013). Offboarding among frontline support employees within a hospital can affect the organization's ability to deliver safe and quality care.

Employee offboarding is a challenging issues in health sector where the employees have a direct impact on the quality of patient care. Nigeria health sector is witnessing an ever-increasing rise of brain drain on daily basis due to offboarding of health workers in the country. The developed nations such as the United States of America, Canada, United Kingdom, China and many others offer competitive salaries and benefits to entice competent healthcare professionals from all over the developing world to their own country. This "JAPA SYDROME" particularly in Nigeria causes the majority of health personnel moving to developed nation in search of greener pastures.

The costs accrue to replace an employee, which include recruiting and training, also, it extends to weak performance of remaining employees, as replaced employees are slower and require additional training (Park & Shaw, 2013).

Therefore proper disengagement is an essential part needed to maintaining organization's reputation, optimizing current employees' working experience, and preserving networking opportunities that are currently not available in our health sectors.

Disengagement via voluntary resignation is most rampant in our health sectors, majority of the already trained health worker are withdrawing their services on daily basis to relocate to advanced countries. In addition, at the opening ceremony of 2022 Abia Physicians' Week, the Nigeria Medical Association (NMA) president, Dr Rowland Ojinmah, decried the wave of brain drain that has hit the health sector, lamenting that no fewer than 50 medical doctors leave Nigeria weekly searching for better condition of service abroad (Nigerian Tracker 2022). He also reported that Nigeria has only 24,000-trained medical Doctors to cater for over 200million Nigerians which in turn has adverse effect on the performance of the remaining employees. This improper disengagement process in Nigeria health sectors has immensely contributed to the decline rate of performance among employees in our hospitals. According to Sunday Punch of 19th of March, 2023, Nigeria has been faced with worrying brain drain in recent times, with many professionals, including doctors leaving the country for greener pastures, also from the register of the General Medical Council (GMC) of the UK website, number of Nigerian – trained medical doctors rose from 10,824 to 11,001 within 45 days (Sunday Punch, 2023). It implies from this report that at least three Nigerian- trained doctors are licensed per day.

The following research questions were formulated from the specific objectives to stimulate responses.

1. How offboaring mindset does has effect on employee performance among health workers in Owo metropolis, Ondo State?
2. To what extent does employee retention strategy can have effect on employee performance among health workers in Owo metropolis, Ondo State?

3. The following research hypothesis were stated in null form for the purpose of providing answers to the research questions:

HO$_1$: There is no significant effect of offboarding mindset on employee performance among health workers in Owo metropolis, Ondo state.

HO$_2$: There is no significant effect of employee retention strategy on employee performance among health workers in Owo metropolis, Ondo state.

On completion of this research, it is expected to solve the challenges pose by attrition at various hospitals and to reduce and if possible eliminate the stress and time wasted by the citizen of the society visiting the hospital for medical treatment. This will no doubt reduce the drudgery effect caused on the medical personnel in the health sector for a sizeable number of patients to be attended to will drastically reduce and optimum performance achieved by the government and the incoming researchers will leverage on this for a future productive researches. Therefore, medical directors of health institutions must take measures to arrest attrition as a lot of investment in terms of time, money, and energy are expended to attract, train, and place a talent in the hospitals.

The cost goes beyond merely placing an advertisement in a newspaper. It includes training a new employee, staff time for selecting a new employee, productivity loss while the position is still open and until the new employee gets up to the same level of previous employee. Previous research addressed turnover in food industries, the hotel industry and other production sectors. (Djajasinga *et al,* 2020). No tangible research has focused on strategies to reduce if possible eliminate offboarding of health workers to determine their effects on employee productivity.

The scope of this study is to research on effect of offboarding on employees' performance among health workers in Ondo State, Nigeria. Geographically, Ondo State was chosen being the host to both federal, state and private hospitals. The variables used for this study are offboarding mindset and Employee retention strategies. The reason for the usage is due to the fact that they are the major determinant of offboarding that can help to check the performance of employees in relation. Multiple regression was used in analyzing the data because it deals with the effect of one variable to another.

II. LITERATURE REVIEW

2.1 *Offboarding*

Offboarding is the process that leads to the formal separation between an employee and an establishment through resignation or withdrawal of service, termination, absconding and retirement (Cunningham & Reilly, 2021). Offboarding can also be described as a process of disengaging an employee from their position within a company, it is a phenomenon use to describe both people who choose to leave and for those who are laid off by their organization (Dwesini, 2019). Lynn & Sellai, (2022) asserted that employee offboarding is the process by which a company handles a departing employee. This process involves any number of steps to guarantee a harmonious separation, a transfer of knowledge and the securing of company property and data.

In general, offboarding is the process during which an employee parts ways with the people and the organization they worked for. It encompasses all the decisions and processes that take place when an employee leaves. According to Sengupta *et al,* (2018), offboarding can be in the following dimensions:

i. Transferring that employee's job responsibilities: Transferring employee's job responsibilities involves the new onboarded staff taken over the duty of the off boarded counterpart.

ii. Documenting the employee's knowledge, duties and responsibility.

iii. Deactivating access rights and passwords: The employer ensures that the offboarded staff has no access to the organization system.

iv. Turning in equipment : The employer ensures proper hand over of any equipment under the possession of the offboarded staff and to also ensure that the offboarded sign exit form.

v. Conducting exit interviews to gather feedback: The employer conducts exit interview to

determine the likely cause of offboarding so as to prevent other staff (Sangita, 2019).

When an employee leaves, he or she becomes either an advocate or an antagonist to the organization. Advocates will speak highly of the organization and can send potential new employees to the same organization. Antagonists will not recommend the business to anyone, and that can hurt in the long run. An effective offboarding process helps reduce the chance that misunderstandings will persist after the employee moves on. When employers take time to get a clear understanding of the employee's experience, the duo can part ways with additional opportunities for networking, development, and growth. (Sengupta *et al,* 2018).

2.2 Offboarding Mindset

Offboarding mindset is a general attitudes and the way employees typically think about offboarding. It is habitual or characteristic mental attitude that determines how employee will interpret and respond to offboarding situations. Offboarding mindset is a complex mental state involving beliefs and feelings and values and dispositions to offboardings in certain ways. Offboarding mindset is a collection of thoughts and beliefs that shape offboarding habits. This affect how employees think, what they feel, and what they do concerning offboarding. (Collins *et al,* 2015).

2.3 Employee Retention Strategies

According to Sangita (2019), employee Retention strategies is a challenging issue in organizations and particular the health sectors. Employees are the assets of any organization so as to keep the organization going. The health Managers must do everything possible to retain skillful and committed employees in the organization, management should take care of employee satisfaction. Find out the reasons of employee offboarding and also to overcome this. Employee Retention is defined as an organization's ability to retain its employees. It can also be called as a process, in which the employees are motivated and encouraged to stay in an organization for a longer period of time for the sustainability of the organization. (Mathimaran & Kumar 2017).

2.4 Employee Performance

This is defined as how an employee fulfills his duties and executes his required task. It refers to the effectiveness, quality and efficiency of his output. Performance also contribute to employees' assessment of how valuable an employee is to the organization. Employee performance refers to how workers behave in the workplace and how well they perform the job duties assigned to them (Ugoani, 2016). The employer typically sets performance targets for individual employee and the company as a whole believing that the organization offers good value to customers, minimizes waste and operates efficiently.

According to Ibitomi *et al* (2022), in an organizational context, employee performance is defined as the degree to which an organizational member contributes to achieving the goals of the organization. Employee performance is very important to all organization as it plays an imperative mechanism that contributed to the feat attained by an organization.

Individual performance has impact on both the team and organizational performance. In a situation where employees cannot measure up, then other workers have to pick up the slack. Poor employee performance has negative effect on customer's satisfaction and thus negative impacts on profits, company reputation and sales. (Dwesini, 2019).
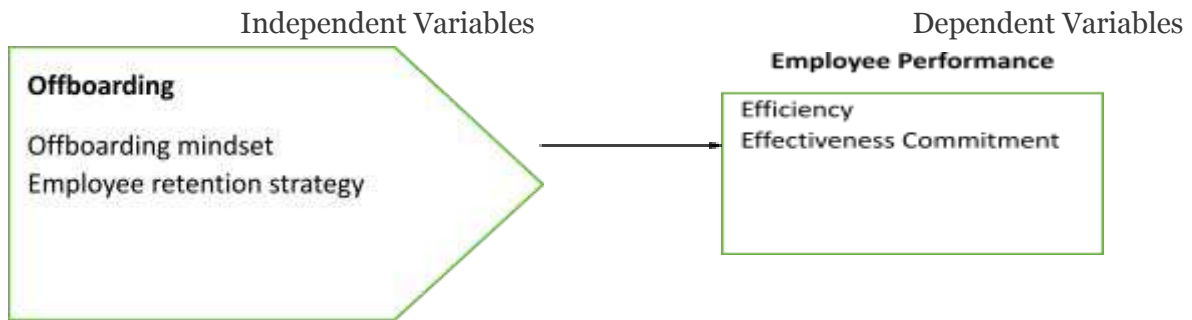
Figure 1: Conceptual framework (source: adapted from Mudor & Tookson (2011)

The independent variable is offboarding while the dependent variable is employee performance as shown in Figure 1. The variables under offboarding are offboarding mindset, employee retention strategies. The study is to know the impact of how the aforementioned variables of offboarding affect employee performance in terms of efficiency, effectiveness and commitment.

2.4 Theoretical Review

2.4.1 Expectancy Teory

The theory was proposed by Victor Vroom in 1960. The theory introduced one of the most widely accepted explanations of motivation. The expectancy theory stated that an employee will be motivated to put forth a high level of effort when he or she believes that:

i. Effort will lead to a good performance appraisal.
ii. A good appraisal will lead to organizational rewards.
i. The organizational rewards will satisfy his or her personal goals.

The key to the expectancy theory is to understanding individual's goals and the relationships between effort and performance, between performance and rewards, and finally, between the rewards and individual goal satisfaction. Motivation is usually high when an employee has a high level of expectancy and the reward is attractive, (Holston-Okae & Mush, 2018).

The expectancy theory of motivation explains the behavioral process and the reasons individuals choose one behavioral option over the other. This theory explains that individuals can be motivated towards goals if they believe that there is a positive correlation between efforts and performance, the outcome of a favorable performance will result in a desirable reward, a reward from a performance will satisfy an important need, and/or the outcome satisfies their need enough to make the effort worthwhile. The implication of expectancy theory to this work is that whenever the efforts of the health workers commensurate with their reward from the hospital management, it will discourage offboarding, but encourages offboarding if otherwise.

2.4.2 Goal-Setting Theory

The goal‑setting theory, introduced in the late 1960s by Edwin Locke, proposed that intentions to work toward a goal are major source of work motivation. Goals, in essence, tell employees what needs to be done and how much effort should be expended. In general, the more difficult the goal, the higher the level of performance expected. (Onday, 2016).

Managers can set the goals for their employees, or employees and managers can develop goals together. One advantage of employees participating in goal setting is that they may be more likely to work toward a goal they helped in developing.

No matter who sets the goal, however, employees do better when they get feedback on their progress. In addition to feedback, factors influencing the goals‑performance relationship are: the employee committed to the goal,

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employee believe that he is capable of performing the task, tasks involved in achieving the goal should be simple, familiar, and independent. The goal‑setting theory is culture bound and is popular in North American cultures. If the goal‑setting theory is followed, managers need to work with their employees in determining goal objectives in order to provide targets for motivation. In addition, the goals that are established should be specific rather than general in nature, and managers must provide feedback on performance. To reduce attrition rate in our hospitals, the management needs to work with their staff in set a goal and working towards the goal, this will enhance inclusive working condition and will no doubt discourage offboading and promote staff retention. (Onday, 2016)

2.4.3 Empirical Review

Holston-Okae and Mush, (2018) worked on employee turnover in the hospitality industry using herzberg's two-factor motivation-hygiene theory. The duo assessed the relationship between employee turnover intention and job satisfaction, employee compensation, employee engagement, employee motivation, and work environment. A convenience sample of 156 hospitality employee from Western Georgia; Central Mississippi; and North Central Texas completed an online survey. The data was analyzed using multiple linear regression statistical technique. In the final model, the 5 predictors accounted for approximately 36% of the variance in turnover intention, and the result was statistically significant, (R^2 =. 36, F (5, 105) = 11.57, p < .001).

it was discovered that motivation was not a significant predictor of employee's turnover intentions. Ultimately, hospitality leaders' ability to implemented strategies and policies into their business practice to reduce high turnover is vital for organizational to retain skilled worker while maintaining profitability. The study underscores the importance of job satisfaction, employee compensation, employee engagement, and work environment to reduce employee turnover in the hospitality industry. The fact that motivation was not a significant predictor of turnover intentions,

this study opens avenues for further research on turnover intentions and motivation.

Narkhede, (2014) researched on employee turnover in hospitality industries a study of service staff. The author discovered the causes of turnover in hotels serving food to customers, and discover suitable measures to overcome the problems. Data was collected from selected hotels in Jalgaon City through schedules particularly from member of staff serving at table. The results provided significant evidence to justify increased emphasis on staff retention strategies and the creation of healthy work environments for serving staff.

Sengupta, *et. al,* (2018) wrote an article on unravelling employee off-boarding: the magic of exit interview. In his work, he proposed that organizations need to understand the reasons for voluntary disengagement. He suggested exit interview for the off-boarding staff in his last working days. The exit interview helps the organization to capture and analyze genuine reasons and work on the shortcomings, so that, it gains a competitive advantage in terms of minimum turnover and enhanced organizational commitment.

Bauer, (2015) worked on best practices for maximizing off-boarding success. He highlighted do's and don'ts in off-boarding process, according to him successful off-boarding makes employee feels good about his departure and also enhances the employment brand and future recruitment and client source for organizations. Organizations able to off-board employees effectively set themselves up for future success.

Wilson, (2016) researched on employee turnover in frontline hospital staff. According to him, turnover is disruptive to the operations of any organization. The employee engagement provides a connection between the strategies leaders have developed and implemented to the goal of reducing frontline support employee turnover. The leaders in this study provided four areas of focus in addressing employee turnover, which include leadership, hiring and onboarding

strategies, pay and compensation, and organization-related factors.

Ongori (2007) worked on a review of the literature on employee turnover. According to him, most of the researchers focus on the causes of employee turnover but little has been done on the examining the sources of employee turnover, effects and advising various strategies which can be used by managers in various organizations to ensure that there is employee continuity in their organizations and also to enhance organizational competitiveness. This paper examines the sources of employee turnover, effects and forwards some strategies on how to minimize employee turnover in organizations.

Dwesini, (2019) wrote on causes and prevention of high employee turnover within the hospitality industry. This article investigated the causes of high employee turnover in the hospitality industry with the intention of recommending strategies for the retention of employees. The researcher adopted a desktop approach to identify causes of high employee turnover and consequently discussed strategies that hospitality managers can apply to reduce employee turnover in their establishments. A wide range of secondary sources of data was used to obtain an in-depth appreciation of the problem being investigated.

AlBattat and Som, (2013) worked on employee dissatisfaction and turnover crises in the Malaysian hospitality industry. According to the duo, studies have been done on employee turnover, but further investigation is needed as labor intensive employees are part of the hospitality product. This study reviews the literature relevant to turnover crises and provides a theoretical review of the Mobley model (1977). The purpose of this study is to give an overview of the causes of job dissatisfaction which force an employee to quit their current job and consider other job opportunities. Case of dissatisfaction from a poor working environment and considers leaving his current job.

Djajasinga *et al,* (2020) researched on practices in human resources and employee turnover in the hospitality industry. According to the authors,

attrition of employees is a big global concern in the hospitality sector. The management of shifting working ties is one of the daunting challenges facing hospitality organizations. The hotel sector uses its human capital to gain its strategic edge in the consumer services market. Experts stress that the hospitality industry is a highly guest-based market that determines the enterprise's performance through meetings between staff and visitors. This analysis uses qualitative literature studies in the collection of the related data.

Jung, (2020) worked on a review of antecedents of employee turnover in the hospitality industry on individual, team and organizational levels. The article reviewed recent literature studies of employee turnover to identify antecedents of employee turnover in the hospitality sector to reduce the literature gaps and present a wider scope of turnover factor and understanding of employee motivational factors in their job decision.

Obaze *et al.,* (2023) researched on predictors of turnover intention among entry-level employees of commercial banks in Nigeria. According to the authors, previous studies examined the possible predictors of turnover intention but some of them ignored the critical roles of entry level employees in the profitability of commercial banks. While managerial cadre is important in providing needed leadership bulk of the critical functions such as customer relationship, marketing, accounting and operations are largely performed by the entry level employees of banks. Obaze *et al.,* 2023 investigated the predictors of turnover intention among entry level employees in Nigeria banking industry and also designed an effective and proper managerial intervention to achieve reduction in turnover intention in Nigeria banking industry.

Also, Ugoani, (2016) worked on employee turnover and productivity among small business entities in Nigeria. He evaluated the problems of employee turnover on productivity among small business entities in Nigeria, and recommended remedial actions. According to him, productive manpower is a critical element for the economic survival of any small business entity. The survey

research design was used for the study. The sample comprised of 320 respondents. Data generated were analyzed by using descriptive and Z-test statistical techniques. He discovered that employee turnover adversely affects productivity in small business entities in Nigeria.

Chukwuezi *et al,* (2021), worked on causes and effects of employee turnover. The authors described turnover as an issue for contemporary research. The objective is to analyze the possible causes of employee turnover in organizations and to ascertain the effects of employee turnover in organizations. The variable used include job satisfaction, pay satisfaction, alternative employment opportunity and career progression. The methodology adopted is literature review approach and distribution of questionnaires to staff of some selected organizations. Their responses were tabulated and analyzed using simple percentages. In their findings, the researchers discovered factors such as pay satisfaction, lack of career progression, job satisfaction, employer-employee relationship, alternative employment opportunity amongst others causes high rate of turnover which has resulted into decreased in productivity and profit, loss of training cost and increased workload.

Chukwu, (2019) examined the influence of staff promotion on employee turnover intention in food and beverage industry in Nigeria. The objectives of the work are to ascertain whether employees will intend to leave when promoted as at when due, determine whether employees will intend to leave when promotion is regular, examine whether employees will intend to leave when promotion criteria is transparent and examine whether employees will intend to leave when satisfied with promotion. The variables used include staff promotion, cost and profitability

This research adopted a survey research instrument through the administration of questionnaires to staff of the sampled firms. The data for the research was analyzed using descriptive statistics and chi-square. The empirical results from the chi-square analysis showed that promotion as at when due, regular promotion, transparent promotion and when

employees are satisfied with promotion has significant influence on employee turnover intention at 5 percent level of significance.

2.4.4 Gap in the Literature

The previous researches addressed turnover in food industries, hotel, banking sectors, and other production sectors. Djajasinga *et al,* (2020), Holston-Okae & Mush, (2018), Fernandez & Worasuwan, (2017), Dwesini, (2019) and many others, few researches are available in Nigeria in relation to hospitals. Those available were majorly carried out in the developed countries of the world. The ones carried out in Nigeria reflected the opinion in major cities without concentration on local government areas in the country. This research focuses mainly in a local government that has presence of both federal and state hospitals in Nigeria. Couple with current high attrition rate of already trained health workers in our various hospitals, no tangible research has focused on strategies to reduce and if possible eliminate turnover of health workers to determine their effects on employee productivity. This work focuses on impact of offboarding on employee performance among health workers in Ondo State, Nigeria.

III.   METHODOLOGY

Survey research method was used in this research work. This entails collection of data from specific population or sample through questionnaire instrument. Survey research method was chosen because the goal was to sample the opinions of the people on issues concerning effect of offboarding on employee performance among health workers in Ondo State. The population of this research comprises staff of Federal, state and private hospitals in Ondo State. A stratified random sampling technique was used to distribute the questionnaires. This sampling technique was considered most appropriate because it gives everybody in the population equal chance of being selected.

Copies of questionnaires in which questions pertaining to age, gender, level of education, occupation and issues affecting offboarding were

asked to accomplish the objectives of the study and analyzed by scoring the responses using Five levels scale, which are; strongly agree, Agree, Neutral, strongly disagree and disagree. The levels scale is awarded grades from (5) to (1), with a decrease from strongly agreed to disagree.

The entire permanent staff of the Federal, State and Private Hospitals were considered for the population of this study. The population of staff therefore is 842 employee across Ondo State.

The sample size was selected using Taro Yamane statistical formulae. The sample size formula according to Yamane (1973) is given by:

$$n = \frac{N}{1+Ne^2}$$

Where:
n signifies the sample size
N signifies the population under study
e signifies the margin error = 0.05(5% significant)

$$n = \frac{N}{1+Ne^2} = \frac{842}{1+842(0.05)^2}$$

$$\frac{842}{1+2.105} = \frac{842}{3.105} = 271$$

$$n = 271$$

The researcher employed the use of questionnaires as the instruments for collecting data from the sample population. The questionnaire for the collection of data was divided into two sections. The first section captured data on offboarding mindset, employee retention strategies and employee performance to establish the link between offboarding and employee performance. The second section

covered the bio-data, educational level and job description of the respondents.

In order to carry out proper analysis of the data collected, a model is stated to determine the relationship between the variables of the study as:

$$OB = f(EP) \text{ ----------------------(i)}$$

$$f(EP) = (OBM, ERS) \text{ ------------------(ii)}$$

$$OB = \alpha + \beta_1 OBM + \beta_2 ERS + e \text{ ---------(iii)}$$

Where OB = Offboarding, EP = Employee Performance, OBM = Offboarding mindset, ERS = Employee Retention Strategies α = Alpha, β = Beta, e = error

The study used multiple regression analysis, the reason for this choice was due to the dimensions of dependent and independent variables. The tools of analysis was statistical packages for social sciences (SPSS) which is more conducive for carrying out analysis.

IV. RESULTS AND DISCUSSION

A total of 286 respondents were served with the questionnaire, with the number of respondents evenly distributed on gender basis within the age ranges from 18 -60 years. 273 respondents which included 140 male and 133 female returned the questionnaire as shown in table 2. Information was presented using tables to aid easy understanding. Bio-social information of the respondents and the descriptive statistics of the respondents were analyzed

Table 1: Information on the Questionnaire

No of questionnaire administered	No questionnaire returned	No of not retrieve
286	273	13

Source: Field Survey (2023)

It shows from table 1 that 273 copies of questionnaire were returned representing 95.45% success rate, which is considered sufficient and employed in the study.

Table 2: Demographic Variables

Age			Sex			Job Designation		
Years	N	%	Gender	n	%	Type	N	%
18-30	75	27.47	Male	140	51.28	Medical Doctor	65	23.81
31-40	79	28.94	Female	133	48.72	Nurse	73	26.74
41-50	68	24.91				Medical Lab Scientist	20	7.33
>50	51	18.68				Pharmacist	25	9.16
						Physiotherapist	15	5.49
						Radiographer	10	3.66
						Medical Record	32	11.72
						Engineer	6	2.19
						Finance / Accounting	9	3.30
						Admin Staff	8	2.93
						Porter/Health Attendance	10	3.66
Total	273	100.00		273	100.00		273	100.00

Source: Calculation through SPSS 17.0 from Field Survey (2023)

The results from table 2 shows that majority of the health workers administered with questionnaire are in their active age to function maximally. Also, most of the health workers are professionals in the medical field. Gender distribution of respondents shows that 51.28% of our respondents were males while 48.72% of the respondents are however their females counterpart, the total respondents observed in the study was 273 (100%).

Table 3: Demographic Variables

Experience			Education		
Years	N	%	Class	N	%
1-5	20	7.33	SSCE	10	3.67
6-10	58	21.24	ND/NCE	35	12.82
11-15	56	20.51	Bachelor Degree / HND	156	57.14
16-20	35	12.82	MBBS	65	23.81
21-25	45	16.48	Master level	5	1.83
>26	59	21.61	PhD level	2	0.73
			Others		
Total	273			273	

Source: Calculation through SPSS 17.0 from Field Survey (2023)

The results from table 3 shows that majority of the respondents have qualification of first degree or its equivalent and those that have good working experience were the ones served with the questionnaires. Majority of the health workers are in senior staff cadre with low population of junior staff.

Table 4: Employee Performance (EP)

Employee Performance (EP)	SA	A	N	SD	D
Inappropriate employee mindset has negative effect on employee performance	79	88	40	21	45
Poor employee retention strategies has adverse effect on performance among Health workers	87	72	50	27	37
Voluntary resignation of appointment by health workers has adverse effect on employee performance	64	69	11	66	63
Outright dismissal has adverse effect on employee performance	78	75	43	27	50
Termination of appointment of health workers has adverse effect on employee performance	69	70	45	41	48
Inadequate replacement of retired staff has negative effect on employee performance	78	68	51	45	31

The results from table 4 shows that good numbers of the respondents strongly agreed and agreed to the fact that inappropriate employee mindset, poor employee retention strategies, outright dismissal, termination of appointment of health workers and inadequate replacement of retired staff have adverse effect on performance among Health workers. Also, almost equal number of the respondents strongly agreed and strongly disagreed to the fact that voluntary resignation of appointment by health workers has adverse effect on employee performance.

Table 5: Determine Off-Boarding Mindset (OBM) on employee performance among health workers in Owo, Ondo State N= 273

S/N	Research Questions	Strongly Agree (SA)		Agree (A)		Neutral (N)		Strongly Disagree(SD)		Disagree(D)	
		N	%	N	%	N	%	N	%	N	%
1	I frequently think of quitting my job to better one outside the country	102	37.36	96	35.16	31	11.36	19	6.96	25	9.16
2	I will be actively looking for a new job within the next one year due to dissatisfaction on my present job	91	33.33	85	31.14	45	16.48	24	8.79	28	10.25
3	Management practices of treating health workers allow offboarding at all time in my hospital.	71	26.00	66	24.17	65	23.81	31	11.36	40	14.65
4	Insufficient employees in the organization slows down the effectiveness and efficiency of our operations and offboarding of workers in our hospital.	48	17.58	49	17.99	41	15.02	67	24.54	68	24.91

S/N		Strongly Agree(SA)		Agree (A)		Neutral(N)		Strongly Disagree(SD)		Disagree(D)	
5	Inability to work with modern tools and equipment in any hospital prepare me for offboarding	55	20.15	45	16.48	20	7.33	78	28.57	75	27.47

The results from table 5 shows that good numbers of the respondents strongly agreed and agreed to the fact that they are think of quitting their current job to better one outside the country, actively looking for a new job within the next one year due to dissatisfaction on their present job and also believe that management practices of treating health workers allow offboarding at all time in hospital. Also, good numbers of the respondents strongly disagreed and disagreed that insufficient employees in hospitals slow down the effectiveness and efficiency of operations in hospitals and inability to work with modern tools and equipment prepare health workers for offboarding.

Table 6: Examine Employee Retention Strategies (ERS) on employee performance among Health workers in Owo, Ondo State N= 273

		Strongly Agree(SA)		Agree (A)		Neutral(N)		Strongly Disagree(SD)		Disagree(D)	
S/N	Research Questions	N	%	N	%	N	%	N	%	N	%
6	Good relationship among health workers can retain them in the country	49	17.95	49	17.95	45	16.48	61	22.34	69	25.27
7	Good compensation packages can retain health workers in the country	71	26.00	76	27.84	40	14.65	45	16.48	41	15.02
8	Career growth of health workers can retain them in the country	65	23.81	62	22.71	31	11.36	51	18.68	64	23.44
9	Work life Programs for health workers can allow them to stay for a long time in their hospitals	49	17.95	51	18.68	75	27.47	48	17.58	50	18.32
10	Good Work Environment is a determine factor to retain health workers in hospitals	40	14.65	54	19.78	43	15.75	71	26.00	65	23.81
11	Good condition of work in line	85	31.14	76	27.84	20	7.33	52	19.05	40	14.65

	with that of the developed countries can retain health workers.									
12	Appropriate exposure to overseas training among health workers can retain them at work and improve their performance at work	95	34.80	85	31.14	40	14.65	25	9.16	28	10.26
13	Culture of health practitioner can retain health workers	55	20.15	60	21.98	39	14.29	52	19.05	67	24.54
14	Leadership style employed to treat health workers will play good roles to retain health workers	64	23.44	60	21.98	25	9.16	61	22.34	63	23.08
15	Benefits Programmes to health workers will retain their service in the country	59	21.61	60	21.98	45	16.48	50	18.32	59	21.61

The results from table 6 shows that good numbers of the respondents strongly agreed and agreed to the fact that good compensation packages can retain health workers in the country, good condition of work in line with that of the developed countries can retain health workers and appropriate exposure to overseas training among health workers can also discourage offboarding. Also, good numbers of the respondents strongly disagreed and disagreed that good relationship among health workers and good work environment can discourage offboarding. Also, approximate equal number of respondents strongly agreed, agreed, strongly disagreed and disagreed that career growth of health workers, work life programs for health workers, culture of health practitioner, leadership style employed to treat health workers and benefits programmes to health workers will play good roles to retain health workers in the country.

V. RESULTS ANALYSIS

5.1 Likert Scale

5 = Strongly Agree (SA) , 4 = Agree (A), 3 = Neutral, 2 = Strongly Disagree (SD) and 1 = Disagree (D)

Dependent Variable: Employee Performance (EP) Independent Variables: Off-Boarding Mindset (OBM) and Employee Retention Strategies (ERS)

$$EP = \beta_0 + \beta_0 OBM + \beta_0 ERS + \mu_t$$

Table 7: Multiple Regression Analysis Result

Hypothesis	Regression Weight	Beta Coefficient	R^2	F	t-value	p-value	Hypothesis Supported
HO_1	OBM → EP	.417	.976	5444.844	6.367	.000	Yes
HO_2	ERS → EP	.591	.976	5444.844	9.418	.000	Yes

VI.   RESULTS FROM ANALYSIS

The hypotheses test to study the effect of offboarding mindset on employee performance among health workers in Owo, Ondo State. The dependent variable EP was regressed on predicting variable OBM to test the hypothesis HO_1. OBM significantly predicted EP, $F(2, 270) = 5444.844$, $p < 0.001$, which indicates that the OBM can have significant effect on EP (b = .417, $p < 0.001$). These results clearly direct the positive effect of EP. Moreover, the $R^2 = .976$ depicts that the model predicts 97.6 % of the variance in EP.

The hypothesis tests to study the effect of employee retention strategy on employee performance among health workers in Owo, Ondo State. The dependent variable EP was regressed on predicting variable ERS to test the hypothesis HO_2. ERS significantly predicted EP, $F(2, 270) = 5444.844$, $p < 0.001$, which indicates that the ERS can have significant effect on EP (b = .591, $p < 0.001$). These results clearly direct the positive effect of EP. Moreover, the $R^2 = .976$ depicts that the model predicts 97.6 % of the variance in EP.

Table 8: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.988[a]	.976	.976	.21228

a. *Predictors: (Constant), EMS, OBM*

The table 8 shows the R-square of the estimated model. The R-square 0.976 indicate that 97.6 % variation in employee performance is caused by off boarding mindset and employee retention strategies. The R-square shows that the model has an overall goodness of fit and such is suitable for determining the effect of employee performance.

Table 9: Analysis of variance of estimated model

ANOVA[a]

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	490.714	2	245.357	5444.844	.000[b]
	Residual	12.167	270	.045		
	Total	502.881	272			

a. Dependent Variable: EP

b. Predictors: (Constant), EMS, OBM

The table 9 shows that the estimated model has high overall significance which means that the joint effects of off boarding mindset and employee retention strategy on employee performance is high and it is significant. This also show that the f-statistic (502.882) and its probability (0.000 < 0.05), indicating that the estimate is significant at 5% level of significance.

Table 10: Regression coefficients

Coefficientsᵃ

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.179	.030		-6.008	.000
	OBM	.417	.066	.400	6.367	.000
	EMS	.579	.061	.591	9.418	.000

a. Dependent Variable: EP

Table 10 shows the regression coefficients. The standardized beta coefficient 0.400 shows that off boarding mindset has a significant effect on employee's performance. It also shows that the estimate is significant at 5% level of significance. As a result, we reject the null hypothesis that 'there is no significant effect of offboarding mindset on employee's performance amongst health workers in Owo.

The standardized beta coefficient 0.591 shows that employee retention strategy has a significant effect on employee's performance. It also shows that the estimate is significant at 5% level of significance. As a result, we reject the null hypothesis that there is no significant effect of employee retention strategy on employee's performance amongst health workers in Owo.

6.1 Discussion of Findings

The first hypothesis states that there is no significant effect of offboarding mindset on employee's performance amongst health workers in Owo. The standardized beta coefficient (0.400) and probability (0.001 < 0.05) indicated that offboarding mindset is statistically significant with employees' performance. This means that the offboarding mindset increases employee perfomance among health worker in Owo The second hypothesis states that 'there is no significant effect of employee retention strategy on employee's performance among health workers in Owo. However, the estimated standardized coefficient (0.591) and p-value (0.000) shows that the effect of employee retention strategy on employee's performance amongst health workers is positive and significant. This implies that when there is more focus on retaining employee permanently in the hospital sector, helps to increases the performance of employees.

The result showed that offboarding mindset (OBM) and employee retention strategies (ERS) is a significant positive predictor on employee performance. This was in agreement with the result of Holston- Okae and Mush (2018) that there is relationship between employee turnover intention and job satisfaction, employee compensation, employee motivation and work environment using Herzberg's two factor motivation hygiene theory. Also, the result was also in contract with Dwesini (2019) that explored factors leading to high labour turnover and further highlighted employee retention strategies that management in the hospitality industry can use to reduce this problem.

VII. CONCLUSION AND RECOMMENDATIONS

Analysis was conducted using multiple regression. From the various results obtained, it was evident that the model fit the data well and are statistically significant for the research. Also from the analysis, we found out that p < 0.001 indicates that the result is significant for the test. Beta coefficient shows that employee performance (EP) is affected by 41.7% and 59.1% offboarding mindset (OBM) and employee retention strategies (ERS) respectively. The model predicts that 97.6% changes in the employee performance is due to

the offboarding variables. This means that most of the factors affecting employee performance among health workers in Owo metropolis, Ondo State is caused by these factors that has been taken into consideration.

Based on first objective, the study recommends that there should be cordial relationship between management and employees, modern tools and equipment should be made available to hospitals, also regular onboarding and training of the new staff should be highly upheld.

Also, employee retention strategies, good compensation packages, better condition of service, career growth of health workers, good working environment, appropriate exposure to overseas training, and some benefited programs to health workers must be on ground to achieve the second objective.

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