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Green Practices Among Hotels in the Sunyani Municipality of Ghana

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ARTICLE INFO			ABSTRACT
Article History:			*Greening in the hospitality sector are becoming more popular on a global scale. Going green have drawn the attention of both individuals and companies in recent times. Businesses, including hotels, are being urged to take accountability for their part in the environment's decline. This study sought to ascertain the degree to which hotels in the Sunyani Municipality had adopted sustainable initiatives. Data from forty (40) hotel managers in the Sunyani Municipality were gathered quantitatively using a simple random sampling and stratified procedure. In these surveyed hotels, the adoption of green practices is not governed by any policies, according to the findings. The element influencing the hotels to adopt and implement green initiatives was customer demand. Of all the green practises, managing liquid waste was the most often used. According to the study's findings, most hotels in the municipality contribute less to reducing the harmful effects on the environment. The implications are that there is the need for green management training which would help strengthen hotel employees' sustainability practices.*
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Greening in the hospitality sector are becoming more popular on a global scale. Going green have drawn the attention of both individuals and companies in recent times. Businesses, including hotels, are being urged to take accountability for their part in the environment's decline. This study sought to ascertain the degree to which hotels in the Sunyani Municipality had adopted sustainable initiatives. Data from forty (40) hotel managers in the Sunyani Municipality were gathered quantitatively using a simple random sampling and stratified procedure. In these surveyed hotels, the adoption of green practices is not governed by any policies, according to the findings. The element influencing the hotels to adopt and implement green initiatives was customer demand. Of all the green practises, managing liquid waste was the most often used. According to the study's findings, most hotels in the municipality contribute less to reducing the harmful effects on the environment. The implications are that there is the need for green management training which would help strengthen hotel employees' sustainability practices.

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1. INTRODUCTION

Due to the decline in environmental quality, environmental issues are gaining attention on a global scale. As a result of issues like global warming, air, water, and land degradation, more and more hotels throughout the world are starting to use ecologically friendly business

strategies (Leonidou, 2013). Teng, Wu, and Liu (2015), highlighted that initiatives motivating hotel managers to conserve resources like water and energy while also lowering their operational expenses and safeguarding the environment is referred as green practice. A "green practice" are eco-friendly approaches that are established and executed in minimising wastage (water, energy).

While the service industry particularly the hospitality sector continues to grow in importance in contributing to GDP in various countries, it cannot escape from its responsibility for contributing to environmental degradation and climate change (Kasim, 2009). The sector can have an impact on the planet in a number of ways, including the excessive use of "natural resource", infrastructure building and tourist visits (Robinot & Giannelloni, 2010). Since the hotel sector uses a lot of resources, green methods must be used by these businesses to prevent the destruction of the environment. For sustainability, the hospitality sector across the globe is beginning to incorporate green practises into the majority of their operations.

Additionally, it has been noted that travellers (business and leisure) are increasing becoming aware of environmental issues of places they travel to, that is; if intended destination is environmentally friendly (Sara & Ragan, 2013). Environmental concerns in the hotel industry include waste recycling, energy and water conservation among others (Mensah, 2006). As guests become more conscious of environmental deterioration and overconsumption of resources such as commodities, energy, and water, they are becoming more interested in staying in "green" hotels (Han et al., 2010). Authorities and tourism stakeholders are now under increasing pressure to encourage eco-friendly practices and green products and services in hotels as a result of hotels' negative environmental impact (Moreo, 2008). To become "eco-friendly hotels or green hotels, lodging facilities must demonstrate responsible behaviour, such as water and energy-saving and waste reduction, in order to become green hotels" (Manaktola & Jauhari, 2007.pg.17).

The goal of becoming green is to use technologies that will not destroy the environment by causing pollution or exhausting natural resources. Numerous advantages have been identified as a result of the adoption of green practises, according to studies that have been conducted such as financial gain, acquiring a competitive edge, increasing brand value, and winning over customers' loyalty among others (Mbasera, Du Plessis, Saayman & Kruger, 2016; Dodds, 2008).

In Africa, a study conducted in Zimbabwe by Mbasera, Du Plessis, Saayman & Kruger, (2016), indicated that there appears to be no existing legislation regulating hotels to implement environmentally friendly practices (Maphosa, 1997). In a study on a sustainable wastewater management strategy by Nhapi and Gijzen, (2005) in Zimbabwe, findings revealed a lack of understanding of environmental resource management. Researchers discovered that many South African hotels do not engage in eco practices because no regulations or legislation are forced (Van der Merwe & Wocke, 2007). Top management's vision and individual hotel managers both have a role in motivating hotels to implement green practices (Rogerson & Sims, 2012). Spenceley, (2005), highlighted that policies, programmes, and regulations for eco practices in hotels in Southern part of Africa is in a fragmented manner, which is cause for concern.

In Ghana, some studies have been done by Mensah, (Mesah, 2006, 2008, and 2012) in Accra but few or none in the hotels sector in the Sunyani municipality. To meet the global market from guests for eco lodgings, green management rules and regulations need to be made and put into

place. The study is crucial because customers are more informed of the need for hotels to go green and hoteliers cannot afford to remain unconcerned. As a result, baseline data on eco-friendly hotel practises in the Sunyani municipality are required in order to create an environmental management programme for the industry. Hence, this study seeks to fill in this gap. Specifically, the study sought to:

1. To ascertain the degree to which hotels in the Sunyani municipality have adopted green practices.
2. To examine influential factors in the adoption of green practices among hotels in the Sunyani municipality.

2. LITERATURE REVIEW
2.1 Green practices

Green practices is about utilizing goods and techniques in a green way prevents pollution and the depletion of natural resources from having a detrimental influence on the environment (Perks, 2010). Environmental management can be thought of as an ongoing process that is implemented through management decisions. It involves monitoring a hotel's operations and developing appropriate plans and activities to lessen any adverse environmental effects (Mensah, 2006). Hotels have a significant environmental impact, contributing to a variety of global issues, the most significant of which is climate change (Bahadanowcz et al., 2011). Hotel activities generate greenhouse gas emissions, including CO_2 and chlorofluorocarbon (CFC), which are harmful to the environment and human health (Verginis & Wood, 1999). Hotels have been demonstrated to have the greatest adverse effects on the environment of all commercial structures (Rogerson & Sims, 2012). According to estimates, a typical hotel emits "between 160 and 200 kilogrammes of CO2 per square metre of room floor space per year, and the average five-star hotel's water use per guest per night is between 170 and 440 litres" (Andrea, 2007.pg.17).

This study defines green practises as internal actions carried out by a specific hotel with the intention of implementing eco-friendly practises in order to become a green facility to maximise profit. The study examined five environmentally friendly behaviours: controlling liquid waste; solid waste; green energy use and efficiency; air quality; and environmental purchasing.

2.2 *Liquid waste management*

Water is extremely vital in the accommodation sector. Water management entails storing wastewater for various purposes and lowering water consumption (Tang, 2012). Water is utilised in hotels on a daily basis for cleaning, cooking, and drinking. The average water usage pattern of hotel visitors is estimated to be around 170-500 litres per day (Mungai & Urungu, 2013). According to research, green hotel activities include the deployment of water conservation techniques (Rogerson, 2012). "The use of water-efficient devices such as low-flow or infrared-activated faucets, low-flow showerheads, low-water-volume toilets, sink aerators, regular fixing of toilet and bath leaks are examples of these measures" (Hsiesh, 2012. pg.28). By collecting rainwater and using it to flush toilets, hotels can keep their operations waste-free (Moreo, 2008). Harju, (2012) in his study indicated that waste water treatment necessitated a high level of

technical expertise. Given the absence of relevant knowledge, this may be the main cause of certain hotels' poor performance in the field of water recycling and reuse and expertise.

2.3   *Solid waste management*

Hotels are regarded as an important part of the hospitality and tourism industry, as well as a major supplier of garbage (Molina-Azorn, Claver-Cortés, Pereira-Moliner & Tar 2009). Waste management is a comprehensive approach to waste prevention that involves a wide range of solutions for waste management that are environmentally responsible, commercially viable, and ethically acceptable (McDougal, et al., 2001). A hotel that implements a solid waste minimisation programme can save money on garbage transportation fees while also being more ecologically friendly. This is becoming more and more the case as landfill costs increase and solid waste is recognised as a severe environmental problem (Moreo, 2008). Dealing with food waste is an additional component of a solid reduction and recycling approach as well as table leftovers, cooking losses, and packing mistakes that cause food waste to build up.

2.4   *Green energy consumption and efficiency*

The functioning of a hotel necessitates the use of energy for effective operation (Bohdanowicz, 2006). In light of this, energy conservation has long been regarded very important aspects of sustainability in the hotel sector, because these facilities use a lot of power for various operating purposes (Kasim, 2017). Alternative energy sources, such as renewables, are critical, resulting in a shift in energy supply to more sustainable solutions. "Implementing renewable energy programmes such as the use of wind and solar power, adoption of automated energy control systems, installation of energy-efficient laundry equipment, use of digital thermostats to control guestroom energy consumption, and installation of occupancy sensors (which automatically turn the lights off when guests leave the room)" are energy management practices' highlighted by Gise, (2009. Pg.12). Green hotels use energy-saving methods such as use of energy saving bulbs to make their hotels more energy-efficient (Hsieh, 2012). This way, less energy is consumed.

2.5   *Air quality management*

As the hotel sector grows more competitive, hotel expansion is becoming the order of the day. This raises awareness of the damaging effects on air quality (Cascardo, 2007). In order to improve air quality in hotel rooms, it is strongly suggested that ecologically friendly and non-toxic cleaning chemicals be used, particularly in housekeeping. Indoor air quality is defined by the US Environmental Protection Agency (EPA) (2009.pg.57) as "the quality of air inside buildings in terms of pollutant concentrations and thermal conditions that affect the guest's health, comfort, and performance". Energy efficiency and environmental measures (clean air) are related and this can lower the risk of health-related liability while also improving employee and guest interactions.

Chlorofluorocarbons, for example, are an ozone-depleting substance that can release toxic air pollutants through poorly maintained heating, ventilation, and air conditioning (HVAC) devices in lodging establishments (Suttell, 2005). Controlling air quality in lodging facilities is primarily motivated by concerns about human health. Non-smoking policies are the most

common focus of green practices for air quality. The well-being of guests and employees is the motive behind no-smoking regulations (U.S. EPA, 2009).

2.6 *Green purchasing*

Green purchasing is described as an eco-responsible method of buying that is more environmentally friendly and promotes recycling and reuse of materials while maintaining the performance standards for the products (Millar, Mayer & Baloglu, 2012). The biggest impediment to effective green purchasing is the high cost of environmental programmes. It is preferable to utilise paper created from recycled items rather than plastic-based packaging, which is very polluting (Allen, 2007). According to Moreo, (2008), hotels should acquire locally cultivated food since it is fresh, indigenous, and emblematic of the place, thus avoiding financial leakages in hotels and helping the local economy to the greatest extent possible.

It's also crucial that purchases are made from vendor who exclusively offers items that encourage environmental sustainability, social justice, and fair-trade ideals (Allen, 20012). Green shopping from environmentally friendly suppliers is also suggested (Millar, Mayer & Baloglu, 2012). Regarding guest rooms and food and beverage outlets, hotels can purchase regenerated sustainable and environment packaging including take-out containers, papers, cleaning supplies, and other goods made from previously recycled bio-based (Timothy & Teye, 2009).

3. CURRENT SITUATION IN THE SUNYANI MUNICIPALITY

Currently, increased energy demand, a greater strain on the treatment of solid waste and industrial discharges into land and air are only a few of the numerous severe environmental consequences of the hotel sector. As a result of these implications, the protracted repercussions of such negative environmental influences, notably those connected to global climate change, are quite unknown (Rogerson & Sims 2012). Hence, the need for this study. Hotels in the Sunyani municipality lacks data on their green management activities, yet a wide range of environmental effects have advised that rapid action is necessary to mitigate these impacts. Hotels in the Sunyani municipality are witnessing a lack of coordination in the development, formulation, and implementation of green management strategies and this should be a matter of concern. In order to meet the growing demand from guests for more environmentally friendly lodgings, green management rules and regulations (policies) need to be made and put into place.

4. INFLUENTIAL FACTORS IN ADOPTING GREENING

This study employed four factors influencing green practices: "government regulation and policy, customer demand, level of competition and attitude toward change". Because they are commonly employed in other sustainability studies, these are determined to be key drivers of environmental management practices.

4.1. Government regulation and policy

Regulation, according to Al-Shourah, (2007), is a system that are upheld by the regulatory agencies of a region or nation. Laws pertaining to environmental protection, control legislation, business suspensions, and penalties are all part. Policies have a significant effect on how green innovation practises are applied (Tar et al., 2009). The circumstances that these

various justifications seek to explain why businesses adopt activities that go beyond regulatory compliance are yet unknown, (Delmas &Toffel, 2004).

4.2.   Customer demand

Specification of particular green standards in products and services by purchasing firms or individuals is termed customer demand (Eltayeb, Zailani & Jayaraman, 2010). Customer demand is viewed as the expectations, needs, and guidelines that are set by a company's direct clientele and are to be adhered to by the organisation in the development of its products (Christmann & Taylor, 2001). Customer demand significantly improves environmental management, according to prior studies (Le et al., 2006). Serlen, (2008) backed up this claim by claiming that consumers felt more responsible for conserving and caring for the environment and that their environmentally friendly views are closely linked to their positive intent to purchase green products and services at a premiums.

4.3.   Level of competition

Competition viewed as a situation where the intensity of rivalry may be high due to a large number of market competitors and the absence or availability of opportunities for future expansion can be difficult because of the large number of market competitors and the absence or availability of opportunities for future expansion (Jaworski & Kohli, 1996). According to a study, competition increases the likelihood of being creative and innovative in terms of environmental effects (Sigala, 2006). Competition pressure boosts adoption rates and demand for new technologies, resulting in increasing environmental unpredictability.

4.4.   Attitude towards change

According to Le et al. (2006), attitudes toward change are the behaviours that potential adopters regard as novel. Hurley and Hult (1998) indicated that the ability of a business to enter inventive emerging markets with new or current services in which it may implement innovative solutions is termed as its attitude toward change. According to Le et al. (2006), the most notable finding was a favourable relationship between an organization's attitude toward change and environmental management techniques. When resources are available, Organizations with innovative cultures are more likely to use innovations more frequently and acquire a competitive advantage (Hurley & Hult, 1998).

According to Gifford, (2008), environmental attitudes is "an individual's concern for physical environment as something that is worthy of protection, understanding or enhancement". It is common to predict environmentally friendly behaviour using attitudes (Laroche et al., 2001). Hotel employees attitudes toward change and green practises and organisational factors like size, location, and financial situation all have a significant impact on how concerned they are about the environment and how willing they are to take action (Bohdanowicz, 2005; Le et al., 2006).

4.5. Theories underpinning the study

This study applied the "resource-based theory, the institutional theory, and the theory of planned behaviour". According to the "resource-based theory" a company is defined as a huge group of resources that utilise and store diverse and immobile resources. Offering insightful

information on the advantages to an organization's ability to compete by increasing its environmental commitment. Businesses function within a societal context of norms, values, and implicit judgments about what underpins or accepts economic behaviour from an institutional standpoint, meaning that human behaviour is motivated by social justification and social obligation in addition to economic optimization. This is the outcome of a company's development of competitive competencies. A wide spectrum of human behaviours can be accurately predicted by the "Theory of Planned Behavior (TPB)", utilizing high predictive value (Aragon-Correa & Sharma, 2003). The desire of an individual to engage in a certain behaviour is an essential feature of the concept of planned behaviour, as it was in the original theory of reasoned action. The motivating factors that affect behaviour are expected to be captured by intentions, which are measures of how much effort "people are willing" to put forth to carry out the intended behaviour.

5. METHODOLOGY

5.1. Study area

The Bono region is one of the sixteen (16) administrative regions of Ghana with twelve (12) districts and Sunyani as its regional capital also known as green city of Ghana. Sunyani can pride itself as the cleanest capital city with a major conference destination with hotels springing up. Sunyani is surrounded by mining communities, cocoa and timber farms as well as tourist destinations, making the region a hub for tourist and investors. Their distinctive tourist attractions draw visitors from far and near. The region is a stopover for visitors from the south and the north. The region's tourism commercialization has increased the demand for accommodation. As a result, many hotels, guesthouses, and budget hotels have sprung up to fulfil the increased demand for lodging. The study location was chosen because there is a serious demand for accommodation by travellers, both leisure and business within the region. Figure 1 represents the map of the study area.
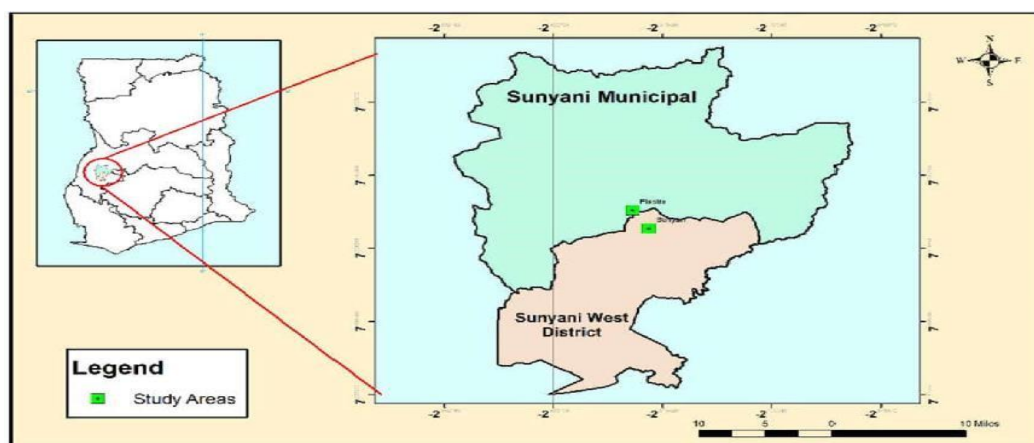

Figure 1. Map of the Sunyani Municipality.
Source: Foli et al. (2020).

5.2.   Research design and paradigm

A descriptive research design was used for this investigation. A descriptive survey is a quantitative research method that seeks to collect measurable data for statistical analysis of the sample (Creswell & Creswell, 2018). According to the positivist view, the reality is constant and unaffected by the thing being examined, therefore it can be observed and explained objectively (Oberiri, 2017). As a result, the green practices study is based on a quantitative method-based post-positive paradigm. The quantitative research method was used in the investigation.

5.3.   Population and methods (sampling, sample size)

The target population of this present study encompassed hotels managers within the Sunyani municipality. Data from GTA (2019) shows that 74 registered hotels are situated within the Sunyani municipality, consisting of 1 star, 2 star, 3 star, and budget hotels. The study used simple random sampling and stratified technique. This sampling approach was used for the investigation because the study population and sample frame were known. Thus, all units within the sample population had an equal probability of being chosen. A sample is a subset of a population used to assess the population's parameter. It is also the total number of elements, cases, or participants in a study (Agarwal, et al., 2021; Malhotra, 2010). The hotel managers (n = 50) were chosen using stratified random sampling. The GTA's hotel classification system served as the stratum criterion. The strata were three-star, two-star, one-star and budget.

5.4.   Instrumentation, design and application

The questionnaire was the primary tool used to collect data from respondents. The data was gathered by distributing surveys directly to hotel managers. The questionnaires are divided into three modules. The first section described the background characteristics of respondents such as gender, age, educational background etc. Section two documented hotel characteristics such as ownership type, number of rooms, years of operation etc. Section three highlighted hotel green practices including environmental policies and practices in their facilities.

Fieldwork began in May, 2020 and lasted two months. Every day, we called randomly chosen hotels. Some hotel managers self-completed questionnaires. Some hoteliers refused to cooperate. Others accepted the questionnaires, but collecting the completed ones was difficult. This was not only time-consuming but also costly. For the sample size of 50 managers, extra questionnaires were printed and managers from other hotels in the same category were chosen at random. Out of the total of 50 hotels sampled based on stratified sampling technique, 40 hotels returned their questionnaires for analysis.

5.5.   Ethical consideration

Any scientific activity relies on the ethical elements of any study, as well as how they are discussed. This study took informed permission, anonymity, and secrecy into account. According to Neuman (2014), researchers should not put participants under undue pressure to engage in experiments. Prior to this study, informed permission was sought from respondents. They were explicitly informed of the study's goal, and those who refused to participate were not pressured into doing so. Respondents' anonymity was ensured because their names and other personal information were not linked to the individual responses provided. Neuman (2014) proposed that

even if a researcher cannot guarantee privacy, he or she should nonetheless maintain the confidentiality of the participants. Respondents were assured of their privacy because this exercise is purely academic.

6. RESULTS AND DISCUSSIONS

6.1 Socio-Demographic characteristics of respondent

Analysis of the field data was carried out using Statistical Package and Service Solution (SPSS) software version 21. This was encoded and entered into the SPSS software for further analysis and interpretation. This data was however, meticulously adjusted in order to exclude any outliers that could have jeopardised the validity of the findings. Descriptive statistics and factor analysis were used to present results. Results of this study indicated that the highest age range of respondents is 31-40 years representing 42.0% whereas 51 and above recorded the least representing 17.5% of the total respondent. More males were recorded 65% against 35% for females. Marital status recorded 70% married and work status 62.5% fulltime workers of the total respondent. With respect to the level of education of the respondents, more (72.5%) had their tertiary education. This implies that there are more males managers in the hotel industry in Sunyani as compared to their female counterparts, who are between the ages of 31-40 and majority of them are married and also are employed on full time basis. This information is represented in Table 1 Socio-Demographic Characteristics of Respondent (N=40).

Table 1. Socio-Demographic Characteristics of Respondent (N = 40).

Demographics	Categories	Frequency	Percentage (%)
Age	Below 30	8	20.0
	31-40	17	42.5
	41-50	8	20.0
	51 and above	7	17.5
Gender	Male	26	65
	Female	14	35
Marital status	Single	12	30.0
	Married	28	70.0
Work status	Fulltime	25	62.5
	Casual	15	37.5
Status	Proprietor	7	17.5

	General manager	17	42.5
	Manager	16	40.0
Level of education	SHS	11	27.5
	Tertiary	29	72.5
Years of service in this hotel	Less than 1 year	4	10.0
	1-3 years	12	30.0
	4-6 years	13	32.5
	More than 6 years	11	27.5
Years of service in the hotel/ hospitality industry	Less than 1 year	4	10.0
	1-3 years	6	15.0
	4-6 years	14	35.0
	More than 6 years	16	40.0

Source: Field survey, (2020).

6.2.   Hotel characteristics

The study sought some information about the hotels in the Sunyani municipality. From table 2, Hotels that have been operating between 6-10 years, represents 67.5% of the total sample size whiles hotels operating above 20 years representing 5% of the total sample. The highest number of rooms ranged from 11-20 which constitute 45% compared to 50 rooms representing 5%. From the survey, majority (72.5%) of the respondents were from the budget hotels and the least hotel rated 3-star represents 2.5% of the total sample size. Most hotels were proprietorship owned representing 55.0% whilst limited liability hotels were made up of 45.0% of the total sample size. This means the municipal has more budget hotels with rooms ranging 11-20 and these hotels are individually owned and has been in operation between 6 – 10 years. The municipality is lacking 5 -4 star rated hotels and also multinational hotels as compared to other regions like Kumasi and Accra. Table 2 represent Hotel Characteristics (N=40).

Table 2. Hotel Characteristics (N = 40).

Hotel characteristics	Categories	Frequency	Percentage (%)
Number of years in operation	Under 5 years	3	7.5
	6-10	27	67.5

	11-15	8	20.0
	Over 21 years	2	5.0
Number of rooms available	0-10 rooms	13	32.5
	11-20 rooms	18	45.0
	21-30 rooms	5	12.5
	31-50 rooms	2	5.0
	Over 51 rooms	2	5.0
Classification of the hotel	3-star	1	2.5
	2-star	4	10.0
	1-star	6	15.0
	Budget	29	72.5
Type of ownership	Sole proprietorship	22	55.0
	Limited Liability	18	45.0

Source: Field survey (2020).

6.3. HOTEL GREEN PRACTICES

6.3.1. Environmental management policy

The first objective of the study was to identify green practices adopted among hotels in the Sunyani Municipality. The information is represented in percentage in Figure 2. The pie chart showed 22% of the hotels in the study area indicated they have an environmental management policy whiles majority (78%) of the hotels do not have any environmental management policy. It is observed that the high graded hotels are the ones having policies as compared to the budget hotels but the question here is, is it really working effectively with those hotels having these policies? This is in line with the research by (Mbasera, Plessis, Saayman & Kruger, 2016) who highlighted that without the direction of a policy, the execution of green projects is done haphazardly. Hsieh (2012. Pg.105) argues that "a green management policy is a top management's declaration of its commitment to the environment".
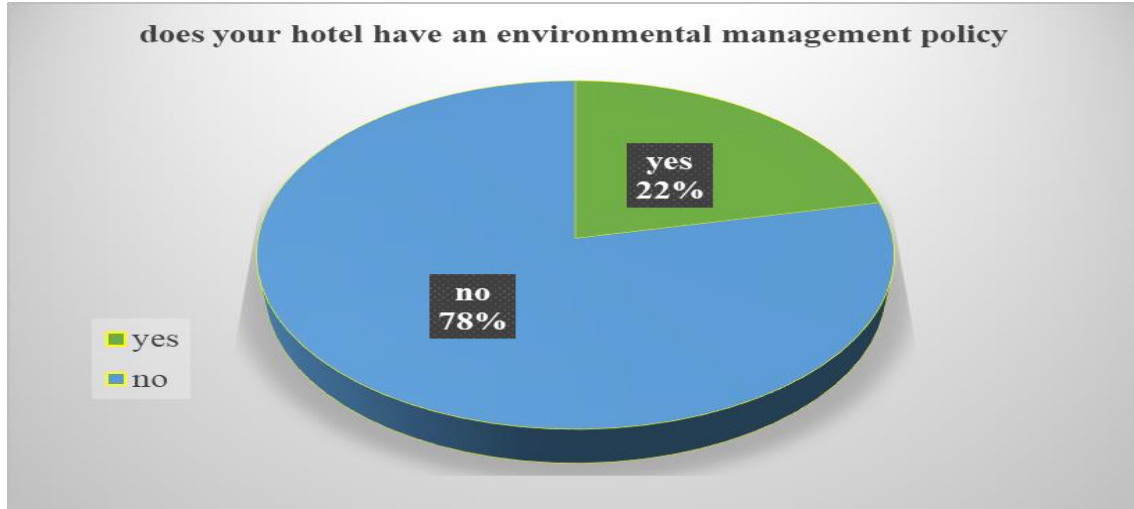
Figure 2. Pie chart showing an environmental management policy.
Source: Field survey (2020).

6.3.2. Liquid waste management

It is evidence from Figure 3 that 57.5% of hotels in the municipality employ liquid waste management to a large extent whiles 20% employ it to a moderate extent and 22.5% employ water and liquid waste management to a small extent. Most of the hotels had water collecting ducts that stored rain water and was used for irrigation and other purposes. The study demonstrates that while hotels make significant efforts to conserve water, they have very subpar practises for recycling and water reuse. Previous research particularly that of Harju, (2012), conform to this present study that, waste water treatment necessitated a high level of technical expertise. This might be the primary reason why some hotels in the municipality is performing poorly in the area of water recycling and re-use without the necessary information and expertise. Figure 3: A bar chart showing water and liquid waste management.
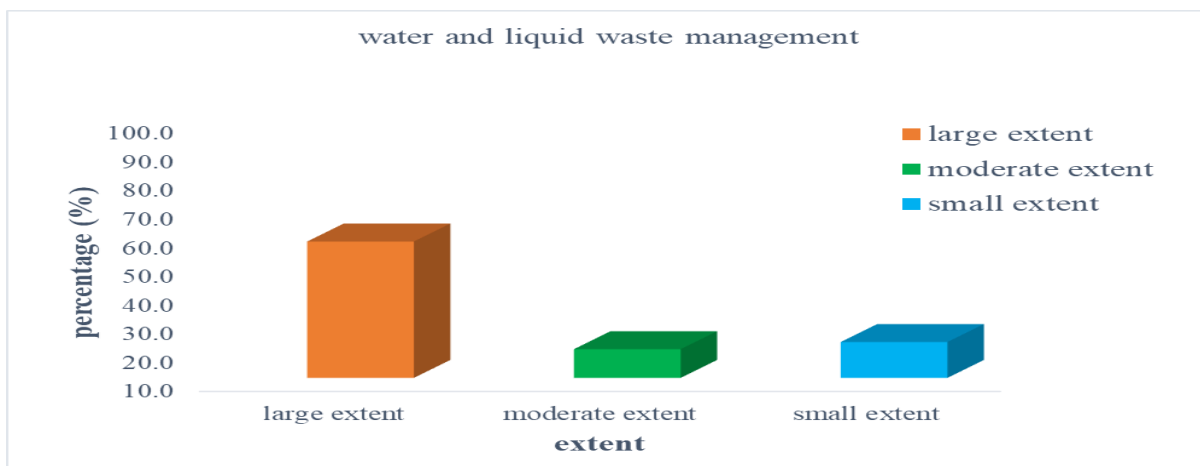

Figure 3. Bar chart showing water and liquid waste management.
Source: Field survey (2020).

6.3.3. Solid waste management

The extent to which the hotels in the Sunyani municipality employ solid waste management is highlighted in Figure 4 shows. It is vividly seen that, 65% of the hotels employ solid waste management to a large extent whiles 5% employ it to a moderate extent and 30% employ solid waste management to a small extent. Hotels in the Sunyani municipality had much knowledge on solid waste management as compared to the other green practices. This ascertains to the fact that solid waste management is of great concern to hotels in the municipality. Hotels have adopted practises to reduce solid waste, which is encouraging in terms of green practises, and they also have friendly disposal methods. However, the reusing and recycling of solid garbage in their hotels is quite unsatisfactory. Some earlier studies have agreed with this, particularly on solid waste recycling (Cohen, 2006). Some operators are uninterested in decreasing and recovering waste.
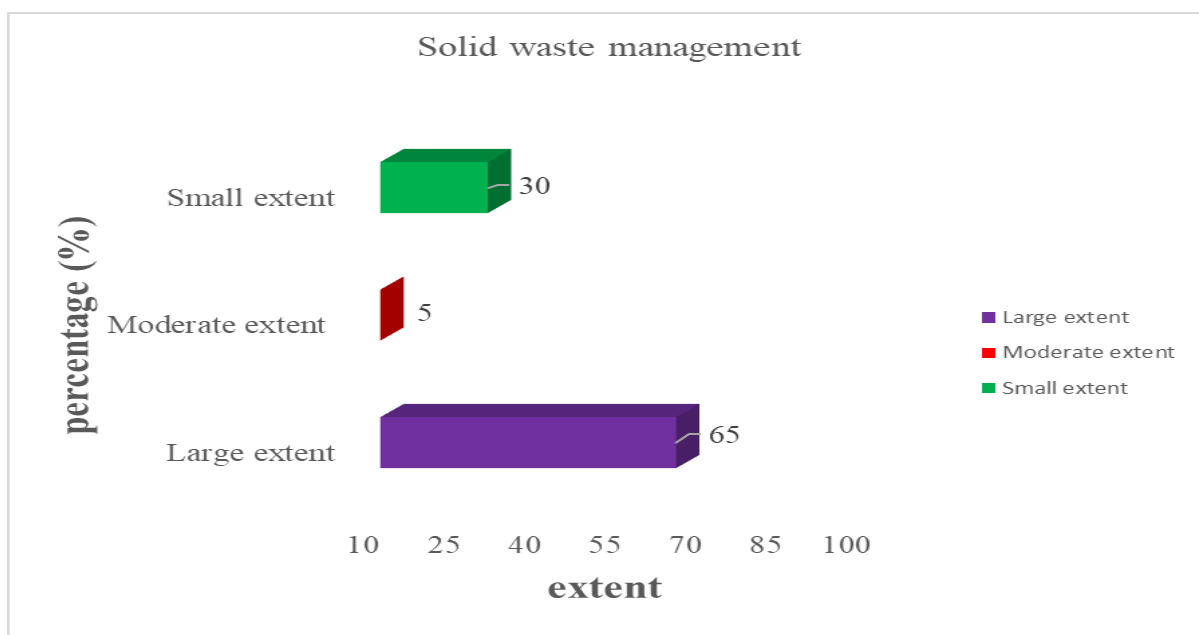

Figure 4. Bar chart showing solid waste management.
Source: Field survey (2020).

6.3.4. Green energy consumption and efficiency

The pie chart showed in Figure 5 indicates the extent to which the hotels in the Sunyani municipality employ green energy consumption and efficiency. From the study, 32% of the hotels employ green energy consumption and efficiency to a large extent whiles 28% employ it to a moderate extent and 40% employ green energy consumption and efficiency to a small extent. Some of the star rated hotels had solar panels installed whiles others used energy saving bulbs and used power saving appliances. The study reveals that some of the hotels in Sunyani are trying to save energy which is in line with Dutta (2008) study on measures in saving energy. This contradict Mensah, (2006) finding which reveals that the studied hotels in the GAR know much about energy management and efficiency than any other green practice. Renewable technologies helps to reduce carbon emissions. Odeku (2018), stressed in his study that "switching to the use

of renewable energy as an energy source is the perfect solution to save the earth's biosphere and is essential to the stabilization of the climate worldwide".
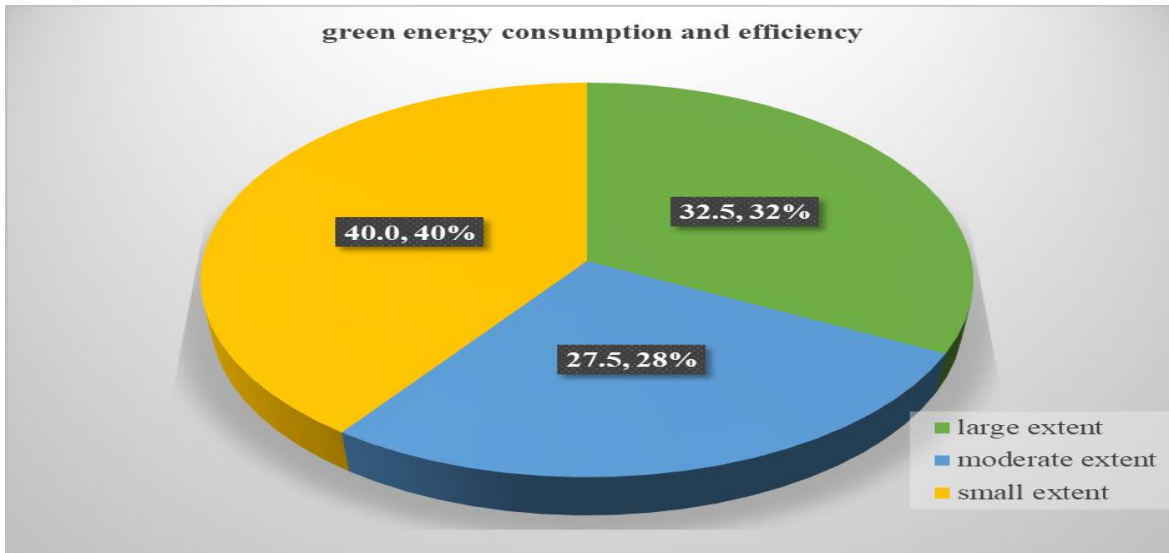

Figure 5. Bar chart showing green energy consumption and efficiency.
Source: Field survey (2020).

6.3.5. Air quality management

It is showed in Figure 6 that, 25% of the hotels employ air quality management to a large extent whiles 22.5% employ it to a moderate extent and 52.5% employ air quality management to a small extent. One of the least adopted variable is the air quality management. In this category, Sunyani hotels have been slow to implement this green practise. This indicates a low-level knowledge on this particular green practise adoption. Previous research, particularly by Emblem and Hewett in 2001, demonstrated that "air quality" has received attention in the hotel business. According to the findings of this study, hotels in the Sunyani municipality showed limited involvement in "air quality" regulation.
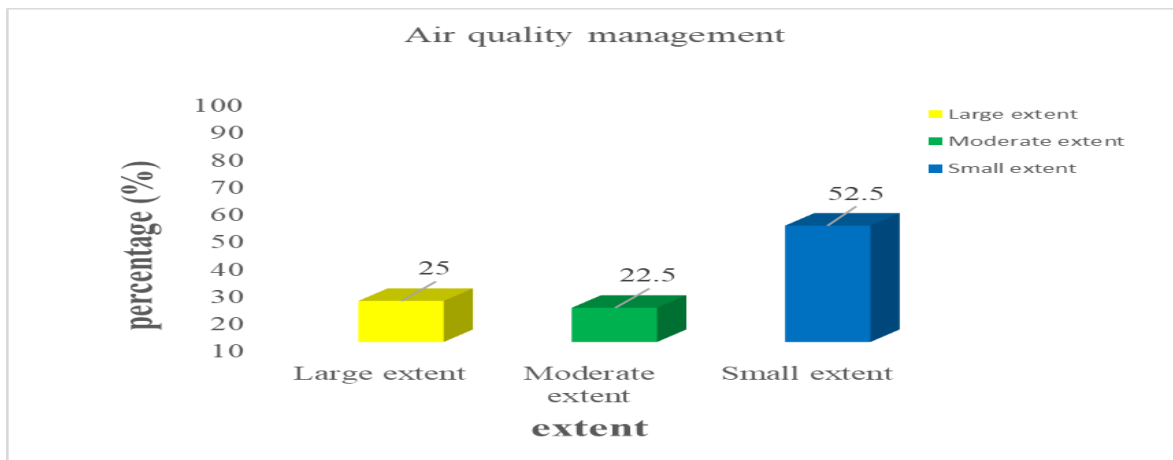

Figure 6. A bar chart showing air quality management.
Source: Field survey (2020).

6.3.6. Environmental purchasing

From the chart in Figure 7, 17.5% of the hotels employ environmental purchasing to a large extent whiles 32.5% employ it to a moderate extent and 50% employ environmental purchasing to a small extent. Environmental purchasing was the worst adopted known green practice of the hotels studied. "Hotels can acquire recycled eco-friendly packaging such as take-out boxes and bags, stationery, toilet paper, and other items created from previously recycled biodegradable packaging for their guest rooms, administrative offices, and kitchens" (Timothy & Teye, 2009.pg. 67). There is the need for more training to strengthen hotel manager's knowledge on environmental purchasing in the municipality.
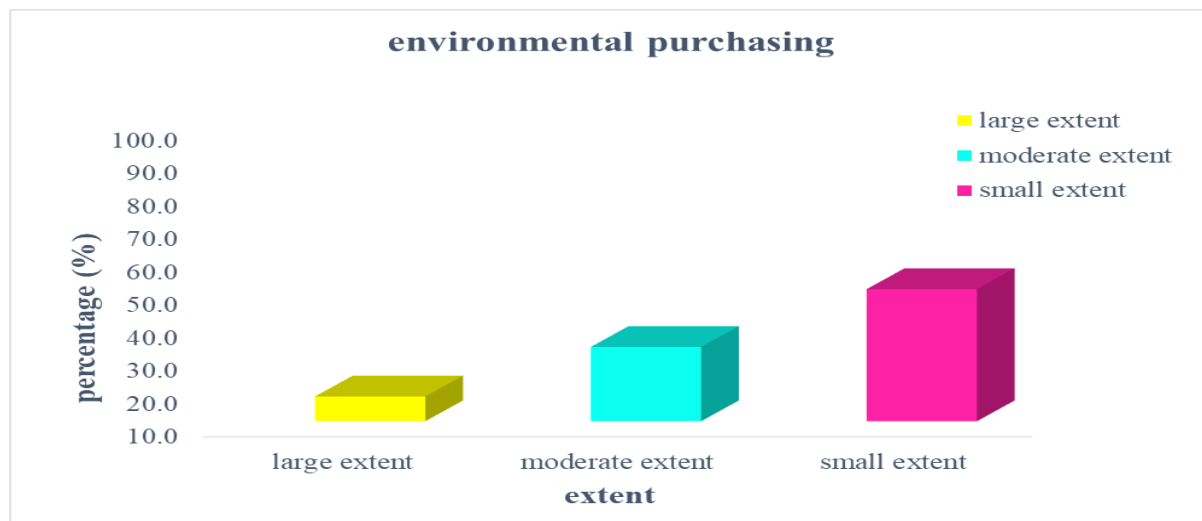

Figure 7: Bar chart showing environmental purchasing.
Source: Field survey (2020).

7. FACTORS THAT INFLUENCE THE ADOPTION AND IMPLEMENTATION OF GREEN PRACTICES

The study also sought to determine factors influencing green practices among hotels in the Sunyani municipality. This information is represented on the Table 3. Customer demand came out as the most pressing factor that influenced the hotels to go green with 65.8%. According to earlier studies, consumer demand significantly improves green practises (Le et al., 2006; Delmas & Toffel, 2004). Serlen, (2008) provided evidence to support this idea by pointing out that consumers felt more responsible for protecting and caring for the environment, and that customers' environmental attitudes are closely correlated with their readiness for extra fee payment for green purchases. According to Butler (2008), many hotel operators hold off on implementing green measures until consumer demand grows and operating expenses decline.

More so, government regulation and policy recorded 45.6% as the second influential factor in going green in the Sunyani municipality. According to "institutional theory" regulatory systems are the ones to apply pressure on businesses or provide motivations for firms to adopt specified actions (Scott, 2004; Scott, 2003). Research reveals that regulation have a major impact

on the implementation of green practises by businesses (Tar,' et al., 2009; Darnall, eta l., 2008; Le, et al., 2006; Delmas & Toffel, 2004).

Furthermore, the third factor was attitude towards change with a percentage of 35%. Businesses exhibiting stronger innovation are productive and are able to adjust in contemporary settings by developing competencies leading to positive outcomes. According to Le et al. (2006), one of the most important correlations was a support for environmental management strategies and organisational receptivity to change. Hurley and Hult (1998) highlighted that, there is the need for market performance strategies to place more focus on a willingness to adapt than on learning as the main market response strategy. This is where the theory of planned behaviour come into play. The motivating factors that affect behaviour are expected to be captured by intentions, which measures how much effort "people are willing" to put forth to carry out the intended behaviour.

Finally, level of competition recorded 21.6% as the least factor. When competition intensifies, Businesses adapt by taking calculated risks and taking proactive measures that include research and adventurous learning in order to avoid engaging in pricing or promotion wars. According to empirical data, competition increases the possibility that innovations will be adopted when taking environmental factors into account (Sigala, 2006). Competition raises environmental unpredictability and both the necessity for and the rate at which innovation is adopted. As a result, managers who perceive a higher amount of competition will practice greening to gain a large market as compared to those who do not practice it (Sigala, 2006). Table 3 represents Factors Influencing the Adoption and Implementation of Green Practices in the Sunyani municipality.

Table 3. Factors influencing the adoption and implementation of green practices.

Factors	N	Percentage (%)	Mean	Standard Deviation
i. Government regulations and policy				
Change in laws on pricing is expected	40	47.5	1.7000	.75786
Change in policies on service standard or quality is predictable	40	37.5	2.0750	.91672
Governmental regulation or policy changes have effect on marketing and distribution systems	40	55.0	1.6250	.77418
Environmental standards frequently receive new rules and legislation from regulatory agencies.	40	42.5	1.7500	.74248
		45.625	1.7875	
ii. Attitude towards change				

In our hotel, technical innovation that is founded on research findings is widely embraced.	39	50.0	1.7692	.87243
Employees in our organisation face consequences for novel ideas that fail	40	20.0	2.2750	.78406
Our company views innovation as being too dangerous and resists it.	40	35.0	1.9500	.81492
		35.0	1.9980	

iii.   Level of competition

Anything that one competitor offers, others can match readily	40	17.5	2.1750	.71208
Our competitive are relatively weak	39	20.0	2.3077	.79980
There are numerous promotion conflicts in our industry.	40	27.5	2.1750	.84391
		21.6666	2.2192	

iv.   Customer demand

"Customers' service preferences change quite a bit over time"	40	50.0	1.6250	.70484
"Customers tend to look for new services all the time"	40	77.5	1.3250	.65584
"New guests tend to have service-related needs that are different from those of our existing guests"	40	70.0	1.3750	.62788
		65.8333	1.3166	

Source: Field survey (2020).

8. DISCUSSION

It is concluded that solid waste management, followed by liquid waste management, green energy consumption, and efficiency, were the three green practises most frequently used by hotels in Sunyani Municipality. Customer demand is the pressing factor that influenced hotels in the municipality to go green. According to earlier studies, customer demand significantly improves environmental management methods (Le et al., 2006; Delmas & Toffel, 2004).

Government regulation and policy, Customer demand, level of competition have impact on green practises adoption according to this study. Implications are that greening should be encouraged through recognising, promoting, and honouring green hotel mentors for current and

prospective hotel managers and green practise promotion. Government and allied agencies, in particular, should engage actively with smaller hotels and persuade more on managers in emphasising the competitiveness. It will enhance hotel market position especially in a competitive benefit resulting from the growing demand of sustainable and green products and services, particularly among eco-friendly consumers, result in economic benefits due to decreased firm's production costs. An environmental educational program is more effective at encouraging changes in behaviour which is in line with the behavioural theory highlighted in literature. Few managers were aware of and involved in green measures to some extent. Environmental management systems did not persuade the few who adopted the methods. As a result, through seminars and training, independent groups must advocate wider usage of green initiatives that are voluntary.

In addition, as of now, there are no policies in place for green practices in these studied hotels. However, few hotels are indulging in ecologically initiatives. To protect the environment, some hotel managers employ green management techniques because of the environmental problems caused by their businesses. This isn't always the case, though. This suggests a gap between hotel managers' knowledge of appropriate eco-friendly practises, highlighting the need for sustainability - oriented training and increased awareness. The far more essential human resource for hotels is thought to be "training" their staff in highly desired skills and expertise because this can increase staff satisfaction in both their work and personal lives. Besides that, training staff is thought to be an efficient way to boost hotel efficiency and service reliability. Despite the fact that there is limited information about sustainable initiatives among hotels in the Sunyani municipality, the volume and variety of environmental consequences that hotels face suggest that mitigating measures are urgently needed (Rogerson & Sims, 2012; Ishmael, 2006).

8.1. Managerial Implications

Hotel operators are recommended to apply green business practices in their facilities. These regulations offer standards, recommendations and also specify how it must be accomplished to lessen the influence on the environment of hotel operations and also hotels should adopt and track the success of green policies in their facilities. Hotel managers should send their staff for training on green management and environmentally friendly practises developed by green initiative agencies, institutions, and universities. These trainings would help strengthen sustainability in hotel operation which depends heavily on how accessible and supportive green training is to employees. This would also help workers understand how their operations relate to the current generation's environmental issues. They will also recognise that they have a responsibility to reduce environmental consequences by implementing environmentally sustainable projects.

Hotels managers should create sustainability training programmes that will enhance hotel staff awareness of the environment, abilities, and practices. Additionally, Top managers need to focus more on the critical role that green training support plays in raising the bar for hotel sustainability impact. Hotels should create a conducive environment that increases the quality and efficacy of participants in the green training programmes. In order to get a competitive edge through satisfying the needs of the hospitality sector, hotel managers should be conscious of the significance of sustainability practices. By reducing waste and using less energy and water

during operations, you may better serve your clients' environmental needs while enhancing your bottom line.

8.2. Limitations and Future Research

There is some limitation as far as this paper is concerned. First of all, our research is not generalizable. Only hotels in the Sunyani metropolis was of interest to us. In order to compare our findings with those from the other region in Ghana, we would like to look into further, hotels in the entire Bono Region. We presume that it would be beneficial to compare different countries and areas. In addition, we would like to explore in the near future research on relationship between the hotel's financial success and the adoption of environmental policies.

Last but not the least, our focus would be on the level of adoption and implementation of green practices on the various categories of hotels and also examine barriers in implementing green practices among hotels. There hasn't been much research done on managers' roles in hotels' environmentally friendly operations. This would be explored qualitatively. Nevertheless, there is constantly room for advancements.

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Financial Inclusion and SMEs' Performance: Mediating Effect of Financial Literacy

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ARTICLE INFO

ABSTRACT

This study examines the mediating effect of financial literacy on the relationship between financial inclusion and SMEs' performance. Using a targeted sampling technique, we selected SMEs that have been in operation for 5 years and are duly registered with SMEDAN. Meanwhile, a simple random sample was used to select 250 SME operators or managers for the study. Data were analyzed using structural equation modeling (SEM). The results show that financial inclusion is positively and significantly associated with SME performance. There is also evidence that financial inclusion is directly related to financial literacy. Furthermore, the results show that financial literacy has a large positive impact on the performance of SMEs. Financial literacy has also been found to partially mediate financial inclusion and SME performance. The study then recommends that small business regulators work with accounting professional organizations to organize financial literacy workshops, seminars, and short courses for small business owners. This goes a long way in making funding more accessible for small business operators.

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1. INTRODUCTION

Financial inclusion in small and medium enterprises (SMEs) is a major concern for policy makers, academics and entrepreneurs around the world. Financial inclusion is about access to avoidable banking services for economically exclusive entrepreneurs (Odetayo, Sajuyigbe,

Adeyemi, 2020a). The Center for Financial Inclusion (2015) states that financial inclusion is access to a wide range of quality economic services available to customers in a cost-effective, convenient and sophisticated manner. Recently, the rise of COVID-19 has complicated the financial process of SMEs (Anudu and Okojie, 2020).

Faced with this scenario, the Central Bank of Nigeria (CBN) has implemented a National Financial Inclusion Strategy to financially empower SMEs through affordable financial products and services. Start and grow your business. These include efforts to increase domestic bank penetration, an N50 billion credit line for SMEs, the Market Moni program of interest-free loans for SMEs, and the Youth Entrepreneurship with Innovation (YOUWIN) programme. This includes the launch of the Youth Entrepreneurship Assistance Program (YESP) by Industrial Bank (Onyekwena & Kekeruche, 2020).

Despite these superior systems and the availability of modern financial services such as bank cards, online banking applications and insurance, small businesses have been financially excluded. Apparently, the World Bank (2018) laments that over 1.7 billion SMEs are unbanked, especially in emerging markets. This scenario is due to the lack of financial literacy of SME operators (Odetayo, Sajuyigbe & Adeyemi, 2020b). Karadag (2015) argues that the low financial literacy of SME operators impacts the ability of SMEs to grow and achieve sustainable results. The OECD Report (2020) evident that over 70% of SMEs in Asian and African countries are facing distress syndrome due to financial exclusion syndrome.

Financial literacy is recognized by scholars as an important factor influencing the performance of SMEs around the world (Iriboe, Akinyede & Iriobe, 2017). According to Khadijah and Wan (2019), financial literacy is a set of financial skills that enable SME operators to implement financial management strategies. Although many studies have examined the impact of financial literacy and inclusion on SME performance in developed and developing countries, evidence that financial literacy mediates financial inclusion and overall SME performance is lacking. No studies have tested its effectiveness. This latest review aims to fill existing gaps in the literature through the growth of models that identify the mediating effect of financial literacy on the link between financial inclusion and SME performance.

1.1. Theoretical Framework and Development of Hypotheses

The financial Literacy Principles were first developed in 1997 by the Bounce$tart Coalition for Non-Public Financial Literacy. The principles of business literacy envision financial literacy as the ability to apply financial skills and talents to effectively manage financial resources and potentially remain financially secure at all times. For example, it is used to refer to financial product knowledge (bonds, stocks, and mortgages), the concept of financial knowledge (credit), and financial math skills for effective financial decisions (Sajuyigbe, Adeyemi, & Odebiyi, 2017). Empirical studies have linked the financial literacy theory to financial practices (Accounting information system, cash book maintenance, working capital management, financial reporting, inventory control, cash budget, savings behavior etc) (Rathnasiri, 2015; Gallery et al., 2011) . According to Odetayo et al. (2020b), financial literacy theory pave way for SMEs to acquire a spectrum of financial skills to enable them achieve their ivory tower amid financial challenges. Okpara (2011) and Lusardi and Oliver (2006) also argue that financial literacy theory is the driving force for SMEs to have a set of financial skills that help them access financial products and make effective decisions. Therefore, the theory presupposes that SMEs

optimally choose to invest in financial knowledge and education in order to access higher-yielding investments.

1.2.Financial Inclusion

Financial inclusion dates back to the late 1990s and mid-2000s, when many associations began to move from managing microcredit to providing basic access to financial services. Financial inclusion is about access to avoidable banking services for economically exclusive entrepreneurs (Odetayo, Sajuyigbe, Adeyemi, 2020a). The Center for Financial Inclusion (2015) states that financial inclusion is access to a wide range of quality economic services available to customers in a cost-effective, convenient and sophisticated manner. In early 2014, the UK came into the limelight with its financial inclusion approach launched with pre-2014 price points to help SMEs gain financial energy (World Financial Institution, 2018). According to Aduda and Kalunda (2012), financial inclusion is a financial tool that enable SMEs to obtain loans from financial institutions. Financial Institutions Sector (2018), Financial Inclusion follows how people and authorities can access financial products and governments that address the challenges of financial inclusion. The African Development Bank (2013) also defines financial inclusion as an activity that makes financial services accessible, affordable, open and unobtrusive to entrepreneurs. Empirical evidence shows that financial inclusion is the lifeline of sustainability for SMEs around the world. For example, a study by Sajuyigbe et al. (2017) suggests that financial inclusion is important for SME sustainability in international settings in Africa. Also, the Banco relevant Do Brasil file (2010) confirms that financial inclusion is a financial strategy that makes SMEs involved and applicable in the financial industry. A study by Usama and Yusoff (2019) also confirms that financial inclusion has a direct link with the overall performance of SMEs. From the same perspective, Bruhn and Zia (2011) confirm that financial inclusion is linearly related to SME performance. Furthermore, Okoli (2011) confirms that financial inclusion is a key indicator of overall SME performance. Additionally, a study at Kenya's Wisdom to Execution (2014) shows that there can be an impressive correlation between economic inclusion and SME performance. Similarly, research conducted by Njoroge (2013) confirms previous research that financial inclusion is a predictor of SMEs' performance. Based on the above empirical results, the following hypothesis is proposed.

H_1: Financial inclusion is significantly associated with SMEs' performance

1.3.Financial Literacy as a Mediator

There is evidence that financial literacy at the individual and organizational levels is the key to sound financial management and financial breakthroughs (Usama & Yusoff, 2019). Financial literacy is the dissemination of financial skills in corporate practice through the optimal use of financial assets for corporate growth (Know-how, 2014). Many studies have linked economic education and financial inclusion. For example, Cheppekemoni (2017) repeatedly states that monetary literacy is a way of familiarizing people with economic practices including coin budgeting, coin management, savings behavior, ongoing capital management, inventory management, and financial accounting statistics. Research by Fernandes (2015) suggests that financial product know-how and economic literacy in using online banking applications are directly related to financial inclusion. Moreover, Khadijah and Wan (2019) argue that financial literacy is the main driver of financial inclusion. Gallery, Newton, and Palm (2011) also argue that economic inclusion is a financial approach that supports funding choices. Empirical evidence suggests that an individual's business literacy is highly relevant to business

management (Mashizha, Sibanda & Maumbe, 2019). This indicates that the higher a person's financial literacy, the better they manage their money, and vice versa. Research confirms a linear association between financial literacy and SMEs' performance (Odetayo, Sajuyigbe & Adeyemi, 2020b; Usama & Yusoff, 2019; Consciousness, 2014). Also, Lusardi and Mitchell (2014) argue that financial   literacy is positively associated with responsible financial behavior by SME operators and SMEs' performance. Sajuyigbe et al. (2017) assert that financial literacy is a tool for making strong financial decisions. Disney and Gathergood (2013) also conclude that economic statistics are a relevant platform for financial inclusion and overall performance of SMEs. Thus, it is predicted that financial literacy influences financial inclusion and SMEs performance. Therefore, the following hypotheses are formulated:

H_2: Financial literacy significantly influences SMEs' performance

H_3: Financial literacy is significantly associated with financial inclusion

H_4: Financial literacy mediates between financial inclusion and SMEs' performance

Conceptual Model

Independent variable   **Mediator**   **Dependent Variable**
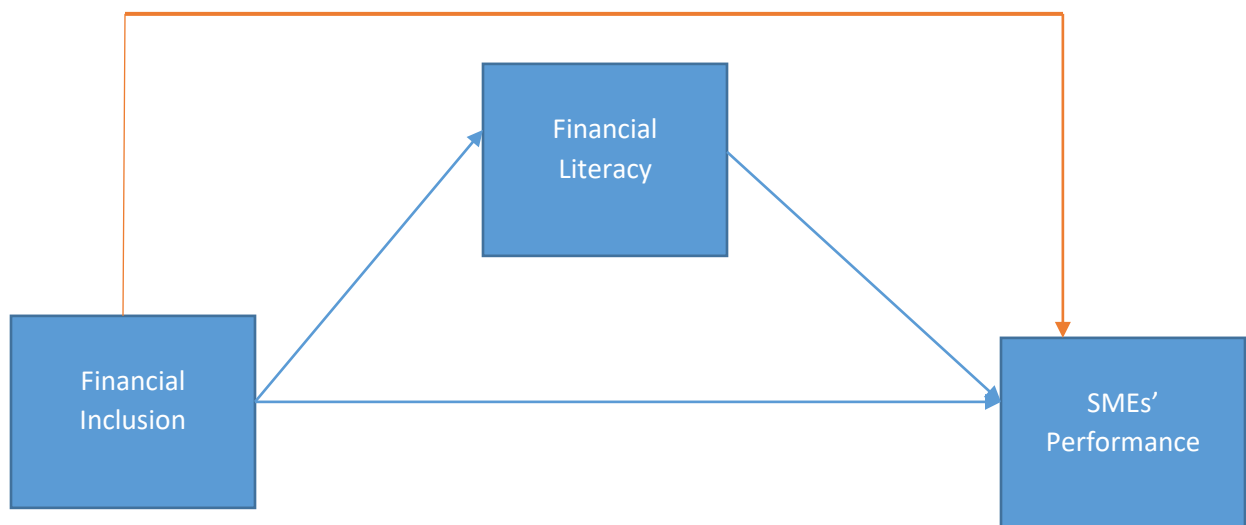

Figure 1: Conceptual Model

2. METHODOLOGY

2.1. Sampling Procedures

Using a targeted sampling technique, we selected SMEs that have been in operation for 5 years and are duly registered with SMEDAN. Meanwhile, a simple random sample was used to select 250 his SME operators or managers as the survey sample size. Sample size was determined by the formula proposed by Slovin (1963).

2.2. Survey Instrument

The instruments used for the study consists of pedagogical entrepreneurship scale, entrepreneurial intention scale, educators' role model scale. The scale was anchored on a five-point Likert scale for all the study instruments.

2.2.1. **Financial Inclusion Scale:** This scale was derived from the study of Odetayo, Sajuyigbe and Adeyemi (2020b). The survey comprises 6 items. The scale's internal consistency factor α was 0.82

2.2.2. **Financial Literacy Scale: T**he scale was developed and validated by Chepkemoni (2017) . The survey comprises 6 items. The scale's internal consistency factor α was 0.79.

2.2.3. **Performance Scale:** This scale was derived from the work of Fernandes (2015). The survey comprises 4 items. The scale's internal consistency factor α was 0.88.

Table 1: Summary of Results of the Measurement Instruments Validation

variable		Cronbach's alpha
Financial Inclusion – Cronbach Alpha –(FIS = 0.851)		
FIS 1	The company internally generated cash from savings Only.	0.795
FIS 2	The company generated cash from a co-operative loan.	0.748
FIS 3	This business is funded through a microfinance line of credit	0.822
FIS 4	The company has easy access to commercial bank loans.	0.764
FIS 5	The company uses only funds borrowed from relatives and friends.	0.798
FIS 6	The company has easy access to micro-insurance services	0.761
Financial Literacy- Cronbach Alpha – (FLS = 0.872)		
FLS 1	Every day we prepare the operating budget of the organization	0.789
FLS 2	The annual financial statements of our business account are always available	0.855
FLS 3	We make daily cash adjustments for our operation	0.797
FLS 4	Improved knowledge of general ledger balance.	0.872
FLS 5	Improved use of online banking application	0.696
FLS 6	Internal control of cash budget	0.748
Performance Scale - Cronbach Alpha – (PS = 0.879)		
PS 1	we have been experiencing high patronage	0.789

PS 2	Our sales are growing rapidly	0.798
PS 3	We were able to establish a leading position in the market.	0.818
PS 4	Our customers are satisfied with our high quality products and services.	0.809

Table 1 above shows that the factor weights for all indicators are greater than 0.5, indicating that the question explains the variability of those variables. This makes the measurement model suitable for analysis.

3. Data Analysis

Table 1: **Structure Equation Modelling without mediator (Direct Effects)**

Path	β-value	t-value	P-value	[95% Conf. Interval	
FI → P	.6032	6.673	***	.4263834	.7815374
FL→ P	.1934	2.122	***	.0143429	.3717957
FI→ FL	.7565	11.743	***	.6301449	.8826756

Note: *** = significant at 5%, FI = Financial inclusion, FL = Financial literacy, P = SMEs' performance

Table 1 shows the direct paths for variables. Using standardized coefficients, a beta value of 0.6032 and a t-value of 6.673 indicate a positive association between financial inclusion (FI) and SME performance. Also, the P-value of 0.000 further indicates that SME performance is strongly influenced by financial inclusion. This means access to financial services is a platform for SME sustainability and growth. This study is consistent with Sajuyigbe et al. (2017) agree that FI is the hub of sustainability for SMEs in African countries. Another study conducted by Aduda and Kalunda (2012) shows that FI in Kenya is positively correlated with SMEs' performance. Similarly, a Banco Central Do Brasil report (2010) confirms that FI is a financial strategy that draws SMEs into the world of finance and makes them relevant. Another study by Usama and Yusoff (2019) reaffirms that FI has a significant impact on SME performance. From the same perspective, Bruhn and Zia (2011) confirm that FI is linearly related to SME performance. Similarly, Okoli (2011) reiterates that FI is a key indicator of SME performance. Similarly, research conducted in Kenya by Wisdom (2014) shows a positive association between FI and SMEs' performance. Thus, H_1 is confirmed.

The results also show that financial literacy (FL)(β = 0.1934; t = 2.122; p<0.05) has a positive and significant impact on SMEs' performance. This means that financial skills pave the way for the SMEs' performance. This study supports Lusardi and Mitchell (2014)'s argument that FL is positively correlated with responsible financial behavior (FB) by SME owners and SME performance. Sajuyigbe et al (2017) also assert that financial skills are a tool for effective financial decisions and SMEs' performance. Disney and Gathergood (2013) also conclude that financial information is a relevant platform for SMEs' financial inclusion and performance. Hence, H_2 is confirmed

There is evidence that FI is positively associated with FL, with a beta value of 0.7565 and a t value of 11.743. This suggests that a range of financial skills is a true tool for SME FI. This study agrees with his Chepkemoni (2017) that FL is a tool for becoming familiar with financial practices such as cash budgeting, cash management, savings behavior, working capital management, inventory management, and financial accounting information. Research by Fernandes (2015) also shows that FL is directly related to FI in terms of knowledge of financial products and use of online banking applications. Similarly, Khadijah and Wan (2019) propose that FL is a driver of FI. Gallery, Newton, and Palm (2011) also argue that FI is a financial strategy that supports investment decisions. Therefore, H_3 is supported.
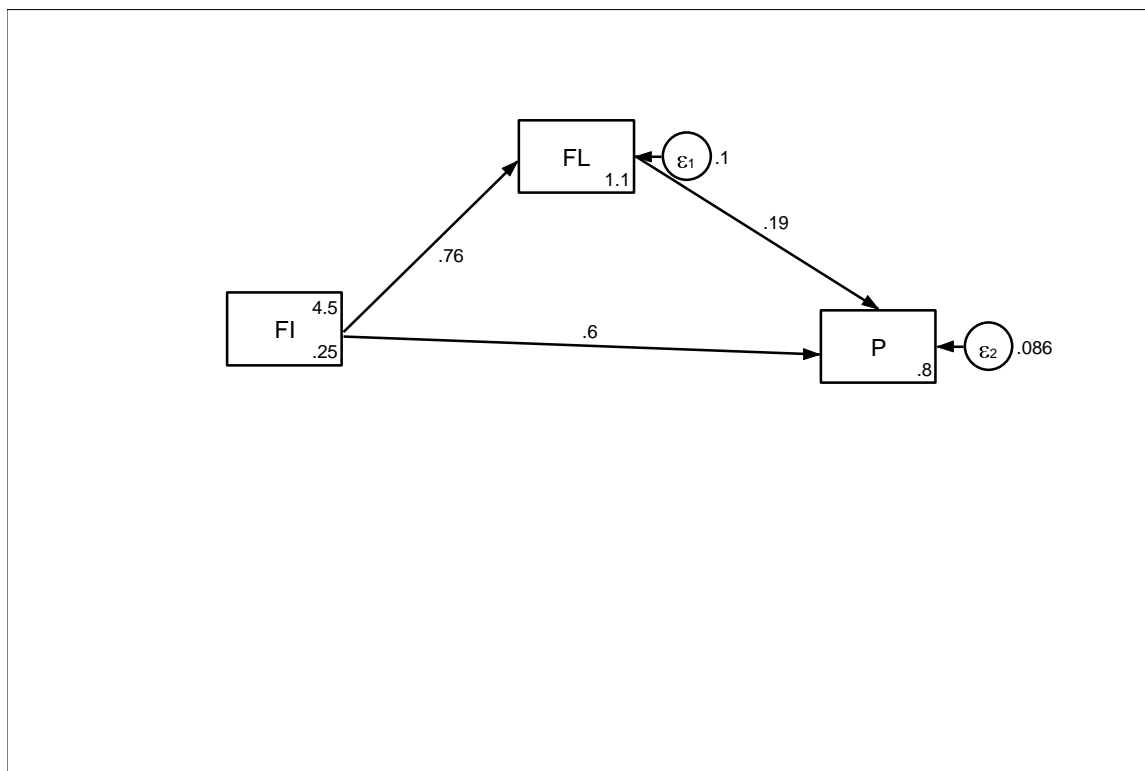

Figure 1 **Structural Equation Modelling**

Table 2: Structure Equation Modelling with mediator (Indirect Effects)

Path	β-value	t-value	P-value	95% Conf. Interval	
FL→ P	.1934	2.122	***	.0143429	.3717957
FI → P	.6032	6.673	***	.4263834	.7815374
FI → FL → P	.146	2.08	***	.0086688	.2834104

Table 3 shows the FL intermediary between FI and SMEs' performance. Using standardized coefficients, a beta value of 0.1934 and a p-value of 0.000 indicate that FL is a predictor of SMEs' performance, while a beta value of 0.6032 and a p-value of 0.000 indicate

that FI is also a predictor of SMEs' performance. Furthermore, an indirect beta value of 0.146 and a p-value of 0.000 suggest that FL is a mediator. According to the rules proposed by Baron and Kenny (2003), FL mediates partially between FI and SMEs' performance. This rule states that partial mediation occurs when the independent variable is a predictor of the dependent variable at the same time that the mediator is a predictor of the dependent variable. This result means that the higher the FL of SMEs, the higher the FI in the sector and the better the performance of SMEs.

4. CONCLUSION AND RECOMMENDATION

This study explores the mediating effect of financial knowledge on the link between financial inclusion and overall small business performance. Using a targeted sampling method, we selected SMEs that have been in operation for more than 5 years and are duly registered with SMEDAN. Meanwhile, a simple random sample was used to select 250 SME operators or managers as the survey sample size. Structural equation modeling (SEM) was used to explore information using the useful STATA model 15 resource. The results show that financial inclusion is impressively and fundamentally linked to the overall performance of SMEs. Evidence also shows that financial inclusion is directly related to financial literacy. Furthermore, the results suggest that financial literacy has a very large impact on the performance of SMEs. We also find that financial literacy partially mediates between financial inclusion and SME performance.

Finally, looking at small business regulators, are encouraged to contact accounting professionals on their boards to prepare quick releases on workshops, seminars, and economics training for small business owners. This will go a long way in providing access to funds for SME operators.

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Supply Chain Logistics Using the Internet of Things and Corporate Social Responsibility for a Sustainable Environment

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ABSTRACT

In the digitalization era, costs can be minimized and operations get fast for a sustainable environment. To compete in this modern era and manage operations, the supply chain shifted to smart technology to meet the goals of CSR for a sustainable environment. IoT has a great influence on the close-loop logistics operations in firms. This paper investigates the benefits of IoT in closed-loop logistics operations' effects on the goals of CSR for a sustainable environment and how the use of smart technology impacts the operations of CLSC to meet the goals of CSR for a sustainable environment. For data, we get the data of firms that are on close-loop logistics and firms that are using smart technology for their operations. regression for analysis in STATA. Results show that firms that are using smart technology for their operations are achieving more CSR goals for a sustainable environment. The Internet of Things will not instantly contribute to the accomplishment of CSR targets, despite the fact that it has a direct and positive influence on closed-loop supply chains (CLSC). The CSR goals are not directly relatowith the internet of things; nevertheless, the internet may be utilized as regulatory or assisting tools in order to achieve them. CLSC helps to change the sustainability measures in the environment. . Firms should shift to the closed loop supply chain to minimize the resources and better places for businesses to achieve CSR goals for a sustainable environment

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1. INTRODUCTION

Closed-loop supply chain is the process to ensure the recovery of endues product (Delpla, Kenné and Hof, no date) Throughout the evolution of sustainability, closed-loop supply chain has a fundamental of supply networks. it leads many firms to sustainability(Fathollahi-Fard, Ahmadi and Al-e-Hashem, 2020; Salehi-Amiri *et al.*, 2021) development and establishing for a sustainable network CLSC has adopted by many firms blockchain technology and internet of

things made it easy for the firms.(Hrouga, Sbihi and Chavallard, 2022) technologies like Internet of Things make data easier to gather and comprehend, especially in supply chain operations, which reduces the likelihood of supply chain issues.(Kazancoglu *et al.*, no date) Implementing new technologies can help to reduce the time .(de Vass, Shee and Miah, 2020; Prajapati, Chan, *et al.*, 2022)The Internet of Things (IoT) is a worldwide system of World wide web-connected devices that improves the Connectivity of the supply chain for better internal and external integration with both clients and suppliers. firms that are having high value to maintain that value and contribution in society for the long term in order to achieve these goals firms work on corporate social responsibility for the wellbeing of society(Liu, Yao and Chen, 2021) close-loop supply chain achieved the benefits of economy and environmental sustainability(Wang *et al.*, 2019) also the customer (Wang and Hazen, 2016) Profit maximization and social responsibility through product recycling through the closed-loop supply chain (CLSC). The manufacturer recycling the discarded goods ias utilized the reverse channel and the channel's non-profit maximizing goal through CSR practice generates a larger profit margin than the profit-maximizing objective. Recycling is an important aspect of the closed-loop supply chain, for maximum benefit, recycling must be limited. To ensure optimal channel performance (Panda, Modak and Cárdenas-Barrón, 2017). Sustainability in terms of the environment and corporate social responsibility (CSR) as social sustainability The manufacturers compete with one another on the dual-function acquisition price supplied to clients in the sustainable CLSC. To increase its market share, the shop engages in CSR in addition to the collecting process. (Hosseini-Motlagh, Ebrahimi and Zirakpourdehkordi, 2020)achieving the sustainability of the environment through the CLSC three methods can use remanufacturing, recycling and reusing of products. circular economy (CE) that is technologically enabled to improve resource efficiency. The most crucial aspect of this is tracing, tracking, and keeping information. Reduced extraction, extended product and material lifetimes, and waste prevention are all examples of CE techniques that can considerably lessen GHG emissions and harm to the environment. Reusing and recycling materials simultaneously cut costs and have a positive environmental impact. However, the circularity gap that is currently putting pressure on the environment and the global economy implies that CE is not yet progressing. (Mangers *et al.*, 2021) CLSC increase industrial system efficiency and sustainability. Coordination of information and material flows is essential for maximising the CE's enormous potential: To support techniques like predictive maintenance, refurbishing, or recycling, information regarding the amount and quality of products, as well as their material composition, needs to be collected and stored. Digital technologies allow for the "digital twin" concept, which allows for the preservation of data and materials in the cycle as well as the utilization of trash as a resource. Real-time information on an item's location, availability, and condition can be provided through digital solutions. They can also improve the traceability of materials, make it easier to acquire goods and services, and improve the efficiency and convenience of procedures Additionally, data analytics can be used to forecast product health and wear, minimize production downtime, plan maintenance, order replacement components, and optimize(Qu *et al.*, 2016) reverse logistics where end user products are taken from customer and then reuse it for again use and then attempts to manage EOL products are made through various decisions, such as recycling manufacturing and finally, disposing of some used products.(Govindan, Soleimani and Kannan, 2015a).internet of things tracking calls for a distinct chain of locations where the product is actively scanned (using a barcode, QR code, smart label, or data logger), frequently only providing historical data gathered at the time of scanning. This is insufficient in the agri-food industry, where maintaining certain conditions

(such as temperature, humidity, etc.) to stop product deterioration is necessary to ensure business continuity and lower supply chain risks. There are numerous papers that discuss "supply chain hazards" in the scientific literature, but there is still no universally accepted definition of the phrase. Adoption of IoT technology has a definite impact on increasing logistics efficiency, particularly in the agricultural sector where wastes, breaks in the cold chain, and tainted food have major negative effects on both the reputation of businesses and the health of consumers. Internet - of - things sensors in the agribusiness can gather information about the weather and the soil, allowing for the regulation of pesticide, pesticide, and water use to decrease waste, boost productivity, and ensure compliance with current health and safety laws. The ability to control delays or, even better, to prevent them results in appropriate cost savings, the safeguarding of priceless assets, and permits more efficient planning. (Capello, Toja and Trapani, 2016; 2020) An Iot technology system makes a wealth of data useful to better the efficiency of agricultural processes while also improving supply chain visibility, allowing for more assurance regarding the food's provenance, safety, and nutritional value. With a booming population, limited resources, and increased demand for social responsibility on the global market, IoT technology and data analytics can be used as an integrated tool to assist food producers.(Garrido-Hidalgo *et al.*, 2020) Industrial IoT technology will make it possible to fully and completely regulate every step of the supply chain, making it transparent to consumers and efficient in terms of wastage. (Magrini *et al.*, 2021) In order to address environmental, social, and economic issues, sustainable and green practises must be used. This strategy aims to build an organization and promote the adoption of the circular economy. The goal of a circular economy is to use an industry's resources, energy, and wastes to its benefit. In order to increase resource efficiency, the circular economy links supply and demand in supply chain businesses supply chain case scenario to satisfy industry 4.0 specifications and enabling the circular economy.(Manavalan and Jayakrishna, 2019a) internet of things in close-loop supply chain to meet the need of corporate social responsibility firms shifted to sustainable and green manufacturin

The process in which an individual or group wants to achieve their needs or wants without damaging the natural environment. Activities required in order to make progress towards development without compromising resources. To achieve success for the development and compete in the modern world required a change in process of thinking, and lifestyles.(Glavič and Lukman, 2007)

It is the widespread network of gadgets that can communicate with one another. And distribute data across a broader network, where the shared information can be used to derive value. Every device must employ embedded technology and have distinctive identities. Sensing, collecting, and transmitting data about oneself and one's surroundings to different hosts or devices.(Firouzi *et al.*, 2020)Internet of Things (IoT), one of the newest technological advancements in the ICT sector, outlined as a global network infrastructure that connects both physical and digital elements through maximising communication and data-capturing capabilities.(Côrte-Real, Ruivo and Oliveira, 2020)

It is defined as a supply chain system that combines design and deployment to maximize the useable value over the course of a product's life cycle while constantly recovering worth from a variety of returned goods.(Govindan, Soleimani and Kannan, 2015b) CLSC initiatives have the potential to both raise enterprises' profitability and product uniqueness while also enhancing manufacturing operations' sustainability impact.(Talbot, Lefebvre and Lefebvre, 2007)

It is a business model which help company to grow with their stakeholders, society and fullfill the need for the sustainability of an environmnet. Increase the value of the company through social service work.(Côrte-Real, Ruivo and Oliveira, 2020)

1.1.OBJECTIVE

The purpose of the paper is to find that how IoT change and impact the CSR to maintain the sustainability of environment.

1.2.RESEARCH QUESTION

How IoT in CLSC effects the goals of CSR for environmental sustainability?

2. LITERATURE REVIEW

Companies have recently increased their efforts to produce goods and provide services in a sustainable manner, moving from pollution avoidance to integrated strategies that consider product lifecycles and broader consequences. Through a combination of technology and non-technological innovations that have the potential to produce significant environmental gains, eco-innovation aids in enabling this evolution. As the Internet has grown, there are now an exponentially greater number of options since many components can be connected to one another, automating procedures, interacting with one another, etc.; this phenomenon is known as the "Internet of Things (van der Laan, 2019)A higher degree of productivity, process standardization, an increase in the number of potential products or services, the development of wider communication networks, and many other advantages have been made possible by technology. Together with social developments, this has had a significant impact on the global economy over the ages, fundamentally changing how businesses conduct their operations(Salehi-Amiri *et al.*, 2021). The main factors influencing a company's productivity up until the industrial revolution were labour and capital. Since then, there has been a paradigm shift that now considers factors other than labour and capital to determine a firm's degree of productivity, as well as its business model and future prospects. (Tombido, Louw and van Eeden, 2020a)

(Talbot, Lefebvre and Lefebvre, 2007; 2020b) perform research on empirical data from a sample of 205 environmentally conscious SMEs working in the fabrication of metal goods and the production of electrical and electronic goods. The closed-loop supply is categorised using an organised research paradigm. tp show that the degree and location along the value chain of a product to which enterprises are able to execute CLSC environmental measures vary(Chaopaisarn, … and 2019, no date). The advantages of these efforts also appear to vary depending on the business model used. compares the Bullwhip Effect between serial and divergent supply chain networks with various structural variations using systems dynamics models. One trustworthy collector providing used goods appears to be more advantageous for a closed-loop supply chain than multiple collectors whose returns' quantities are unpredictable. It raises the level of environmental sustainability. (Tiwari and Khan, 2019)Investigating a measurement and accounting strategy based on action research in three seafood production enterprises in India. Through action research, eight sustainability indicators from the triple bottom-line model were taken into account while monitoring sampled tasks in five different locations. ANOVA, regression analysis, and descriptive statistics were used and finding reveals that sustainability has a close connection with the close loop supply chain(De Giovanni, 2022).

(Kim and Park, 2020) research on different hypothetical companies to find the results that is CSR effecting the company growth and sustainability of environment with the variable of

consumer engagement. He used MANOVA analysis for his research study he found that A company's efforts to engage in corporate social responsibility (CSR) reduce the likelihood that disgruntled customers may take retaliatory action once a failed product is released and negatively effect on the sustainability. (Ben-Daya, Hassini and Bahroun, 2017) did an extensive literature review to find that how internet of things impact the processes of supply chain management in the industry. He found that Iot has a clar and consice impact on the process of close loop supply chain that enhance the sustainability of the environment. (Rejeb *et al.*, 2020) examines the literature on IoT's impact on SCM and logistics processes. To objectively and analytically uncover the growth in knowledge regarding IoT research as it relates to SCM and logistics, a comprehensive review and bibliometric analysis were performed. 807 papers from journals over 20 years were chosen. After then, the papers were dissected for their insights. CLSC's manufacturer engages in both new product development and remanufacturing by sourcing components from both new and recycled sources. However, varying rates of product recovery based on application The volume, quality, and timing of the returned product is extremely unknown, therefore choices like reuse, refurbishing, remanufacturing, recycling, and disposal are always subject to change. Because of the unknowns in the reverse flow, forward-flow planning is more challenging(De Giovanni, 2022). Due to the lack of established product life cycle data, it is important to conduct inspections and tests on returned items and their components. All the work done to disassemble and test a part only to find out it doesn't work is for naught(Prajapati, Pratap, *et al.*, 2022). Several points in the supply chain, including reverse logistics, have been proposed as potential applications for the Internet of Things. This network allows for the tracking and monitoring of anything. One of the most important parts of this kind of setup is radio-frequency identification (RFID) technology. (Manavalan and Jayakrishna, 2019b) works on a case study in an organisation involved in the supply chain was analysed to determine how to fulfil the objectives of industry 4.0 and enable circular economy. An investigation into the supply chain sector has been carried out, with the 6Rs serving as the primary point of interest. The goal of a circular economy is to reclaim value from an industry's resources, including its materials, energy, and waste. The supply and demand of industries along the supply chain are brought together by the circular economy, which results in increased resource efficiency.(Garrido-Hidalgo *et al.*, 2020)) present a framework known as the Circular Supply Chain (CSC) should be proposed for End-of-Life (EoL) management with the intention of meeting the information infrastructure needs of a particular use case involving the recovery of Electric Vehicle Battery (EVB) packs. provide a qualitative analysis of the information needs imposed by the CSC as well as an assessment of the Internet of Things' potential to fulfil those requirements. As a consequence of this, the implementation of a heterogeneous IoT network is advocated in order to achieve a digital CSC information infrastructure.(*Introduction to Management of Reverse Logistics and Closed Loop Supply Chain ... - Donald F. Blumberg - Google Books*, no date) Create a conceptual framework for sustainable manufacturing based on a methodical and in-depth analysis of the existing literature on artificial intelligence-driven big data analytics, real-time sensor networks, and product decision-making information systems. Things Connected to the Internet.

Hypothesis.
H1. Internet of things in CLSC positively impact the CSR.

H2. Internet of things positively impact the Environmental Sustainability.

H3. CLS has influenced by IoT to reach its goals for sustainability.

3. METHODOLOGY

To address the research questions, we used a survey and structural equation modelling as a form of multivariate data analysis that would support concurrent examination of multiple relationships among both manifest and latent variables.

Conceptual Frame Work
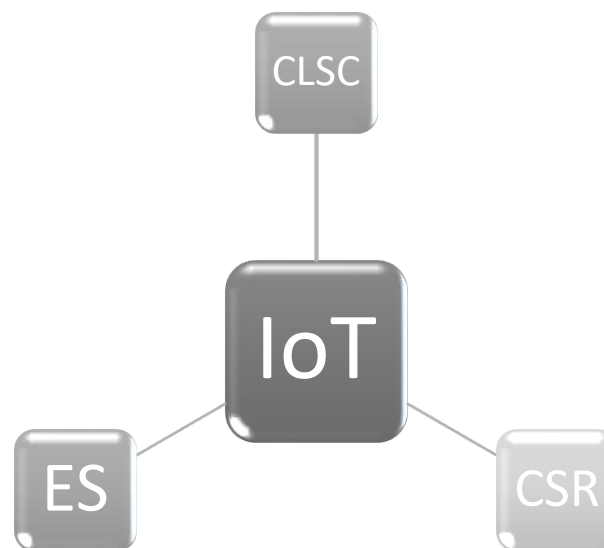
First, we create the conceptual framework that is depicted up there. The variables that we use in the conceptual framework are IoT (internet of things), CLSC (close loop supply chain), ES (environmental sustainability), and CSR (corporate social responsibility) (corporate social responsibility). The Internet of things is the primary variable that we are working with. In this study, we will examine the effects of the internet of things on a variety of different factors, including the effects of the internet of things on the close loop supply chain, specifically how the internet of things (smart technology) affects the operation of the close loop supply chain, the effects of the internet of things on corporate social responsibility, specifically how the internet of things (smart technology) can either increase or decrease the level of csr in business environments, and the effects of the internet of things on environmental sustainability.

3.1.Data Collection

Empirical research is based on data collection. The sample for this study is based on random sampling through email with the logistics firms that are using smart technologies with the system. . A Likert-type scale (five-points) was used to collect the data, where 0 means "strongly agree"; 1 means "agree"; 2 means "neutral"; 3 means "disagree" and 4 means "strongly disagree". Initially, the link for the online questionnaire was emailed to 150 companies. we received 120 valid and completed questionnaires. Questionnaire does not contain any demographic questions.

4. RESULTS

4.1.Statistical Analysis.

Table 1 Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Internet Of Things	120	1.333	1.374	0	4
Sustainability	120	1.425	1.275	0	4
CLSC	120	1.3	1.294	0	4
CSR	120	1.383	1.182	0	4
Sustainability& CSR	120	1.4	1.331	0	4
CLSC & IoT	120	1.325	1.189	0	4

Table represents the descriptive statis of the data. It shown that we have 120 observations that we take from different logistic companies that use the smart technology for the procedures. We have five measures of likert scale that represent the answers and data of the questionnaires. We did mean and standard daviations for the validity of the data.

Table 2 Matrix of correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)
(1) internetofthings	1.000					
(2) sustainability	0.672	1.000				
(3) CLSC	0.813	0.590	1.000			
(4) CSR	0.609	0.700	0.583	1.000		
(5)Sustainability &CSR	0.777	0.592	0.769	0.665	1.000	
(6) CLSC &IoT	0.689	0.745	0.690	0.741	0.629	1.000

Correlation between variables internet of things is highly correlate with the sustainability that is 0.672 and correlation of variables sustainability with other variables are not highly corelate except corporate social responsibility that means the relationship between sustainability and close loop supply chain is highly positive. Corporate social responsibility is not highly correlated with other variables because the values between variables indicates the negative correlation between variables sustainability and Close lop suppy chain is highly correlate with the internet of things and that is 0.777 and its highly significant and other than that corporate social responsibility and close loop supply chain are highly correlate with each other.the overall results of the correlation matrix are significant and positive.

Table 3 Factor Analysis

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	4.122	3.816	0.986	0.986
Factor2	0.306	0.277	0.073	1.060
Factor3	0.029	0.060	0.007	1.066
Factor4	-0.031	0.083	-0.007	1.059
Factor5	-0.114	0.018	-0.027	1.032
Factor6	-0.132	.	-0.032	1.000

LR test: independent vs. saturated: chi2(15) = 573.33 Prob>chi2 = 0.0000

In addition, we performed a factor analysis on our model. It is shown in the table that the factor pone eigenvalue is 4.122, which is greater than 1, which indicates that we are able to keep this value for our model. Additionally, the value for factor 2 is 0.306, which is less than one, and the factors 3, 4, 5, and 6 each have eigen values that are less than 1. When we compare the eigen values of the second columns, we can see that factors two through six do not differ greatly from one another. However, the difference between factor one and factor two must be greater than three in order for it to be considered significant for our model. In the proportion column, it is very easy to observe that factor one accounts for 98 percent of the overall variation. And the first factor accounts for 98% of the overall variation shown in the table.

Table 4 Factor loadings (pattern matrix) and unique variances

Variable	Factor1	Factor2	Factor3	Uniqueness
Internet of things	0.868	-0.205	-0.055	0.201
sustainability	0.791	0.238	-0.048	0.316
CLSC	0.843	-0.257	-0.037	0.223
CSR	0.792	0.244	0.091	0.304
Sustainability &CSR	0.833	-0.196	0.106	0.257
CLSC &IoT	0.843	0.209	-0.052	0.243

With the Internet of Things having an impact of almost 86% on Factor 1, and other variables having a positive effect on Factor 1, such as Sustainability having a value of (0.791), which is equal to 79% that is highly positive, CLSC (close loop supply chain) having a value that is (0.843), which is equal to 84% that is significantly positive on Factor 1, and CSR (corporate social responsibility), which is also significantly positive, then we have a merge of two variables assume as one. That have a very favorable impact on factor 1 and its implications. Within the first factor, every value is in the positive range. While in Factor 2, the variables Internet of

Things, CLSC, and Sustainability and CSR have values that are negative, and while there is some positive value for Sustainability, CSR, and CLSC& IoT, it is very low. During the process of moving toward Factor 3, the values of the variables concerning the Internet of Things, sustainability, and CLSC as well as CLSC and IoT have been steadily decreasing in comparison to Factors 1 and 2. Therefore, when taken collectively, all three components describe the variety that exists among the data of the variables. Uniqueness in the variables in the model is not much unique. In our model, the uniqueness values shows that our variables are fit for the model.

Table 5 Multivariate Regression

Internet of things	Coef.	St. Err.	T	P>t	[95%Conf.	Interval]
sustainability	0.227	0.079	2.850	0.005	0.069	0.384
CLSC	0.448	0.085	5.240	0.000	0.279	0.617
CSR	-0.077	0.089	-0.870	0.388	-0.254	0.100
Sustainability & CSR	0.312	0.083	3.780	0.000	0.148	0.476
CLSC & IoT	0.093	0.099	0.950	0.345	-0.102	0.289

R-square= 0.8725, f= 157.3857, p= 0.0000

Our final analysis is multivariate regression analysis. In which we see the effect of each variables with the significance of p values, t values and on the basis of the coefficient in the first column the coefficient that is +1, -1and between 0. That represents that the size and direction of the variables with predictors and responsive variables. In the above table it is show that the variables of sustainability that is almost 22% of the total size of the predictors variable with same goes to other variables that is CLSC having coefficient value of almost 44% total direction to the predictor variable that is our dependent variable Internet of Things. Then we have CSR having coefficient that falls in negative. Then we have combination of two variables that is sustainability and CSR and CLSC and internet of things. In our model there very less standard error that the high terror that we observe is 0.089 that is very low. So, moving toward next column that is t table but our main focus is o P values that show the significance of our model and will indicates the results. P values that is highly significant when it is less than 0.005. in the model that the p value of sustainability is significance at 95% confidence interval and have a positive impact with internet of things. The two more variables that are significant that are CLSC and sustainability and CSR having positive relation with internet of things.

5. FINDINGS

According to the findings, there is a significant and positive impact that the internet of things has on the environmental sustainability. With the use of the internet of things and smart technologies, a closed loop supply chain may be able to accomplish significant goals related to corporate social responsibility. However, the CSR goals are not directly concerned with the internet of things; however, the internet of things may be used as regulating or aiding tools to meet the CSR goals. The close loop supply chain incorporates the importance of accomplishing sustainable goals with the assistance of internet of things (smart technology), which ultimately leads to the achievement of corporate social goals. As a means of putting our hypothesis to the test, we have determined that our initial hypothesis is. The Internet of Things has a favourable impact on the CSR at CLSC. It is now generally agreed that the internet of things will have a direct and beneficial impact on closed-loop supply chains but will not immediately contribute to CSR target achievement. Therefore, a portion of our theory is supported. Then, our second hypothesis, which states that the Internet of Things will positively impact the Environmental Sustainability, was totally accepted in the regression model findings, which demonstrates that the Internet of Things has a good relationship between the environment and technology. According to the findings of our investigation, our third and final hypothesis, which states that CLSC has been affected by IoT to attain its goals for sustainability, was also shown to be correct. After the hypotheses have been tested, we move on to the research questions that we formulated before beginning the study, such as how the internet of things would affect the CSR goals related to closed-loop supply chains and environmental sustainability. After research results demonstrate that internet of things in closed loop supply chains has a direct link with sustainability, but internet of things does not directly affect CSR, we can say that internet of things has a connection with sustainability. The Internet of Things has a direct impact on the environment within CLSC, but it does not have any impact on CSR.

5.1. DISCUSSIONS

(Nahr, Nozari and Sadeghi, 2021) finds that internet of things With the Internet of Things playing such a pivotal part in ensuring the long-term viability of industrial systems, their findings provides a theoretical contribution in the literature. Their results that says that internet of things has a positive impact on the close loop supply chain as our results indicate the same results. (de Giovanni, 2022)findings shows that Although reverse omnichannel solutions seldom improve performance, the blockchain enables a more efficient CLSC system. Evaluating the merits of switching from a passive to an active return strategy is essential. An active return strategy can improve the CLSC network by creating valuable incentives for collectors and maximizing the advantages of the blockchain. Contrarily, consumer incentives may have negative repercussions on distributed ledger technology. While there are some business performance boosts that may be achieved through a variety of incentive combinations, the CLSC system's operational and service capabilities can only be strengthened through incentives provided to collectors. (Singh and Dehraj, 2022) findings reveal that close loop of the supply chain are crucial to the management of the whole process, from the extraction of raw materials to the final delivery to the customer. Transparency issues, order delays, and duplicate data entry are just a few of the difficulties plaguing this type of logistic management. This dispersed technology has the potential to reduce these.(Prajapati, Jauhar, *et al.*, 2022) integration of physical and digital supply networks. The expenses of sourcing inputs, transporting them subject to a carbon emission tax, warehousing,

processing, and producing outputs, refurbishing, recycling, and virtualizing. Among these include maintaining infrastructure for blockchain and Internet of Things applications directly impact the sustainability of the environment. (Zarbakhshnia *et al.*, 2019)findings are likely to be with our findings that shows that changes in the process of CLSC helps to maintain the sustainability of the environment.(Prajapati) finds that building a resilient infrastructure for the e-commerce sector's closed-loop supply chain with various tiers of electronic items is an important step toward achieving the circular economy. In a reversal of the normal process flow, items that have been returned by customers are collected from their locations and brought to an inspection facility for review. So findings that the literature shows and our findings are head to contribute to the literature.

6. CONCLUSION

It is concluded that The Internet of Things will not instantly contribute to the accomplishment of CSR targets, despite the fact that it has a direct and positive influence on closed-loop supply chains (CLSC). The CSR goals are not directly related with the internet of things; nevertheless, the internet may be utilized as regulatory or assisting tools in order to achieve them. CLSC helps to change the sustainability measures in the environment. The closed loop supply chain, also known as CLSC, is an essential component in the management of the whole process, beginning with the procurement of raw materials and ending with the delivery of the product to the end user. The operational and service capabilities of the CLSC system can only be strengthened through the provision of incentives to collectors. While there are some business performance boosts that may be achieved through a variety of incentive combinations.

6.1.LIMITATIONS AND RECOMMENDATION

The research has some obvious drawbacks. This research is not without its limits, which are outlined in the following paragraphs to pique readers' interests in the subject matter and encourage more study in the same field. The investigation of the internet of things as the one and only digital technology with the potential to enhance both the CLSC and sustainability is the primary subject of this research. Other technologies that are part of Industry 4.0 may very well have an impact that is distinct from the findings (Rosa *et al.*, 2019). The application of internet of things technology with the goal of improving both the forward and reverse flows of the chain has the potential to have a significant and beneficial influence on the efficiency of the CLSC. In addition, the implementation of Internet of Things (IoT) technologies is absolutely necessary in order to gather data from the ecosystem as a whole and record it on the blockchain. It is important to note that we have shaped the research based on the assumption that the CLSC impacts sustainability in accordance to CSR. This presumption is inextricably tied to the use of blockchain technology, which stores information in the CLSC and enables one to track and enrich it through reverse logistics. The CLSC and sustainability may be assumed to have an inverse connection in any future advances in the same region, which may be a topic of discussion. while evaluating their relationship using a variety of digital tools, or when placing it in a context that is not the same as the one they normally do. Furthermore, future research should also investigate some barriers that are linked to the adoption of smart technology as internet of things. These barriers include structural constraints that are attributable to system rigidity, as well as cultural obstacles that are linked to well established modus operandi. This research should be carried out in the future (Son *et al.*, 2021). It would be interesting to gather a big

sample of data and analyse the conclusions of this research using dynamic analysis. This could be done. In conclusion, additional information can be extrapolated with the help of other methodologies, such as the use of structural equation modelling (SEM) to determine the set of CLSC actions that have the greatest influence on business performance or regression models that drive companies to switch from one type of incentive to another.

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Measuring the Impact of Foreign Direct Investment on Economic Growth of Pakistan

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ARTICLE INFO			ABSTRACT
			Over the last three decades, FDI has strengthened its position as a
			set of advantages at the global level. Economic growth is a common desired outcome for the nations that get its advantages.
			Such outcomes do not manifest in the same form in all recipient
			economies and hence allow the opportunity to examine this relationship at nation level. This research sets out to do just that
			by using empirical methods to look at how FDI has affected Pakistan's economy. Time series data from the years 1971 to 2020
			were utilised for this purpose. For data analysis, the bound testing technique to co integration inside the context of the Autoregressive
			Distributed Lag (ARDL) was applied. The outcomes of the research confirmed the concept of favourable influence of FDI on economic growth of Pakistan. Also supported by the data was the idea that FDI is more productive than domestic investment.

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1. INTRODUCTION

FDI, or 'foreign direct investment,' refers to money invested by a foreign company in a domestic company. According to the numerous trade theories, a nation will invest in another country if the firms in the donor country have distinct competitive advantages over those in the host country. According to the internalisation hypothesis, economies of scale motivate nations to engage in foreign direct investment (FDI). Foreign direct investment is a key growth indicator. Though the factors that influence the impact of foreign direct

investment (FDI) on a country's development are context-specific, FDI is essential to economic growth. Different economies benefited in various ways from foreign direct investment, and FDI's effect on economic development is complex.

Foreign direct investment's (FDI) ability to positively impact an economy is contingent on a number of factors unique to that economy; for instance, Carkovic et al. (2002) examined the connection between growth and FDI from 1960 to 1995 and discovered that it varies with the trade openness, educational level, and financial and economic development of the country receiving the investment.

To a similar extent, Ek (2007) demonstrated that FDI had no appreciable effect on China's economic development from 1994 to 2003.

The research of Saqib, et al. (2013) over the years 1981-2010 found that foreign direct investment (FDI) had a negative impact on the Pakistani economy. With the support of new technologies and monetary infusions, Johnson (2006) found that FDI boosts economic development in the host nation.

While research suggests that foreign direct investment (FDI) boosts economic growth in emerging nations, it does not do so for less developed nations. Underdeveloped nations do not benefit from foreign direct investment (FDI) for a number of reasons. These include economic and political instability, security concerns, and an inadequate law and order environment. According to research by Falki, N. (2009), foreign direct investment (FDI) has not helped boost economic development in Pakistan. Khan and Khan (2011) found the same thing to be true for Pakistan between 1981 and 2008, revealing that FDI is a long-term growth accelerator of GDP. It was also shown by Melnyk et al. (2014) that the pace of economic development in post-communist transition countries is positively connected with the level of FDI flowing into the area.

According to research by Juma, M. (2012), foreign direct investment (FDI) stimulated economic expansion in Sub-Saharan Africa from 1980 to 2009. During the years 1997-2006, the economy of Indonesia grew in tandem with the influx of foreign direct investment, as reported by Khaliq, A. (2007). The two-way correlation between foreign direct investment (FDI) and domestic investment (DI) and GDP expansion was uncovered by Ghazali, A. (2010). A unidirectional link between FDI and GDP growth was also discovered.

According to a study conducted by Iqbal et al. (2010), foreign direct investment (FDI) contributed to Pakistan's economic development from 1998 to 2009. Adewumi, S. (2007) found that foreign direct investment (FDI) contributed favourably to economic development from 1970 to 2003, but that this contribution was small for most emerging nations. Zekarias, S. (2015) used the variables FDI, growth rate per capita GDP, domestic private investment, human capital, and labour force to analyse the impact of FDI on economic development in eastern Africa from 1980 to 2013. The necessity to attract more FDI for growth was highlighted, as was his examination of FDI's role as a growth driver.

Many studies on the topic of foreign direct investment (FDI) and economic development have produced contradictory findings. Co-integration testing revealed a negative correlation between FDI and GDP in Ghana between 1980 and 2010, which was studied by Antwi et al. (2013). From 1970 to 2001, Atique et al. (2004) found that FDI had a significant impact on Pakistan's economic development when the trade system favoured export promotion over import substitution.

Researching the aforementioned works led us to the conclusion that FDI's effect is context-dependent, with favourable effects on economic development in advanced nations (Melnyk et al., 2014; Juma, 2012; Khaliq, 2007), and negative effects on economies with less established infrastructure (Saqib et al., 2013). Due to discrepancies in findings across previous research (Falki, 2009; Saqib et al., 2013; Khan and Khan, 2011; Ali, 2015; Ali and Rehman, 2015), we restrict our analysis to the Pakistani area.

Since no new studies have been undertaken on the topic and the earlier studies had varying results, we feel it necessary to conduct this investigation in order to ascertain the most up-to-date findings. The study's goals are twofold: (a) to determine whether or if economic growth and FDI have a long-term connection, and (b) to identify the mechanisms by which these two variables are causally related. Section 2 of this paper focuses on the research methods used. In Section 3 we provide the data, and in Section 4 we present the findings. Section 5 is where we draw to a conclusion.

2. LITERATURE REVIEW

Foreign direct investment (FDI) has the potential to significantly contribute to the economic growth of the host nation by creating jobs, closing the savings-investment gap, and increasing tax income. Foreign direct investment (FDI) is generally thought to benefit the economic growth and social welfare of the nation that welcomes it, according to the Neoclassical Economic Theory of FDI. Foreign direct investment (FDI) affects both capital creation and tax income, relieving strain on the balance of payment (Seid, 2002). It aids in bolstering competitiveness, which in turn leads to more effective resource allocation and management. By connecting the host country's market to the international market, it expands the market. Foreign direct investment facilitates knowledge and information sharing between developed and developing nations, particularly in the areas of technology, management, and marketing (Kojima; 1978). According to neoclassical economic theory, foreign direct investment (FDI) can boost host countries' economies in a number of ways. It can boost capital formation, boost employment, boost manufacturing, introduce new management techniques and well-known brands, and give workers access to global supply chains. Foreign direct investment (FDI) may have unintended consequences, including the dissemination of new technologies and other unintended consequences (Markusen & Venables; 1999). The neoclassical type growth theories of Harrod-Domar and Solow, as well as the endogenous growth theories, all contribute to our understanding of the FDI-growth nexus. The functional economic connection is the Harrod-Domar model, where GDP growth is directly proportional to the national net saving rate and inversely proportional to the capital-output ratio (Cypher and Dietz, 2004). A successful economy, according to Harrod (1939) and Domar (1946) (as

stated in Sahoo, 2006), must save and invest a certain percentage of its GDP. A quicker growth rate is achieved by increasing savings and investment within an economy, but only under the condition that the capital-output ratio falls. In the short run, the Solow-type growth model shows that there is a decreasing return on both capital and labour, whereas in the long run, there is a constant return to scale from varying both inputs by the same proportion. Though the precise location of the production function may be modified by technological development as an external variable, the structure of the function remains unchanged (Cypher & Dietz, 2004).

Foreign direct investment (FDI) may not affect the long-run growth rate under the typical neoclassical Solow-type model, which is characterised by the declining return to physical capital and the treatment of technological progress as an exogenous variable. It was anticipated in the Solow-type neoclassical model that technological development would proceed at the same pace in all economies, regardless of their available resources or their government's actions. However, in the endogenous growth models, technology is seen as an endogenous variable, meaning that it is subject to the actions and policies of the economy in question. Organizational and institutional framework, as well as the pace at which physical, human, and research capital are being created, are all crucial factors. The ability of a country's economy to benefit from, adapt to, and contribute to the global body of knowledge is influenced by these institutional frameworks. Human capital has a beneficial effect on the rate of return on physical capital, as stated by Wang (1990). Foreign direct investment (FDI) also helps speed up technical innovation, which boosts productivity and the economy. Knowledge spillover through MNCs makes innovation lucrative in a low wage economy, as shown by Walz (1997), who investigated FDI within the context of the endogenous growth model. As long as less developed nations were permitted to copy the technology, FDI boosted R&D and economic growth. Using a neoclassical and exogenous growth model, Ruffin (1993) emphasised the significance of foreign investment in the Asia-Pacific area and its associated flows. Wages in capital-importing nations rose as a result of foreign investment. Because of the resulting wealth creation, subsequent generations benefitted from the salary increases as well.

In any case, it was a one-time adjustment. According to the endogenous growth hypothesis, FDI has the potential to accelerate economic development by spreading novel ideas and reducing the price of innovation. Foreign direct investors were promised financial returns on their innovative ideas, while their host nations anticipated economic advantages as a result of the influx of FDI. naturally, the rippling effects may not always be there. The strategy of protecting domestic markets discounted the potential for even greater financial gain through the exchange of ideas, which may even outweigh the trade-related benefits seen more often. That theory shed light on why certain Asian and Pacific nations are growing so quickly.

Human resources and know-how are now included in the concept of capital according to contemporary growth theories like those proposed by Lucas (1988) and Rebelo (1991). It was not until Romer (1990) and Grossman and Helpman (1991) that researchers and developers' accumulated know-how capital was included alongside other factors in

explaining economic expansion. The study of foreign direct investment (FDI), which is often seen as a bundle of money, knowledge, and skills, was based on the importance of intellectual capital. The idea of dependence argues that developing nations' long-term economic progress was hindered by foreign investment from advanced ones. By taking advantage of their cheap labour and other resources, first-world countries have kept many countries in the developing world mired in persistent poverty (Khan, 2007). A lot of economies, including those in East Asia and Latin America, started using this approach in the 1970s. The nations that embraced the dependence paradigm avoided international finance. This hypothesis, although influential in the 1960s and 1970s, was ultimately unable to shape federal policy. Most nations nowadays are competing with one another to be the best at drawing foreign direct investment (FDI) for their national economies. Capital inside the country has been the main topic of debate. It's the thing that keeps the economy growing steadily over time. Domestic capital has been proven to positively affect economic development by several researchers, including Atique (2004), Ahmad and Azhar (2004), Iqbal (1998), Makki and Sumwaru (2004), and Sahoo (2006). There is a distinction between domestic and international capital since it is thought that foreign money is used with more modern technology and management than domestic capital. These findings were supported by researchers in China such as Zhang (2001) and Baharumshah & Thanoon (2006), and in South Asia by Sahoo (2006). The workforce is sometimes described as "the industries' life blood." The expansion of the work force was one of the variables that Sahoo (2006) utilised to explain the expansion of the economy. When studying the impact of FDI on economic development in Pakistan, Khan (2007) also utilised the log of the total work force. Since exports are often believed to be a key factor in economic expansion, including them in the growth function may prove useful. Foreign direct investment (FDI) and export-led development initiatives were both supported by Sahoo (2006). In the wake of Balasubramanyam, Salisu, and Sapsford, exports have been included as a new input into the production function (1999). Shabbir and Mahmood also utilised the ratio of goods and services exports to GDP (1992). It is expected that a rise in exports would enhance demand for products made in the United States. In addition, exports reduce pressure on the balance of payments.

3. DATA AND METHODOLOGY

Pakistan has relied heavily on FDI (foreign direct investment) for its financial needs for a long time. More so than portfolio investment, it plays a crucial role in shaping Pakistan's economic growth (Ghazali, 2010). Since Pakistan's liberalisation, FDI (or, more accurately, inflows of capital from outside) have increased dramatically (Khan & Khan, 2011). Although the primary sector was vital to Pakistan's GDP, it was often used by successive administrations for little more than to prop up the secondary sector. There was a positive impact on both sectors from FDI because of the link between them. Foreign direct investment (FDI) dropped significantly, putting a stop to Pakistan's economic growth. Several variables contributed significantly to this outcome (Khan & Khan, 2011). This study breaks down Pakistan's economy into its primary, secondary, and tertiary components. Each market subset is comprised of a different set of economic communities. Paper and pulp, rubber and rubber products, leather and leather goods, and the food, sugar, beverages, and tobacco sectors are

all part of the primary sector. The chemical, pharmaceutical, fertiliser, petrochemical, petroleum-refining, cement, basic metal, metal product, non-electrical machinery, electrical machinery, electronics, transportation equipment, power generation, construction, mining, quarrying, and oil and gas exploration industries are all part of the secondary sector. The tertiary sector includes the financial industry, tourism, transportation, wholesale and retail trade, storage and communication, public and private service provision, and government. The period between 1997 and 2013 has been selected as the time period for the sample. State Bank of Pakistan (SBP), Economic Survey of Pakistan (2012-2013), Pakistan Bureau of Statistics (PBS), World Governance Indicators (WGI), and United Nations Development Programme (UNDP) all contributed data (UNDP).

One metric used to approximate Pakistan's economic growth was the rate of change in its per capita gross national product (GNPPC) t. This proxy was chosen in light of the fact that Pakistan is a developing country and in accordance with the recommendation made by Lekhi (2008) that developing nations use per capita GNP as a proxy for measuring economic progress. Amount of incoming FDI expressed as a fraction of GDP was the variable of interest (FDI)t. Domestic investment stock change as a percentage of gross domestic product was denoted by (CHK)t. To determine the shift, the difference in domestic investment (CHKt - CHKt-1) was subtracted from the real GDPt. The (X)t was the proportion of GDP attributable to exports of goods and services. The increase in Pakistan's working population was denoted by the (LBGR)t. State Bank of Pakistan data were used for both the dependent (GNPPC) and independent (FDI) and (CHK) variables (2005,2010). The World Bank provided data on the value of exports of goods and services as a share of GDP, denoted by (X)t (2007). Data from the Government of Pakistan was used to determine the Labor Force Growth Rate (LBGRt) (1996, 2006).

4. RESULTS

Equation (1) was developed to analyses the effect of FDI on Pakistan's economic growth. Its ARDL formulation was equation (2). (2). The Augmented Dickey-Fuller test for unit root was used to verify the integration order of all variables in these equations before continuing. The tabulated findings are presented below.

Table 1: Results of Unit Root Test (FDI Effect on economic development)

Variables	Intercept/Trend	Level	First Difference	Decision
GNPPC	1	4.0455**	--	I(0)
FDI	1	-0.8903	-3.9071*	I(1)
CHK	1	-3.0609*	--	I(0)
X	1	-1.5987	-3.9640*	I(1)
LBGR	1	-3.9825*	--	I(0)

*Significant at the 1 % level ** Significant at the 5 % level *** Significant at the 10 % level

Bound testing was a suitable strategy inside the ARDL framework since all variables had a combination of me, (0) and me (1). The following table displays the estimated values for Equation (2), the ARDL version of Equation (1).

Table 2: Effect of FDI on economic development

Dependent Variable: DLOG(GNPPC)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOG(GNPPC(-1))	-0.302432	0.152106	-1.988293	0.0594
DLOG(FDI)	0.366936	0.163242	2.247806	0.0349
DLOG(CHK)	0.159550	0.150129	1.062750	0.2994
DLOG(X)	0.107771	0.754061	0.142920	0.8877
DLOG(X(-2))	1.716843	0.609786	2.815483	0.0101
DLOG(LBGR)	0.011703	0.065454	0.178795	0.8597
DLOG(LBGR(-1))	-0.115593	0.073260	-1.577852	0.1289
LOG(GNPPC(-1))	-0.209288	0.144141	-1.451968	0.1606
LOG(FDI(-1))	0.304047	0.152600	1.992445	0.0589
LOG(CHK(-1))	0.021543	0.187043	0.115176	0.9094
LOG(X(-1))	0.014585	0.589783	0.024730	0.9805
LOG(LBGR(-1))	0.206297	0.147479	1.398825	0.1758
C	1.508979	1.601748	0.942083	0.3564
R-squared	0.630713			
Adjusted R-squared	0.429283			
Durbin-Watson stat	2.107663			
F-statistic	3.131184			
Prob(F-statistic)	0.009825			

The F-statistic of 3.13 that was computed is within the range of validity established by Narayan, which extends from 2.67 at the low end to 3.59 at the high end for a significance level of 10%. (2004). This indicates that the no cointegration theory cannot be ruled out as a viable alternative. The above estimated model's residual was confirmed to be stationary when tested for a unit root. It indicates that there was some degree of integration between the variables. Now, the long-term association was approximated by using equation (3), with the least-important variables removed for the sake of parsimony. Narayan's proposed upper limit critical value is 5.97 at the 1% level, however the long-run F-statistic value was 78.67. (2004). As a result, we may infer the existence of a correlation over the long term. Finally, an approximation of equation (4) describing the short-term dynamics was produced. Error correction term (ECM)t-1 was the lagging value of the residual from the long-run relationship equation (3). Results are shown in the table below:

Table 3: Long and short-run relationships

Variables	Long-run Coefficient	Variables	Short-run Coefficient
LOG(GNPPC(-1))	0.582737*	DLOG(GNPPC(-2))	-0.201733
LOG(FDI)	0.425387**	DLOG(FDI)	0.185611
LOG(CHK)	0.265089***	DLOG(CHK)	0.163215
LOG(X)	0.502859	DLOG(X(-2))	1.233431**
C	1.699416	ECM(-1)	-0.479709*

* Significant at the 1 % level ** Significant at the 5 % level *** Significant at the 10 % level

Based on these numbers, it seems that FDI has a favourable effect on Pakistan's economy. Both the FDI and CHK long-run coefficients are positive and statistically significant at the 5% and 10% levels of significance, whereas the short-run coefficients are positive but not statistically significant. FDI results are consistent with the conclusions of

Shabbir Mahmood (1992), Reisen and Soto (2001), and Zhang (2005). (2001). The findings about domestic investment agree with those of Iqbal & Zahid (1998) and imply that the role of domestic capital as a growth input component has remained stable. In the long term, the coefficient of (X) had a positive but negligible effect. The potential boost to economic growth may have been neutralised by parallel imports. Additionally, developing nations' exports like Pakistan's have been reluctant to expand despite the rising tide of globalisation. When comparing the effects of FDI and domestic investment, the coefficients associated with FDI are larger. This suggests that foreign direct investment (FDI) has had a greater effect on economic growth than has local investment. These conclusions corroborate those of Baharumshah Thanoon, for Iran, and Zhang (2001) for China (2006). Greater productivity in both physical and human capital might be one way in which FDI aids economic growth. The results support the idea that FDI is an important factor in national economies' progress, and they corroborate evidence that FDI has played a significant role in the growth of many nations' economies, particularly those in Asia.

5. CONCLUSION

In the previous two to three decades, FDI has become more important as a key supplier of resources including money, know-how, and talent. The major focus of the research has been on the phenomenon's complex effects on the host nations. The most important one concerns the receiving country's economic growth. Benefits in terms of economic growth were widely publicised by nations like Singapore, Hong Kong, Taiwan, and South Korea. Pakistan, like many other nations, has enacted a number of laws designed to entice foreign direct investment. Since FDI's effects vary from country to country depending on the policies in place, it's important to examine those effects in a wide range of settings. The goal of this research is to provide an empirical assessment of FDI's contribution to Pakistan's economic growth. The foreign direct investment was one of many independent factors. Others were domestic investment, exports of goods and services, and the size of the labour force. We utilised time series data from the years 1971 to 2009. The data were analysed using the Autoregressive Distributed Lag (ARDL) and the bound testing method for cointegration. Our data showed that FDI contributed positively and significantly to Pakistan's economic growth, as predicted. Similar outcomes were seen with domestic investment, but the FDI outcomes were more robust, suggesting that FDI is more effective. Exports had a favourable but negligible effect.

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An Examination of CSR's role in Fostering Organizational Commitment and Employee Performance

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ARTICLE INFO			ABSTRACT

The study aims to identify the inspiration of CSR (Corporate Social Responsibility) in developing organizational commitment and employee performance. Data were collected from 281 employees of Pharmaceutical companies in Pakistan by a standardized survey questionnaire employing the random sample method. Corporate social responsibility, digitalization, organizational rewards, employee performance, and organizational commitment were the main variables of the investigation. The planned framework is examined empirically using a statistical package for the social science for demographics, reliability, descriptive, and correlation. Then confirmatory factor analysis was used to check model fit and validity, and the structural equation model was used for hypothesized model. Corporate social responsibility, digitalization, and organizational rewards positively impact employee performance by the mediating effect of organizational commitment. This examination contributes to a more profound comprehension of how employee performance can be influenced by the impact of corporate social responsibility via organizational commitment.

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1. INTRODUCTION

Enhancing employee performance will necessitate using digital technologies as a primary weapon to assist in the achievement of volunteer activities to deliver the highest Tampa et al. (2022). Availability and the importance of digital systems in the workflow have ushered in a new

period of advancement in work. Still, these innovations have yet to be matched with a rise in human capabilities, which influences the effectiveness of employee performance in a business Nasib (2020).

Employee empowerment is one of the many aspects that determine employee performance, according to Estiningtyastuti (2022). People who are qualified and capable of performing are needed to boost employee performance because these improvements are crucial for the business to reach its goals. It is possible to determine how competent an organization's employee performance is by looking at one of its resources: employee performance. If the employee's performance is very good, it will be very profitable for the company & if the company's performance is not good, then the company will not develop and grow. Business accomplishment or job (output) of quantity and quality produced by human resources in performing their given tasks under the authority delegated to them is called performance (Mangkunegara, 2016).

The commitment element to the business, or in a broader sense, organizational commitments, is appropriate for examining employee performance improvement. According to Imam Ghozali and Setiawan (2006), both business commitment to employees and employees' commitment to the firm are included in commitment intensity and required because these will establish an atmosphere of competent working. While defining commitment as a continuous pattern of engagement in behavioral approach, therefore employee's commitment can increase employee performance of an organization "Wright (1992) argued that the more a person is dedicated to their job, the better the performance will be, resulting in a greater degree of judgment." the conditions in which employees connect with a certain organization's goal and want to remain a part of the company is known as organizational commitment (Robbins et al., 2013).

The present study is being made to make a significant contribution to corporate social responsibility, digitalization, and organizational rewards as independent variables to analyze their effect on employee performance. This study also examines the relationship between organizational commitment as a mediator.

2. LITERATURE REVIEW

2.1 Corporate Social Responsibility

In numerous ways in academia, ranging from a requirement, CSR has been characterized (Bowen, 2013) to consumers' aspirations of participation in triple PPP (Profit, People, and Planet) referring to triple bottom line (Economics, social, and environmental). CSR is a significant concept studied in business and communication connections. Researchers have extensively investigated CSR and its dimensions over the last three decades (Berens et al., 2005; Iglesias et al., 2020). (Berens et al, 2005; Gelbmann, 2010; Jamali & Sidani, 2008., Arena et al., 2019;). Latif Perez and others have coded in their study CSR as the widely discussed topic in business, finance (Schulz & Bergius, 2014), strategic management (Avram & Kühne, 2008), and social studies. According to Jamali and Sidani 2008, The contemporary definition of CSR "conveys a viewpoint in which a firm finds economic benefit in servicing a vast range of community expectations and requirements and seeing net advantages to flow from socially responsible activity." Over 500 Fortune organizations are particularly concerned with Corporate Social Responsibilities; to that end, they employ industry experts specializing in CSR reputation

management and dissemination methods (Lii & Lee, 2012).

Due to the theoretical and practical significance of the OC notion, numerous academics have offered a variety of definitions. OC is defined as a worker's psychological connection to and determination to succeed for their company. Meyer and Allen (1990); Mathieu and Zajac (1990) (1997). According to Meyer and Herscovitch (2001), OC is "a factor that ties a person to a path of action relevant to one or more aims." Workers typically experience emotional, procedural, and continuous commitment attitudes as they progress through the company, by Allen and Meyer's organizational commitment paradigm from 1990 (Allen and Meyer (1990); Meyer et al., 2002). Affective commitment refers to a worker's feelings based on expressive connections with their employer. Normative commitment is based on workers' sense of duty to their company. Last but not least, the motivation for continued engagement comes from the financial and emotional penalties that departing employees experience, according to numerous studies (Cohen 2017; Meyer and Allen (1997); Cooper-Hakimand Viswesvaran (2005); Meyer et al., (2002), the OC model is strongly associated with several significant organizational results, such as turnover, absenteeism, work satisfaction, citizenship behavior, and performance. The OC of workers is significantly elevated by various organizational contexts, including management, corporate cultures, human resource management systems, and different organizational practices, according to earlier publications on OC. Meyer and Allen (1997); Mathieu and Zajac (1990); Cooper-Hakim and Viswesvaran (2005). CSR will affect employee OC, given that it might serve as a key corporate environment. According to numerous earlier studies (Brammer et al., (2007); Stites and Michael (2011); Turker (2009), CSR is a significant antecedent of OC. Social identity rationale has been increasingly utilized in prior studies examining the link between CSR and OC to explain how CSR influences OC. Ashforth and Mael; Turker (2009); (1989). According to SIT (Social Identity Theory), CSR is likely to boost individuals' social selves and self-concepts (Ashforth and Mael (1989); Pratt (1998). Workers taking part in CSR practices would believe that they are not only making a positive contribution to society but also a part of the desired firm (Farooq et al., 2007; Kim et al., 2010). The views would help them develop a beneficial interpersonal identity, improving their perspective of themselves. Participants are, therefore, likely to experience a close relationship with and identification with their organization (Pratt (1998); Dutton et al., (1994).

H1: Corporate social responsibility influences organizational commitment favorably.

2.2 Digitalization

Digitalization is improving supplier and client relationships, adjusting how these companies interact across company boundaries upstream or downstream and converting industrial companies' ecosystems and value chains. It is also trying to improve information gathering, storage of goods, big data analytics, and integration (Porter & Heppelmann, 2015). Digitalization expenses might be substantial, with difficult installation and interaction with many subsystems, such as different decision-making processes and visualization techniques. Front-end data usage should be enhanced by IT expenditures, and ultimately the back-end value chain processes will also be increased (Porter, 2001; Porter & Heppelmann, 2015). By automating information gathering, warehousing, and monitoring, production organizations invest in digitalization to reduce the expense of information processing (Wamba et al., 2017).

According to Duan et al. (2017), organizations must adapt by increasing their capabilities' sophistication as information technology progresses. The digitalization of HRM can be a firm's advantage and improve results. According to Boudreau and Jesuthasan (2017), the flexibility of HRM Digitalization to adapt to technological developments allows it to improve business results. Additionally, Oyewobi et al. (2019) assert that worker dedication is crucial for an organization to succeed and achieve its objectives. Workers can therefore enhance their performance.

H2: There is a positive impact of Digitalization on organizational commitment.

2.3 Organizational Rewards

The reward is a perk offered by the company in the shape of money/cash, bonuses, or advancement that fosters feelings of job pleasure, such as confidence in one's function, a sense of success, and/or the ability to perform well with others. Rewarding employees leads to greater satisfaction, and rewarding them makes it possible for them to complete their duties (Bintoro & Daryanto, 2017). Chepkemoi and Bett (2018) performed a study in a manufacturing business. The study sought to comprehend work engagement and incentive approach. It was discovered that the organization gives thanks every six months.

Additionally, the staff is given training, yearly rewards, and club memberships, all of which help them become more involved in the business and increase their motivation and job satisfaction. Similarly, Arokiasamy et al. (2013) investigated employee motivation in academic settings. It was discovered that employee motivation and satisfaction correlate directly with an efficient reward system. This shows that the reward system has a variety of influences on the organization and that effective management can produce beneficial results as long as the organization's goals are achieved.

According to Lincoln and Kalleberg (1990), how people feel about their jobs and the business they perform for, the firm's rewards may significantly impact them. Understanding the difference between intrinsic and extrinsic rewards in this situation is crucial. Rewards from inside the profession, such as diversity, difficulty, and independence, are known as intrinsic rewards. On the other hand, extrinsic rewards include income and supplementary advantages, internal prospects for development or growth, community factors, and physical working environments. According to O'Reilly & Chatman 1986, and associates, extrinsic rewards are more likely to be significant toward an ongoing commitment to the organization.

In contrast, intrinsic rewards are likely more relevant to affective commitment (and, we argue, job involvement). According to this logic, we predicted that satisfaction with intrinsic rewards would have a high correlation with job engagement and affective commitment but little to no correlation with continuation commitment. Contrarily, it was predicted that satisfaction with extrinsic rewards would have a minor impact on the forecast of work participation and affective commitment but would be crucial for continuous commitment.

H3: *Organizational rewards have a positive impact on organizational commitment.*

2.4 Organizational Commitment

As defined by Baird et al. (2019), organizational commitment is the circumstance in which

workers exhibit loyalty to the company. Consequently, to attain corporate objectives, dedication to the organization is crucial. (Siengthai et al., 2019; Aguiar-Quintana et al., 2020). Jawaad et al. (2019) study that organizational commitment refers to how strongly employees experience connected to and recognizes their company. According to Chan & Ao 2019, there are three dimensions of organizational commitment, 1. Affective Commitment 2. Continuance Commitment 3. Normative Commitment.

Undoubtedly, one of the elements that may result in improved employee performance is employees' commitment to the firm. Individuals who are dedicated to the company are more likely to be the best players than less dedicated ones because they put out additional actions to achieve the company's performance and work to achieve its objectives (Jafri and Lhamo, 2013). It is believed that employees who commit more fully will be more concentrated and do exceptional jobs (Berberoglu and Secim, 2015). According to Sutanto (1999), there is a strong and consistent link between corporate commitment and employee performance. He made it clear that motivated employees desire to contribute significantly in this environment. According to Sutanto (1999), organizational commitment is a vital element that is especially relevant since it can dramatically affect employee performance.

H4: Employee performance is positively impacted by organizational commitment

2.5 Employee Performance

The word "performance" is obtained from "job performance" or "real performance" (accomplishments in work or real achievements made by someone). "The working amount and quality attained by an individual in doing their tasks by the obligations assigned to him" is what is referred to as performance (work performance) Mangkunegara and Prabu (2005According to McCloy et al. (1994), performance is a behavior or action that is connected to the organization. Wherein the choice of organization is made by the management. Performance is not described as a conclusion, a result, a behavior output, or an activity. Performance, however, is an activity or an act in and of itself. Therefore, for some particular books, performance is multifunctional. It has a performance element built into the interaction with other factors within the range of variation. Performance is how someone's labor is manifested. Performance is a major factor in influencing employee behavior since it serves as a foundation for research, assessments, and system evaluation (Robbins and Judge, 2006).

2.6 Framework

.**Figure 1: Theoretical Framework**

3. RESEARCH METHODOLOGY

3.1 Sample and Sampling Technique

The Sample size of respondents was determined using 300 respondents from different Pharmaceutical organizations, out of which only 281 questionnaire responses were received. The researcher chose employees of these organizations to gather data. Because of its benefits, the researchers applied a random sampling technique to the 300 individuals.

3.2 Data Collection

Data was collected from operational and tactical managers of different pharmaceutical managers randomly from other companies, and a sample of 300 was chosen, and a self-administrate digital questionnaire via Google forms was used to collect data from respondents randomly. Out of 300 respondents, the valid questionnaires are about 281, representing a 93.66% response rate.

Cronbach's Alpha test was later employed to assess the internal consistency of demographic data, and descriptive statistics such as correlations, regression, confirmatory factor analysis, and structural equation modeling were applied. Data collection involved using a digital questionnaire form created and distributed using Google Forms. The sample was drawn using random sampling methods.

Table 1: Respondent information

	Frequency	Percentage (%)
Age of Respondents		
18 - 27	110	39.2
28 - 37	108	38.5
38 - 47	40	14.2
48 & above	23	8.1
Total	281	100
Gender		
Female	113	40.2
Male	168	59.8
Total	281	100
Job of Respondents		
Area Manager	44	15.6

Head of Sales	18	6.4
Sales manager	13	4.6
Territory Manager	206	73.4
Total	281	100
Experience of Respondents		
Below 1 year	39	13.8
1 - 3	104	37.2
4 - 5	38	13.5
6 or above	100	35.5
Total	281	100
Pharmaceutical Companies of Respondents		
Glaxo Smith Kline	50	17.9
Novartis	90	32.1
Bayer	58	20.6
Martin Dow	21	7.4
Pfizer Pakistan Limited	62	22
Total	281	100

3.3 Instrument development

   Items and metrics from previous studies were adjusted for this investigation. The Corporate Social Responsibility issues were evaluated on a 05-point Likert scale, with 01 denoting strongly disagree and 05 denoting strongly agree. The investigator modified five items for corporate social responsibility from Klein and Dawar (2004) and Brown and Dacin's (1997) studies. The digitalization scale was adapted from Su et al. (2020) study's two components. The three items from Lee and Kim's (2012) list served as the basis for the organizational rewards scale. Singh et al. (1996) are three objects that were modified to evaluate organizational commitment. The three items from Bishop (1987)'s scale for measuring employee performance were used.

4. EMPIRICAL RESULTS

4.1 Reliability and Descriptive Analysis

   Corporate Social Responsibility, digitalization, organizational rewards, and organizational commitment were the five factors that the present study examined. It was interesting to learn that corporate social responsibility has 05 components and a Cronbach's

Alpha value of 0.907 in this study. With 02 items, digitalization has a Cronbach's Alpha value of 0.852. Cronbach Alpha values for three organizational rewards items were 0.852, 0.863 for three organizational commitment measures, and 0.870 for three employee performance items. All of the Alpha (a) values were higher than 0.60. It was acceptable to conclude that all measurement tools were extremely dependable as an outcome and that additional trials might be carried out. . The mean of corporate social responsibility was (Mean= 3.72, Standard Deviation=1.10), Digitalization (Mean= 3.52, Standard Deviation = 1.28), organizational rewards (Mean= 3.64, Standard Deviation = 1.16), organizational commitment (Mean= 3.84, Standard Deviation = 1.10) and employee performance (M= 3.62, SD= 1.17).

Table 2: Reliability and Descriptive

Variables	No. of Item	Cronbach 's Alpha	Mean s	SD
Corporate Social Responsibility	05	907	3.72	1.10
Digitalization	02	.852	3.52	1.28
Organizational Rewards	03	.858	3.64	1.16
Organizational Commitment	03	.863	3.84	1.10
Employee Performance	03	.870	3.62	1.17

4.2 Correlation Matrix

The correlation matrix showed that all the null hypotheses can be rejected and illustrates the close link between a company's social responsibility and employee performance. Studies represent those correlations higher than .10 represent positive and at $p < .05$ are significant. According the extracted values of bivariate correlation means that corporate social responsibility has strong positive correlation to digitalization (r=.89, p<.01), corporate social responsibility had strong positive correlation to organizational rewards (r=.96, p<.01), corporate social responsibility had strong positive correlation to organizational commitment (r=.96, p<.01) and corporate social responsibility had strong positive correlation to employee performance (r=.94, p<.01). Likewise, Digitalization was positively correlated with organizational rewards (r=.92,p<.01), positively correlated with organizational commitment (r=.78, p<.01) also had strong positive correlation with employee performance (r=.97, p<.01). Meanwhile, organizational rewards had strong positive correlation to organizational commitment (r=.88,p<.01) also had strong positive correlation to employee performance (r=.86,p<.01). Likewise, organizational commitment is positively correlated with employee performance (r=.86, p<.01).

Table 3: Correlation Matrix

Variable	1	2	3	4	5
CSR	1				
D	.892**	1			
OR	.968**	.925**	1		
OC	.965**	.782**	.884**	1	
EP	.942**	.971**	.972**	.865**	1

a. Confirmatory Factor Analysis

The results of the five-factor model ($x2$ = 71.3; df = 132; $x2$/df = 1.85; P = .000; CFI = 0.92; GFI = 0.91; NFI = 0.92; TLI= 0.91; RMSEA = 0.41) were more accurately fit than those of the one-factor model ($x2$ = 1260.22; df= 213; p.000; CFI = 0.54; GFI = 0.71; NFI = 0.48; T The results of the proposed five-factor model thus indicate that it was a better model fit and more *suitable,* as shown by the results.
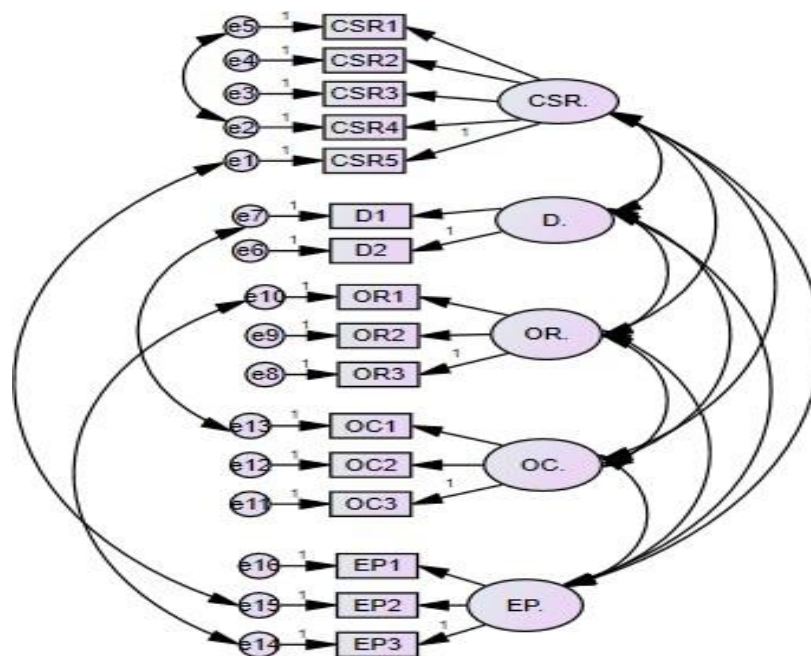

Figure 2: Confirmatory Factor Analysis

b. Structural Model Results

Basic and Mediating effects are shown with the help of the Full Structural Model. The builder of AMOS paths in the shape of a chart is shown in the figure above. The signs represent values of importance, and standardized regression represents trial values. Model Fit: fit $\chi 2$ = 724.645; df = 312; p < .000; $\chi 2$/df = 2.32; CFI = .93; GFI=.94; NFI=.94; TLI=.95and RMSEA= 0.42.
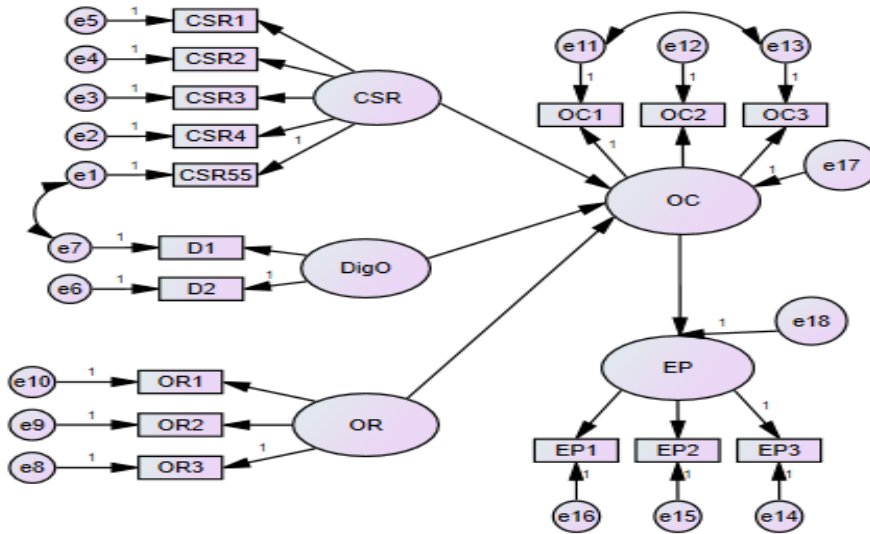

Figure 3: Structural Equation Model

c. Regression Analysis

A straightforward linear regression inquiry was carried out to ascertain the association between the variables. H1: The standardized path coefficient disclosed a major connection between self-reported corporate social responsibility and organizational commitment (β = .96; R^2 = .93; p <.000) and explained 93% variance in self-reported organizational commitment. Thus, hypothesis 1 was fully supported. H2: The standardized path coefficient disclosed significant linking among self-reported digitalization and organizational commitment (β = .78; R^2 = .61; p< .000) and explained 61% variance in self-reported organizational commitment. Thus, hypothesis 2 was supported. H3: The standardized path coefficient disclosed a significant association between self-reported organizational rewards and organizational commitment (β =.88; R^2 = .78; p < .000) and explained 78% variance in self-reported organizational commitment. Thus, hypothesis 3 was supported. H4: The standardized path coefficient disclosed a significant connection between self-reported organizational commitment and employee performance (β =.86; R^2 = .74; p < .000) and explained 74% variance in self-reported employee performance. Thus, hypothesis 4 was supported.

Table 4: Hypothesis Results

Predictor		Outcome	Beta	R2	Results
CSR	<-	OC	0.96	.93	Accepted
D	<-	OC	0.78	.61	Accepted
OR	<-	OC	0.88	.78	Accepted
OC	<-	EP	0.86	.74	Accepted

5. DISCUSSIONS

The outcomes of this research show that organizational commitment is significantly positively impacted by corporate social responsibility. Earlier studies, including those by Nejati and Ghasemi (2013), have consistently found a beneficial influence of corporate social responsibility on organizational commitment. Findings indicated that organizational commitment was significantly positively impacted by digitization as well. The main conclusions of this study demonstrate that organizational rewards have a beneficial effect on organizational commitment. In previous research, Koh et al. (2007) discovered that rewards significantly improved commitment. According to the study of Barreda et al. (2020), the psychological rewards of social media are positively associated with commitment to the tourism industry. The results of the study display that organizational commitment has a positive impact on employee performance. According to previous findings of Astuti and Soliha (2021), organizational commitment has a positive effect on the performance of employees. Results of the research show that organizational commitment has a positive impact on employee performance.

6. CONCLUSIONS

The investigation, on the other hand, demonstrates the impact of corporate social responsibility in the advancement of organizational commitment and employee performance. The connection between social responsibility, digitalization, organizational rewards, organizational commitment, and employee performance was determined by facts through this study. Data from managers and staff members of various pharmaceutical companies in Pakistan were gathered using a questionnaire. A quantitative research design was permitted for this persistence. The investigation results show a significant and positive association between the

factors, and corporate social responsibility has a role in how employees become committed to their work and perform effectively. It is stated that the pharmaceutical industry must combine corporate social responsibility, digitization, and organizational rewards to improve employee performance. To clean and screen the information and perform reliability analysis, descriptive statistics, correlation matrix, and regression, the Statistical Package for the Social Sciences (SPSS) was first employed. Validity and model fitness was checked using AMOS via Confirmatory Factor Analysis (CFA). For the postulated model, the structural equation model was used. The current study promotes a new basis for analyzing organizational commitment exhibiting systems in corporate social responsibility, which aids businesses in identifying their flaws and disadvantages in this area and improving employee performance.

7. PRACTICAL CONTRIBUTIONS

There are several useful results and commitments found in this research study. First, the study confirms that corporate social responsibility positively affects organizational commitment. By using corporate social responsibility activities, managers may strengthen organizational commitment and swiftly impact employee performance. Managers may give good work to the proper person, make the task of work easy, and help their employees in a position to make them loyal. Second, The findings demonstrate a significant positive connection between digitalization and organizational commitment. Through digitalization, managers give the best services related to information about job tasks and employee records for promotion activities, and digitalization is also helpful for employees in work activities. Managers provide employees with electronic devices and give training related to the company's software and work activities. Third, there is strong evidence that organizational rewards positively impact organizational commitment. Practically, managers may use organizational rewards to enhance organizational commitment and positively create increased employee performance. Managers may reward those employees who have done their targets properly and on time. The study's findings indicate that organizational commitment positively impacts employee performance. Managers will use proper strategies and policies in companies and make job appraisals monthly based on targets and give benefits to those employees who achieve their targets.

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