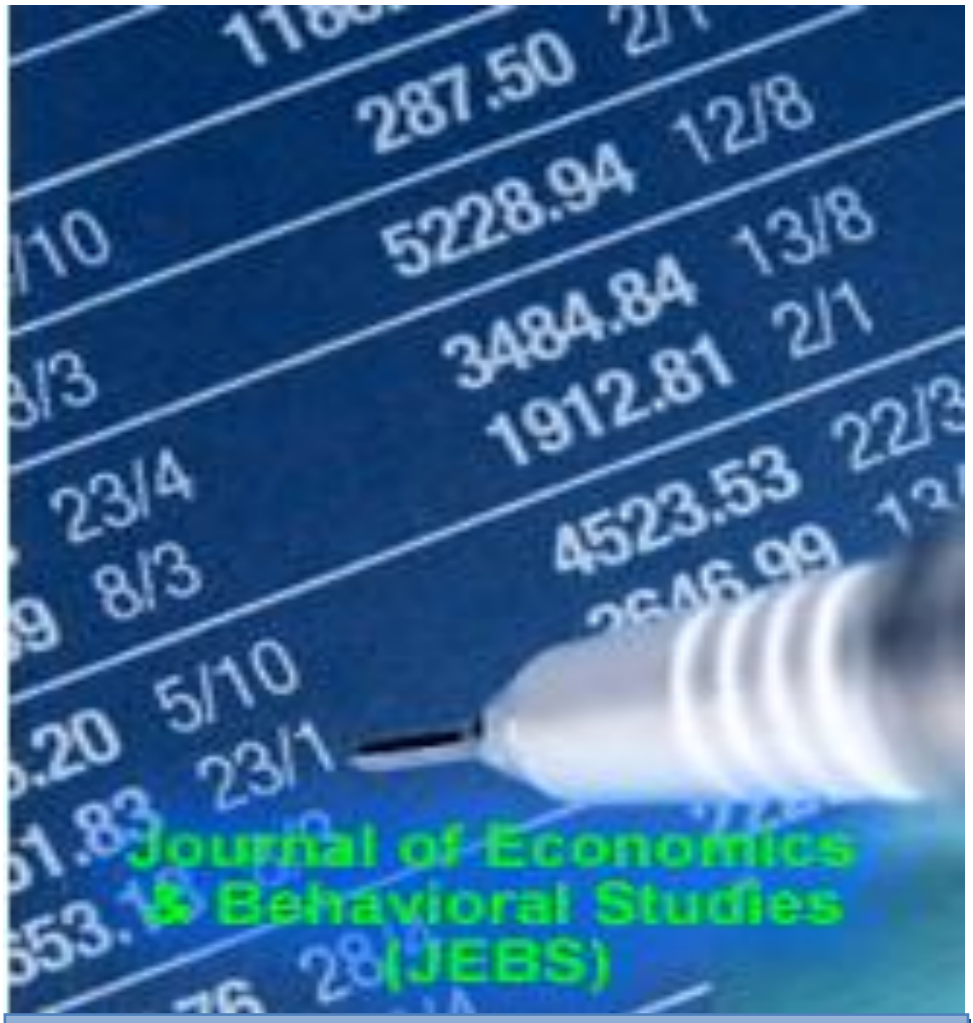

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Editorial

Journal of Economics and Behavioral Studies (JEBS) provides a distinct avenue for quality research in the ever-changing fields of economics & behavioral studies and related disciplines. Research work submitted for publication consideration should not merely be limited to the conceptualization of economics and behavioral developments but comprise interdisciplinary and multi-facet approaches to economics and behavioral theories and practices as well as general transformations in the fields. Scope of the JEBS includes subjects of managerial economics, financial economics, development economics, finance, economics, financial psychology, strategic management, organizational behavior, human behavior, marketing, human resource management and behavioral finance. Author(s) should declare that work submitted to the journal is original, not under consideration for publication by another journal and that all listed authors approve its submission to JEBS. Author (s) can submit: Research Paper, Conceptual Paper, Case Studies and Book Review. Journal received research submission related to all aspects of major themes and tracks. All submitted papers were first assessed by the editorial team for relevance and originality of the work and blindly peer-reviewed by the external reviewers depending on the subject matter of the paper. After the rigorous peer-review process, the submitted papers were selected based on originality, significance, and clarity of the purpose. The current issue of JEBS comprises of papers of scholars from Peru, South Africa, USA and Pakistan. Risk Aversion, Behavioral Finance and Green Bonds for the Sustainability of Environmental Assets, African Economic Integration Development in Technological Transformation, Determinants of Farmers' Participation in the Management of Smallholder Irrigation Schemes, Socioeconomic Disparities in the Effects of Pollution on Spread of Covid-19 and Do Narcissists Tend to Reduce Interpersonal Conflicts in Organizations were some of the major practices and concepts examined in these studies. The current issue will therefore be a unique offer where scholars will be able to appreciate the latest results in their field of expertise and to acquire additional knowledge in other relevant fields.

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PAPERS

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Risk Aversion, Behavioral Finance and Green Bonds for the Sustainability of Environmental Assets in Peru

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Abstract: The study objective is to investigate the relationship between behavioral finance and the decision to invest in green bonds for the sustainability of environmental assets in Peru. A survey with behavioral questions was applied to a sample of 54 respondents between July and October 2019. Spearman's rank correlation, independence tests, and logistic regression were used. Significant negative correlations were found between the level of education and risk aversion, and between age and risk aversion. A negative relationship was found between risk aversion and the feeling of comfort when investing in stock market instruments such as green bonds. Aversion to a loss in investment decisions was validated; most people choose low-risk fixed income instruments despite feeling safe investing in stocks. According to the logistic regression, the decision to invest in green bonds to improve environmental quality is explained by the variables "green bond rating" and "feeling of comfort (satisfaction) investing in green bonds."

Keywords: *Behavioral finance, green bonds, risk aversion, loss aversion, environmental sustainability.*

1. Introduction

Financial markets behave with limited economic rationality. Therefore, they are complemented by the emotions of investors when they make decisions in a context of uncertainty. Faced with the question of how to finance environmental goods, the possibility arises of using behavioral finance to promote sustainability, of these environmental assets. Richard Thaler is regarded as a pioneer of behavioral finance, having won the 2017 Nobel Prize for Economics in recognition of his contribution to the study of the behavior of financial markets. Among his innovations, Thaler introduced pioneering models of investor psychology to explain empirical challenges such as the predictability of stock prices. The theoretical basis of this field was proposed by the psychologists Kahneman and Tversky (1979), whose "prospect theory" was an alternative to the neoclassical economic theory of expected utility. According to behavioral finance, people typically act irrationally when making risky decisions. Thaler (1999), in his paper "The End of Behavioral Finance", argues that economists routinely incorporate as much "behavior" in their models as they observe in the real world and that doing otherwise would be irrational. Thaler referred to the 2013 Nobel laureate in Economics, Robert Shiller, whose study (1981) sparked a long and complex debate among financial economists; however, his conclusion is now generally thought to be correct.

Stock and bond prices are more volatile than proponents of efficient rational market theory would predict. According to Ahmad et al. (2017), understanding the origin of behavioral biases, causes, and effects requires interdisciplinary perspectives from the fields of psychology, sociology, and biology. In this vein, behavioral finance studies the behavior of investors (Kankipati & Sireesha, 2017). The focus is justified because behavioral finance provides more knowledge about the role that emotions play in optimal decision-making in the context of uncertainty and risk, the concept of "loss aversion" being innovative in prospect theory, in comparison with the neoclassical approach of risk aversion. Furthermore, cognitive biases and "nudges" may affect asset prices. Finally, it is important to guide Peru to being a low carbon economy; to encourage the country to channel more financial resources to reducing pollution; to complement economic rationality with the "emotional" behavior of economic agents and to nudge investors toward green financial assets. The objective of the study is to investigate the relationship between behavioral finance and the decision to invest in green bonds for the sustainability of environmental assets in Peru. Given the limited prior research on behavioral environmental finance, this study contributes to investigating the relationship between behavioral finance and green bonds as an environmental financing instrument.

2. Literature Review

In their empirical study, Paraboni et al. (2018) found an association between market sentiment and risk. This implies that the behavioral aspect of risk management should not be ignored, and the authors recommend that future studies further explore this relationship. Bolsas & Mercados Españoles-BME (2017) predicts that 3.9 trillion dollars a year will be invested in advanced countries to finance sustainable development until 2030. In July 2017, the BME's corporate debt market, the AIAF Fixed-income Market-AIAF, has admitted a "green bond" issue from the Spanish state-owned railway company with a value of 600 million Euros. The issue has an expected maturity of six years and will pay interest of 0.8% per year. The unit face value of the securities is 100,000 Euros and is intended for institutional investors. Green bonds are a financial asset associated with sustainable financing and investment criteria. With regard to investment biases, conservatism bias occurs when people make investment decisions using old information in their mind (often based on past experiences) instead of updating to the new information available in the market (Rahim et al., 2019). Candraningrat, et al. (2018) examined framing information, the disposition effect, and the interaction between the two in investment decisions made by investors when predicting stock prices. Eighty individual investors from the Bali community participated in their experiment, based on a non-probability sampling method with an intentional sampling technique. They found that investors given a positive reporting framework will predict higher stock prices than investors given a negative reporting framework. They also confirmed that the information received by investors contributes to the maximum effect of the provision and that the effect of this provision is influenced by the framing of the information received.

Finally, they observed that there is no difference in behavior when making investment decisions based on gender and investment experience, while there is a difference in the level of education of the participants. Gupta (2018), using a sample of 23,301 firms per year from 43 countries, found that an improvement in environmental practices leads to a reduction in the implicit cost of capital, especially in countries where governance at the national level is weak. He also found that most of the benefits come from reducing emissions and unnecessary wastage of resources. According to a report by the Green Finance Taskforce (2018), in the transition to a low-carbon economy, the United Kingdom (UK) has led the world in reducing its emissions without sacrificing family living standards. Since 1990, the country has reduced emissions by more than 40%, while its economy has grown by two-thirds: the best performance in the G7. The challenge is, first, to advance London as the world's leading center for green finance and, second, to deliver on the UK's clean growth strategy. One of the Green Finance Taskforce's recommendations is the issuance of a green sovereign bond similar to the French equivalent, valued at 9.697 trillion Euros, as a component of the UK's comprehensive capital raising plan. According to the Mexican Carbon Platform (2018), the Lima Stock Exchange (BVL), together with the Embassy of the United Kingdom in Peru and the MéxiCO2 platform, promotes the green bond market in Peru for the financing of projects with a positive impact on the environment. According to the Climate Bonds Initiative (2019), the first green bond in Latin America and the Caribbean was issued in December 2014 by the Peruvian wind-farm operator Energía Eólica, an indirect subsidiary of the energy multinational Contour Global.

The 204 million US dollar bond was used to refinance the Cupisnique and Talara wind farms. Candraningrat et al. (2018) used direct economic actors (investors) as participants in their experiment, which consisted of 80 active investors in Denpasar Bali, grouped into four treatment groups. They demonstrated that the disposition effect has a significant effect on investor behavior in investment decision-making marked with the prediction price. Martins et al. (2018) investigated the use of games among those trading in Brazil's B3 stock exchange. The tools for simulating stock market operations were the World Wide Web with Metatrader and Trading View software. The decision-making variables taken into account were based on fundamental, technical, and graphical analyses. Interacting within the virtual environment of the B3, the participants in the game (students of a course on stock-market operations) were organized into groups, with some moments of collective decision-making and others of individual decision-making. The game had an end date, and rules were established rules to determine the results; that is, the scores determined the winners and losers of the game based on the strategy adopted by each student trading in the B3. The students were evaluated by the financial market, without interference from the professor. There was a dropout rate of 50% among the initial total of 32 students throughout the course, attributed to the "rigors" of this elective course. Another possibility for this rate may be related to an aversion to uncertainty, risk and loss (Kahneman & Tversky,

1979), and to the lack of prior knowledge of financial operations since most of the students who dropped out were majoring in courses outside the area of finance.

The size of the pilot group (N = 11) in Endress (2018) proved appropriate in terms of manageability and explanatory, power; however, more data points and coverage of more market phases (bull and bear markets) could help increase the quality of their experiment. Their main experiment was conducted over more than five weeks. All participants were interviewed to provide them with a deeper understanding of the decision-making process and to improve the design of the planned experiment. As a result, all agreed that the questions were easy to understand, and felt able to estimate whether the stock price was going up or down. The design and focus of the main experiment were similar in principle to the design of the pilot test (Endress, 2018); there were only a few changes, including an improved online questionnaire, more interview questions, and a requirement that participants enter the target price not as the total amount in Euros but as a change in percentage. Since it was also necessary to keep in touch with all participants for the three-month duration and to allow a moderate dropout quota, an initial panel number of approximately ten participants (N = 10) seemed appropriate. A key criterion for selection was to ensure the diversification of the group in terms of age, gender, level of education, and professional background, etc. Puaschunder (2018) reviewed and proposed how to use mental heuristics, biases, and nudges in the finance domain to make gains in the markets. Howarth and Roberts (2018) critically evaluate the impact of the Green Deal.

On shaping pro-environmental behavior and present the results of two government-funded projects to encourage the adoption of the Green Deal in England, to reduce carbon emissions and improve domestic energy efficiency. They presented the discussion of two case studies, one in Cambridgeshire and the other in Suffolk, UK. To encourage early adoption of the Green Deal, the government made available £ 10 million for competition by local authorities, of which Cambridgeshire received £75,000 and Suffolk received £98,000. Both local authorities used the funds to offer a free Green Deal. Evaluation thereof was decided in response to very early indications from potential Green Deal customers that the cost of the evaluation was a barrier to their participation in the scheme. From a survey of 547 male and female Arab investors in Saudi Arabia and Jordan, Salem (2019), using the Wilcoxon signed-rank test and the Mann-Whitney U test, found that Arab women are more risk-averse and have a lower tolerance for financial risk compared to Arab men; this was explained in part by lower levels of investment literacy, in addition to political uncertainty in the Arab region. The readiness effect (DE) describes the willingness of winners to sell too early and the willingness of losers to hold for too long. Sarmiento et al. (2019) found that market participants with the highest disposition effect (SD) tend, on average, to be those with the lowest cumulative return, to have the smallest value portfolios, to be the least durable, and have the highest coefficient of variation.

3. Methodology

Temporal and Spatial Scope: The study covers behavioral finance for the sustainability of environmental assets. **Universe:** Behavioral finance for public environmental assets; unit of analysis: Green bonds. Because green bonds were first issued only recently and data on their impacts on environmental quality in Peru is scarce, primary information was collected through an online questionnaire. The target population was a diversified group composed of individuals from the business, environmental, and engineering specialties of academia (undergraduates and graduates); professionals from the public and private sector; and finance experts. In each case, the participants were from the south, center, and north of Peru. The sample size is justified by the recent issuance of green bonds in Peru, their scarcity, and the limited public knowledge about them. Nonparametric statistical tests were applied to qualitative data obtained from the survey since the probability distribution of the study variables is generally unknown.

Data Collection Techniques: Secondary information on green finance. A survey containing 13 questions (closed Likert-type except for the last question, "What option do you feel would contribute to the sustainability of environmental capital via the stock market?") was applied online from July to October 2019 to individuals who were over 18 years old, educated to university level (from current undergraduates to PhD graduates), and representative of southern, central, and northern Peru. The respondents were students and graduates from the disciplines of business sciences, environmental sciences, and engineering; public and private sector professionals; and experts in finance and the stock market. The reliability of the questions in

the questionnaire was evaluated based on the database of a sample of n = 54 valid surveys (four were discarded due to repeated responses) and using the SPSS statistical software. The relationship between behavioral finance and environmental assets was discerned through an analysis of the survey data.

4. Results and Discussion

Green bonds, as fixed-income debt instruments, are used to finance or refinance new or existing projects that are eligible as "green projects." Their issuance requires a second opinion report or a climate bonds certificate.

Table 1: Projects Eligible for Financing with Green Bonds, Peru

Sector / Project
Water management
Waste management
Renewable energy
Energy efficiency
Afforestation
Farming
Bioenergy
Clean transport
Green buildings
Others.

Source: Lima Stock Exchange

The green bond issuers in Peru are Productos Tissue del Perú S.A.C. and the Corporación Financiera de Desarrollo S.A. (COFIDE). Protisa Peru is a subsidiary of CMPC Tissue, itself a subsidiary of Empresas CMPC, one of the largest wood products manufacturers in the world. CMPC Protisa has issued green bonds to finance or refinance projects to improve the environmental efficiency of its paper mills in three areas: energy efficiency, pollution prevention and control, and sustainable water management. CMPC manages more than 1 million hectares of forest assets in Chile, Brazil, and Argentina spread among plantations, preserved native forests, and the high-value protected areas. It was also about the issuance of green bonds and environmental sustainability in Peru. Then, the relationships between the study variables were statistically compared using non-parametric statistical methods and logistic regression, and, finally, the results were interpreted and discussed in the framework of behavioral economics. From these forests, CMPC harvests more than 17 million cubic meters of wood annually. Sustainalytics, certified by the Climate Bonds Standard Board as a verifying organization, has evaluated Protista Peru to provide a "second-party opinion" on green and sustainable bond frameworks, verifying that it is well-positioned to issue green bonds. In 2018, Sustainalytics was recognized as the largest external verifier by the Climate Bond Initiative, as well as for environmental funding. The Lima Stock Exchange made the first public offer of a green bond on October 22, 2018. The instrument was issued by the paper company Protisa Peru for 100 million soles for a term of six years and an emission rate of 6.625%.

To refinance sustainable projects at its plants in Cañete (energy efficiency and water treatment) and Santa Anita in Lima (water treatment). The demand came from institutional investors (pension fund managers, insurance companies, and others). COFIDE, Peru's national development bank, issued the county's first green bond in May 2019, at 100 million soles, a three-year term, and a rate of 5.125%; the fund in its entirety will be allocated to refinancing two eligible green projects in the "renewable energy projects" category, with the following result indicators: 1) capacity of the renewable energy plant(s) built or rehabilitated (MW); 2) annual generation of renewable energy in MWh/ GWh and with impact indicators, the annual GHG emissions reduced/avoided in tons of CO2 equivalent. Vigeo Eiris, according to its Environmental, Social and Governance assessment methodology ("Second Parties Opinion") considers COFIDE's green bond to be consistent with the challenges of environmental responsibility. In April 2019, Consorcio Transmantaro S.A. issued international green bonds totaling 400 million dollars to finance projects related to renewable energy, energy efficiency, biodiversity conservation, and reduction of polluting emissions (with an expiration date of 04-16-2034 and an annual interest rate of 4,700%). To date, it is the only energy transmission company in Latin America to have conducted an unsecured green bond issue. In September 2019, the Lima Stock

Exchange (BVL) announced the incorporation of four Peruvian companies in SAM's new Dow Jones Sustainability MILA Pacific Alliance Index: Cementos Pacasmayo, Rimac Seguros y Reaseguros, Southern Copper Corporation and Unión Andina de Cements (Unacem), in addition to Ferreycorp, which has been part of this referred index since 2017.

Relationship / Association Tests Based on Primary Data: The reliability analysis of the questionnaire yielded a Cronbach's Alpha of α = 0.711, signaling good reliability. For the sample size n = 54, the Kolmogorov-Smirnov normality test statistic indicates that most variables do not have a normal distribution (at the 5% significance level).

Table 2: Spearman's Correlations between Financial and Environmental Variables, Peru, 2019

n=54			Education	How would you rate the issuance of green bonds?	Do you prefer a low-risk investment with a stable return?	If you had to invest $ 100,000 in a single instrument, which one would you choose?	How risk-averse are you?	Is there a relationship between financial risk and environmental risk?	How confident are you of investing in stocks?	Are losses of investment in shares due to external factors?	Do you think that investing in green bonds will contribute to environmental quality?	Do you feel more confident in your own investment views than in a financial analyst's?	Which of the assets fluctuates the most overtime?	When an investor diversifies between different assets, the risk is ...?	Would you feel comfortable investing in green bonds in a low carbon economy?
Spearman's Rho	Age	r_s	,795**												
		Sig. Bilat	.000												
	How would you rate the issuance of green bonds?	r_s	,245	1.000											
		Sig. Bil.	,080												
	Do you prefer a low-risk investment?	r_s	,002	,328*	1.000										
		Sig. Bilat	.989	.018											
	If you had to invest $ 100,000 in a single instrument, which one would you choose?	r_s	,047	,015	,003	1.000									
		Sig. Bilat.	.740	.915	.981										
	How risk averse are you?	r_s	-,282*	-,006	,249	,295*	1.000								
		Sig. Bilat.	.039	.964	.076	.034									
	Is there a relationship between financial and environmental risk?	r_s	,327*	,486*	,256	,166	-,010	1.000							
		Sig. Bilat.	.018	.000	.067	.240	.945								
	How confident are you of investing in stocks?	r_s	,332*	-,302*	-,037	,335*	,312*	-,302*	1.000						
		Sig. Bilat.	.014	.030	.795	.015	.024	.029							
	Investment losses in shares due to external factors	r_s	,028	,076	,184	,105	-,072	,276*	-,214	1.000					
		Sig. Bilat.	.841	.593	.193	.461	.610	.048	.128						
	Would investing in green bonds contribute to environmental quality?	r_s	,137	,536**	,059	-,057	-,244	,220	-,445**	,105	1.000				
		Sig. Bilat.	.334	.000	.680	.686	.082	.117	.001	.460					
	Are you more confident in your own investment	r_s	,221	,260	-,100	-,009	-,186	,360**	-,425**	,166	,131	1.000			
		Sig. Bilat	.116	.063	.480	.951	.188	.009	.002	.239	.353				

views?														
Which of the assets fluctuates the most?	r_s	.057	,169	,124	-,068	,000	,131	-,280*	,202	,287*	.042	1.000		
	Sig. Bilat.	.689	.232	.381	.631	.998	.354	.044	.151	.039	.765			
When an investor diversifies, the risk of losing is ...?	r_s	,055	,181	-,017	,008	-,007	,203	-,270	-,106	,335*	,218	-,223	1.000	
	Sig. Bilat	.698	.200	.906	.957	.962	.149	.053	.456	.015	.120	.112		
Would you feel comfortable investing in green bonds in a low carbon economy?	r_s	,107	,353*	-,043	-,172	-,281*	,200	-,582**	,244	,482**	,455**	,416**	,170	1.000
	Sig. Bilat	.451	.010	.760	.223	.043	.156	.000	.082	.000	.001	.002	.227	

**. The correlation is significant at the 0.01 level (bilateral).

*. The correlation is significant at the 0.05 level (bilateral).

Analysis of the Relationships between Financial and Environmental Variables: In this study, a survey was applied to 54 people over 18 years of age with a university education (ranging from undergraduate students to professionals with PhD degrees). A significant negative correlation was found between educational level and risk aversion; the higher the level of education of the respondent, the less risk-averse their behavior (α = 5%). Moreover, the greater the level of education, the more confident they feel about investing in stocks. Similarly, Candraningrat et al. (2018), found differences between the level of education of the participants and their behavior in investment decisions. It was also corroborated that respondents with a more advanced academic degree and knowledge of both finance and environmental assets are more likely to take into account the existence of a close relationship between financial risk and environmental risk (Table 2). A negative correlation was found, at a significance level of 5%, between age and risk aversion; that is, the older the person, the less risk-averse or more risk-loving he or she is. Furthermore, the older the respondent is, the safer he or she feels when investing in stocks (α = 1%). A significant direct relationship was also found between older age and greater confidence.

In one's own investment opinions than those of financial analysts and/or third parties (Table 2). Interestingly, most respondents (78%) stated that they would feel more comfortable investing in green bonds to achieve a low-carbon Peruvian economy, while also feeling more confident (safe) when it comes to investing in stocks in pursuit of private returns (significance level of 5 %). Evidence of loss aversion was found among respondents faced with the decision to invest a significant monetary amount (US$ 100,000) in a single financial instrument; the majority chose low-risk instruments despite their feeling of confidence in investing in stocks (Table 2). In turn, a close relationship of r = 0.482 was found between the contribution of investment in green bonds to environmental quality and the comfort (satisfaction) that the respondents would feel when investing in instruments such as green bonds to facilitate Peru in becoming a low carbon economy. (α = 1%). With regard to financial cognitive biases, conservation bias – the use of old information in the mind (Rahim et al., 2019) – is observed, since people trust their own investment views more than that of financial analysts, feeling comfortable about their investment decisions in instruments such as green bonds for the sustainability of environmental assets in Peru (r = 0.455, α = 1%, table 2).

Table 3: Relationship between Education and Risk Behavior

Education	**How Risk Averse are you?**				**Total**
	Not Risk Averse	**Neutral**	**Somewhat Averse**	**Highly Averse**	
Undergraduate	0	1	10	2	13
Bachelor's degree	0	4	7	4	15
Licentiate degree	2	0	4	0	6
Master's degree	2	5	1	1	9
Doctor's degree	2	3	3	3	11
Total	6	13	25	10	54

Chi squared 22.838, P-value = 0.029

According to the Chi-square statistic, there is a relationship between a person's level of education and their attitude toward risk at a significance level of 5% (Table 3). The Spearman correlation reinforces this significant negative association (Table 2).

Table 4: Relationship between Education, Financial Risk, and Environmental Risk

Education	Is there a Relationship between Financial Risk and Environmental Risk?				Total
	None	Little	Moderate	Strong	
Undergraduate	0	3	8	2	13
Bachelor's degree	0	5	10	0	15
Licentiate degree	0	1	5	0	6
Master's degree	1	0	5	3	9
Doctor's degree	1	0	4	6	11
Total	2	9	32	11	54

Chi squared 22.825, P-value = 0.029

Clearly, people formally educated in both finance and environmental science perceive a link between financial risk and environmental risk, α = 5% (Table 4).

Table 5: Relationship between Education and Own Investment Opinions

Education	I Feel More Confident in my Own Investment Views than the Opinions of Financial Analysts, Friends and Family?				Total
	Disagree	Somewhat Agree	Agree	Totally Agree	
Undergraduate	0	6	6	1	13
Bachelor's degree	5	8	2	0	15
Licentiate degree	1	2	3	0	6
Master's degree	1	5	2	1	9
Doctor's degree	0	2	4	5	11
Total	7	23	17	7	54

Chi squared 25.883, P-value = 0.011

When it came to investment decisions, a relationship was found between the level of education and one's own opinions according to the Chi square, at a significance level of 5% (Table 5).

Causal Relationship between Behavioral Finance and Environmental Assets: The relationship between the behavioral finance of green bonds and their contribution to environmental quality and/or reduction of pollution was investigated based on the perception of the respondents out of four options: pessimistic, neutral, somewhat optimistic, and very optimistic (Table 6). There is an association between market sentiment and risk; Paraboni et al. (2018) detect a negative relationship between risk aversion and the satisfaction (comfort) that a person would feel when investing in-stock instruments.

Table 6: Distribution of the Processing of the Variable Investment in Green Bonds. Summary of Case Processing

		N	Marginal Percentage
Do you think that investing in green bonds will contribute to environmental quality and/or reduce pollution?	Neutral	9	16.7%
	Somehow optimistic	31	57.4%
	Very optimist	14	25.9%
Valid		54	100.0%
Lost		0	
Total		54	
Subpopulation		51[a]	

a. The dependent variable only has an observed value in 50 (98.0%) subpopulations.

* The reference category is "very optimistic."

Table 7: Multinomial Logistic Regression Model

A. Pseudo R- Squared

Cox and Snell	**,488**
Nagelkerke	,570
McFadden	,346

B. Model Fit Information

Model	**Model Fit Criterion**	**Likelihood Ratio Tests**		
	-2 log Likelihood	**Chi-Squared**	**Df**	**Sig.**
Intersection only	103,073			
Final	66,970	36,103	14	,001

C. Goodness of Fit

	Chi-squared	**Df**	**Sig.**
Pearson	81,775	86	,609
Deviation	65,583	86	,950

According to the goodness of fit (Table 7c.), the null hypothesis of the logistic probability distribution (P-Value> 5%) is not rejected.

D. Likelihood Ratio Tests

Effect	**Model Fit Criteria**	**Likelihood Ratio Tests**		
	-2 Log Likelihood of Reduced Model	**Chi-Squared**	**Gl**	**Sig.**
Intersection	85,562	18,593	2	,000
Age	68,228	1,258	2	,533
Education	67,487	,517	2	,772
Bond rating	80,120	13,150	2	,001
Risk attitude	68,607	1,637	2	,441
Stocks	69,329	2,360	2	,307
Trusted	69,676	2,706	2	,258
Green investment	72,491	5,521	2	,063

The chi-square statistic is the difference in the -2 log-likelihoods between the final model and the reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all the parameters of that effect are 0.

Multinomial logistic regression is used to test the contribution of behavioral finance in investing in green environmental bonds. It was found that the model is significant and that the independent variables explain the investment in environmental green bonds between 49% and 57% according to the Cox and Snell and Nagelkerke statistics, respectively (Table 7 a, b). Specifically, the variables "green bonds rating" and "feeling of comfort (satisfaction) when investing in instruments such as green bonds" are significant (Table 7 d). In this study an online questionnaire was used; following Endress (2018), the criterion for the selection of the sample was to ensure the diversification of the respondents in terms of age, gender, and level of education. Following Thaler (1999) and Puaschunder (2018), a "nudge" was applied via the question "how satisfied or comfortable would you feel investing in instruments such as green bonds for Peru to achieve a low-carbon economy," to which the respondents answered positively. According to Ferreira and Dickason-Koekemoer (2019), the correlation between risk tolerance and level of education yielded a significant result (r = -0.154) and a small linear association, coinciding with previous research (Ferreira & Dickason-Koekemoer, 2019).

The former study also found that more years of schooling allows people to better assess the risks and benefits than fewer years of schooling. In the Peruvian case, a significant negative correlation was also found between the level of education and risk aversion (r = -0.338); that is, the higher one's level of education, the less risk-averse (or the more risk-tolerant) their behavior. According to Salem (2019), Arab women are more risk-

averse than men. In the Peruvian case, gender was found to have no effect on risk aversion when making investment decisions. Rahim et al. (2019) found that conservatism bias has positive impacts on the investment decisions of individual investors in the Pakistan stock exchange; the variation explained by the independent variables of the logistic regression is around 50% and 65% using the Cox & Snell R-square and the Nagelkerke R-square, respectively. For the Peruvian case, it was found that the independent variables explain between 49% (Cox & Snell R-square) and 57% (Nagelkerke R-square) of the investment in environmental green bonds.

5. Conclusion

Peru has ventured into the green bond market to boost investment in environmental projects. This study aims to encourage more of this kind of investment based on the contribution of behavioral finance to the sustainability of environmental assets in terms of emotionally complementing people's investment decisions. A negative correlation was found between the level of education and risk aversion; that is, the more education a person has, the more risk-tolerant they will be. In turn, the less risk-averse the investor, the more satisfaction or comfort they will derive from stock instruments such as green bonds that aid Peru in becoming a low carbon economy. The perception of conservation bias was detected; that is, people trust their own investment views more than those of financial analysts, feeling comfortable in their decisions to invest in instruments such as green bonds for the sustainability of environmental assets. Loss aversion is validated in the decision to invest a sizeable monetary amount (100 thousand dollars) in a single financial instrument, whereby most investors choose low-risk instruments despite the feeling of safety or confidence to invest in stocks. The perception that investing in green bonds improves environmental quality is explained by the variables of "green bonds rating" and “feeling of comfort (satisfaction) investing in instruments such as green bonds.” Finally, a “nudge” was given via the question “how satisfied or comfortable would you feel investing in instruments such as green bonds for Peru to become a low carbon economy,” to which those involved responded positively.

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African Economic Integration Development in Technological Transformation: Accessing the Importance of Ethical Leadership for Policy Implementation in SADC

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Abstract: Most African states have suffered from severe macroeconomic disequilibria, foreign debt service burdens, and over-valued currencies. The lack of ethical leadership on policy implementation has led most Africa countries to linger highly behind in terms of development. Many countries are reliant on agriculture and yet suffer from high levels of unemployment and food insecurity on the continent. In these situations, it is logical for one to expect the full integration of Africa in terms of trade and migration, using the Southern African sub-regional integration as a case study. This study looks at the Southern African economic integration development and the importance of having ethical leadership for policy implementation. Qualitatively, this paper collected data and analysis them based on content, using secondary sources from different domains. The neo-Functionalist theory was applied and findings show that there is a failure to meet set targets in the SADC plan which has established a bad precedent for the sub-regions for African development, the failure is seen as lacking ethical leadership. It recommends that there is a need for African states to improve its infrastructure, recognise the capacity of the private sector to generate wealth and induce development, with open economies to member's states.

Keywords: *Economic, development, ethical leadership, insecurity, integration, technologies, 4IR.*

1. Introduction

The lack of ethical leadership on policy implementation has led most Africa countries to linger highly behind in terms of development. Many countries are reliant on agriculture and yet suffer from high levels of unemployment and food insecurity on the continent. In these situations, it is logical for one to expect the full integration of Africa in terms of trade and migration, using the Southern African sub-regional integration as a case study. This study looks at the Southern African economic integration development and the importance of having ethical leadership for policy implementation. Regional integration in Africa as a means of encouraging trade and securing economies of scale. One of the most prominent integration scholars like Ernst Haas (1961) defined integration as "the process whereby political actors in several distinct national settings are persuaded to shift their loyalties, expectations and political activities toward a new centre". Enaifoghe (2019), whose "institutions possess or demand jurisdiction over pre-existing national states, and the result of a process of political integration is a new political community, superimposed over the pre-existing ones". The United Nations Department of Economic and Social Affairs Division for Sustainable Development (2011), reports that the "World Summit on Sustainable Development" (WSSD) set a target in the year 2002.

For countries to take abrupt steps to development in the "formulation and elaboration of NSSDs and initiate their implementation by 2005", which was cutting-edge in a sequence of such calls. No doubt most countries are increasingly smearing the principles of "multi-stakeholder participation" and ownership, sound leadership and good administration of governance, ethics and value in all aspect of governance. Given the significant role of managing the development and "planning processes and ethical leadership" in providing the socio-economic support require to foster development through the integration of Africa, continentally. Integrating Africa continent into economic integration is seen to ultimately become the key to achieving higher economic development. Regional and economic integration is generally "when a group of countries get to develop a formal understanding or agreement through treaties, stating how they will conduct trade with each other" (Enaifoghe & Asuelime, 2017), the idea is usually fostered to strengthen both economic and political relationships. Regional integration has "manifested itself historically in Africa, America and Europe as a bureaucratic effort to facilitate political unification and expansion of capitalism" (Chingono & Nakana, 2008). This article looks at the importance of ethical leadership for policy implementation of the Southern African Sub-Regional Integration Development.

2. Methodology

This study used content data analysis method, this method allows researchers to study, and thereby make sense of written documents, which may be available either in the public or private domain (Mogalakwe, 2006). The criteria for selecting documents in content analysis, or for focusing on particular literature, reflects the issues on which the researchers seek evidence.' Data were accessed through secondary sources, which then include the stuffing of internet sources, books, reports, periodicals, journal, and official documents on the African integration agenda integration policy implementation. Over 70 literature were sourced in the different domain including Google scholars and Scorpius on the subject and analysing them based on content and relevance.

3. Literature Consideration

The Position of SADC in African Regional Integration Polity: Despite the strength of the various arguments, virtually all regional integration efforts in sub-Saharan Africa, including the Southern Africa integration to date have failed to achieve their full objectives (Enaifoghe, 2019). The reasons for "the lack of success in the past and whether the current momentum for new regional initiatives" will address these problems are discussed in this study. In the perception of "African regionalism", the "Economic Commission for Africa (ECA) became the champion of regional (Enaifoghe, 2019). This paper contributes to the discourse on economic integration and African ethical development through regional growth and policy implementation, while exploring the lack of success and the challenges faced by the SADC integration in the Southern African sub-region and made recommendations for a way forward to achieving African regional development. The launch of "regional economic blocs not only strengthens member countries' positions on the global political landscape and bargaining power on international issues but also enables countries to collectively grapple with the region's economic progress" (Enaifoghe & Adetiba, 2018). Khandelwal (2004), view regional integration in Africa as a means of encouraging trade and securing economies of scale. The discourses on the African regional economic integration development.

It is perhaps the earliest scholars of integration Balassa (1961), viewed "economic integration to be both a process and a State of affairs". As a State of affairs," it is the absence of various forms of discrimination between national economies" by removing or lowering every form of trade barriers, like tax and exercise duties. As a process, Balassa (1961), states that it includes the various "measures designed to abolish discrimination between economic units belonging to different nation-states, thus leading to the formation of a political union". In the above, therefore, following the end of colonialism in the Southern African sub-region, Enaifoghe & Adetiba (2018) underscores the significance that the SADC has undergone a comprehensive rearrangement with South Africa as the frontrunner, as opposed to its pre-1994 integration stance. They also added that "African regional cooperation has nevertheless been revitalised in several respects as a result of the two major events that began at the beginning of the 1990s" (Enaifoghe, Asuelime & Adetiba, 2017). This includes the "abolition of the apartheid regime in South Africa and the subsequent stabilisation of political and economic relations in the sub-region of Southern Africa" (Enaifoghe & Adetiba, 2018). In 2019, the African Union Organization reports that the renewed interest in regional integration as Africa's overall development strategy has led the majority of policymakers.

Enabled intellectuals to formulate a collection of plans and policies that will benefit most from enhanced cooperation in Africa (AU, 2019). More so, in concrete relations, "this strategic orientation has resulted in the proliferation of continental agreements and programs, such as the Abuja Treaty and the Agenda 2063" (Muzee & Enaifoghe, 2019). However, the pan-African agenda of integration and regional efforts are lauded to have made momentous progress in the areas of trade, peace and security, air transport, the free movement of people and goods, and in emerging areas such as the environment and the climate through the various initiatives. According to the report compiled by the AU (2019), the momentous aforesaid developments, the successes in the African regional integration remains highly mixed given the anticipated outcomes and the enormous prospective of the continent. Its further states that; "Indeed, the African integration process remains subject to real obstacles relating to the quality of infrastructures, customs and administrative policies, the narrowness of the markets, the weakness of purchasing power, the poverty of capital markets, the lack of a diversified product base and the absence of mechanisms for coordinating and harmonizing

regional policies." - AU (2019). The African Union report for 2019 outlined the fact that "fifty-five (55) years after the creation of the Organization of African Unity (OAU). Given the evolution of the international context characterized by new dynamics and mutations in the various regional groupings across the world - such as the exit of Great Britain from the European Union (Brexit) as well as the ongoing revisions of the North American Free Trade Agreement (NAFTA) – it is high time to reflect on the status of regional integration in Africa" (AU, 2019). In this regard, Muzee & Enaifoghe, 2019), argued that the reverberations or impacts of the current globalization together with "a rise in nationalism also nurture concerns" in the most integrated regions outside the continent of Africa. Consequently, several expressions of opinions have risen to "interrogate the concept of integration in its, most recognized classical form" (Enaifoghe, 2019). The scholar states that this is given the "new world order focused on the globalisation of the economy that has so far been promoted by most countries of the world, especially in Europe, has finally given way to a desire to withdraw into oneself-Brexit" (Enaifoghe, 2019). In challenging this context, the idea of regional integration with organisational ethics and leadership and its approaches and significance, it would be advisable to reconsider African integration, to value its role, and then to reaffirm its African vision through the description of contextualised directions that can fuse and consolidate current progress.

This stops the dwindling effort of nationalism to the detriment of regional integration. Integration was to be "completed by the establishment of the African Economic Community (AEC) following a six-step, 34-year, sequential strategy" (Enaifoghe, 2019). Enaifoghe, Adetiba & Asuelime (2017), argued that "the labour division between the African Union Commission (AUC), the Regional Economic Communities (RECs) and the member states the implementation of the integration agendas as well as the rationalisation and progress of the RECs in a variable pace define the environment of African integration". Besides, this atmosphere stays complex, given the dissimilar interests of African integration actors as it is substantial to note that States are still reluctant to abandon their sovereignty (like D. R. Congo). According to Enaifoghe, Adetiba & Asuelime, (2017), the consequence of such action has considerably hampered both the African regional integration process and that of the Southern Africa sub-regional, integration as a result of the insecurities that they might lose some level power of their national border. McCarthy (1995) noted that "the Lagos Plan was followed up in 1991 by the Abuja Treaty, re-affirming the commitment of the OAU's Heads of State to an integrated African economy". As argued by McLeod (2011), "regional integration has been credited with providing.

An important step towards a wider global involvement and has exhibited the potential to promote economic growth and reduce poverty through increased exports of domestic goods. It has been envisaged that integration has the potential to promote growth and reduce poverty through the increase of exports of domestic goods." Consequently, Matthews (2003) argued that "several regional groupings have long mushroomed in the post-war era across the globe, notably with the European Union (EU) and the Association of Southeast Asian Nations (ASEAN)." The existing African integration arrangements can be divided into two large groups. Those that were part of the Lagos Action Plan (LPA) adopted in April 1980, and those that were either in place or originated outside the LPA. The Lagos Plan has been promoted by the Economic Commission for Africa and launched in a special initiative by the Organisation of African Unity (Matthews, 2003). The African regional integration organisation envisaged having three regional arrangements that are aimed at creating separate but "convergent and over-arching integration arrangements" in the sub-Saharan sub-regions. The West Africa sub-region would function as the "Economic Community of West African States (ECOWAS)' that pre-dated the Lagos Plan". Furthermore, a Preferential Trade Area (PTA) that was established in 1981 consequently.

"Cover the countries of East and Southern Africa, which was eventually replaced in 1993 by the Common Market for Eastern and Southern Africa (COMESA)" (Enaifoghe & Adetiba, 2018), and (Matthew, 2003). The third regional arrangement is the "Central Africa the treaty of the Economic Community of Central African States (ECCAS)" that was approved in 1983, yet to be fully ratified. The last but not the least is arrangement of the Arab Maghreb Union (AMU) propelled in North Africa, these arrangements were expected to lead to an all-African common market by the year 2025. In Africa, several regional groups have emerged over the recent time, explicitly, "the Economic Community of West African States (ECOWAS). The East African Community (EAC), the Common Market for East and Southern Africa (COMESA), as well as the 'Southern African Development Community' (SADC)", which is the focus of this paper. African Heads of State met at Sirte and launched the African Union to replace the Organisation of African Unity (OAU) with the African Union (AU) in

April 2001. Since the first arrangement by the African regional integration, the second group of integration engagements has developed outside the Lagos Plan of Action (LPA). Matthews (2003) point out that some "countries in this region are also joined with countries in the Horn of Africa in the Intergovernmental Authority on Development (IGAD).

Despite the multiplicity of groupings, SSA regional groupings have not been very effective". Among the reasons for this could be cited to be the following: "intra-regional trade in Africa as a share of total foreign trade has traditionally been low compared to other regions. Figures in the early 1990s suggest that the proportion was only 8.4 per cent in 1993 compared with Western Europe (69.9 per cent), Asia (49.7 per cent), North America (33 per cent) and Latin America (19.4 per cent) (WTO source, quoted in McCarthy, 1995). However, recorded trade underestimates the volume of actual trade and, if a proper account was taken of the size of informal trade, the African numbers would not look so out of line. Furthermore, there is evidence that the importance of intra-regional trade has been steadily increasing in recent years" FAO (2002). Matthews (2003) argued that Most African countries may have experienced significant macroeconomic imbalances, foreign debt service pressures, overvalued "currencies, lack of trade finance, and a narrow tax base, with customs duties a major source of revenue. Protecting import substitution techniques implemented by a variety of countries since their independence" has resulted in a host of protocols hampering "trade such as licensing, administrative foreign exchange allocation, special taxes for acquiring foreign exchange", and the advance import deposits among other components.

Consequently, the socio-economic context in Africa generally has been unfavourable to the development of the regional commitments likewise in the Southern Africa sub-region. This was confirmed by Asante (1997: 17), who said that "the design of African integration schemes around inward-looking industrialization meant that the economic costs of participation for member states are often immediate and concrete. In the form of lower tariff revenues and greater import competition", while the economic welfare profits are said to be long-term and further uncertain and further often unevenly disseminated among member states. In the Southern African sub-region with it inception of the SADC organisation has been guided by a desire to form a "regional integration bloc that will link regional economies, then strengthen the region's economic performance, and enhance the region's political stability" (SADC, 2012). The organisation was initially established in the year 1980 as the "Southern African Coordination Conference" (SADCC) (Takirambudde, 1999), the party aimed not only to "reduce economic dependency on the then apartheid South Africa" (Hancock, 2010). To forge economic ties to establish genuine and egalitarian regional integration through the mobilisation of capital for the promotion of interstate and regional policies (Ahmed, 2008).

Following the political independence of some of the Southern African Member States, the region agreed to "revise the mandate of the regional body by concentrating more on economic and political problems in the post-colonial era" (Draper & Kalaba, 2006). The creation of the SADC in 1992 was therefore seen as a continuation of efforts to improve collective self-reliance in the Southern African region" (Enaifoghe, Asuelime & Adetiba, 2017). On the other hand, there can be no economic growth without political stability. Thus the current revamped regional body has integrated policy concerns within its main mandate. Mutisi (2016), claims that "political rather than economic considerations set in motion the process of regionalization in Southern Africa". Enaifoghe (2019), articulated that the "regional body recognised that economic growth can only be achieved by concerted effort; thus the Member States saw regional integration as a gateway to economic development within the region". While the search for "the SADC regional bloc to achieve these goals has resulted in overambitious programmes and estimates being placed in place" (Mutisi, 2016; Enaifoghe, 2019). The SADC Treaty, therefore, put the SADC bloc at the centre of efforts to achieve regional economic integration, independence and social justice for the people of Southern Africa.

The commonalities, according to Chauvin & Gaulier (2002), inform "the search of the region for, collective peace and sustainable growth, both of which can be accomplished by economic regional integration." Bhagwati (2008), articulated that the SADC's operations "towards regional integration have been marked by the presentation of overambitious programmes", despite the apparent cracks "within the regional grouping". The SADC's guiding principles were to minimise economic dependency initially "on apartheid South Africa, but later on other economies outside the SADC region" (Enaifoghe & Adetiba, 2018). The member states have envisaged the building of economic ties as a means of achieving genuine and inclusive regional integration.

However, the leaders appear to lack the ethical leadership to accomplish this goal. The quest to develop economic relations motivated the desire to mobilise capital to promote and enforce "governmental, inter-state and regional policies" in the SADC sub-region. In addition to these visions, the SADC Member States have committed themselves to "collaboration" to ensure international cooperation. This is so that it can challenge and know the way forward in understanding and developing African ethical reflections.

Influence of the Global-View on Africa Organisational Ethical Development: Most Africa society has been confronted with historic challenges since the establishment of the new millennium. This needs the "visions of the future so attractive, inspiring and compelling that people will shift from their current mindset of focussing on managing crises" to predicting the future (Kandula, 2008). Looking at the peripheral challenges and the transformations that are currently happening in various "organizations' environment", it is crucial that Africa leaders invoke a survival strategy, so that the future could be well catered for. Keeping this in mind, it is envisioned by Hammel & Prahlad (1994), that the "future position of organizational ethics and leadership is found in the intersection of changes in technology, lifestyle, regulation, demographics and geopolitics". With new developments that are emerging in the global politics and the economy, the main players are shifting (Gupta, 1994), besides, history has shown that the process of transformation is inherent in the development of mankind. Over and over again (Kher, 1997), looking at the ever-developing technology and globalisation in the world today. Combined with rapid obsolescence, the anticipation of more value-added organisational "ethics and leadership in Africa" is nonetheless overwhelming (Mathooko, 2013).

Also with the "new generation and the band of young leaders. Africa has been seen as a continent of complexities, with a large range of climate, topography, history, peoples and languages" (Enaifoghe, 2019). This complexity is likewise "compounded" by ethnical division, tribal wars, self-interest and corrupt leadership, the disparity in wealth, organized corruption and the enormous unemployment rate in the continent. The need for a comprehensive understanding of "the diverse landscape" of Africa required if its assessment in leadership and structural or the organizational ethics must be thoroughly discussed and recognised (Mathooko (2013). The developing leadership styles with its organizational leadership ethics in Africa have been prejudiced by the influence of western culture and ideologies that define the lives of Africans in Africa, in relation to their existence and relationship with each other. The "leadership styles and organizational ethics" (Mathooko, 2013), in Africa, are also swayed by the obvious resources that are available and their management by a few individuals. Despite the fact prudently acclimatizing to the external "forces of whose ethics" and ideologies fail to resolve "the leadership problems of corruption" in Africa.

The above is to simply state that Africans often tend to copy their leadership, moral practices and reflections from a background that does not apply to them, just because they have intermingled in this environment for many years. The foreign environment is composed of a "complex whole, with a just inter-relationship vis-à-vis social relations" and environmental events in a nutshell (Mathooko, 2013). Discussing leadership style in Africa context, the organizational ethics is said to revolve around certain principles either "written and/or unwritten, the ethical values, ideologies, rules, principles and standards, that may be pinched from the harmonious or peaceful coexistence with the biosphere" (Mathooko, 2013). Subsequently, how these fundamentals are applied to human social realities is dictated by the method of leadership and the ethical rationale of the leaders. Generally, Africa has a broad array of "complexities which are compounded" by ethnicity, wealth and social inequalities, and the high level of unemployment among others. However, to understand and attempt to address the current problem associated with Africa leadership and organizational ethics, there is need for a broad grasp of the complex landscape in Africa, through a three-dimensional unscrambling of the existence of its people. African global ethics (*Afroglobal ethics*) has advanced over a period which unifies its "organizations and leadership.

Since it is defined to form part of human social life and practices", subconsciously or "unconsciously by the people, while transforming from one activity to another through intergenerational changes (Mathooko, 2013). In the global world today, chances are fast transforming the social environment with science and technological advancement, globalization, and liberalization in which organizations function. In such a setting, it is expected that a true leader to be flexible and not rigid, having the ability to use diverse leadership styles as the situation requires it and makes an effective leader. Having said that, only leaders with the realistic outlook live to stimulate lives, they can live with a true cause that they are willing to defend and embrace

organizational ethics and followed by a leadership style that will stand. The leadership and organizational ethics are still in its infancy stage in Africa, despite being the cradle of human existence, and even with its "new generation of young leaders" today. The potential stance of corporate ethics and leadership trends in Africa needs to be unravelled in the light of recent developments in "technology, demographics, lifestyle and geopolitics" drifts evolving in the global economy and polity. The way globalization is taking the world by storm right now, we do not think there is any country that can afford to ignore it, as interdependence has become the standard norm of a new society.

The understanding African view of organizational ethics also revolves around systems that is ethical. Strategic procedures, ethical values, moralities, rules and benchmarks, that ultimately drawn from the peaceful coexistence with the environment. Developing African view of organizational ethics in the global system developments in the development, defence and security of human life, including the conservation of human honour, the protection of the dignity of all human beings and the protection of nature and multiplicity, with a dedication to "guiding social and moral behaviour. These principles are enshrined in the Universal Declaration on Bioethics and Human Rights" (UNESCO, 2005). The viewpoints and attitudes of the African civilization that touch on ethical behaviour, according to Mathooko (2013), no systematic exploration and explanation have yet been given and thus there is a real need for a comprehensive and extensive study and interpretation. He further points out that to do this, the three-dimensional (3D: history, present and future) scope of governance and organisational ethics must be unravelled and interpreted holistically through the contextualization of the international ethical normative instruments.

4. Organizational Ethical Leadership in Erratic Eras and Technological Transformation

The functioning setting of organizations is transforming itself very quickly in Africa, occasioning the scarcity of true and outstanding leadership. However, in the face of the diverse developing concerns of ethical flora such as perversion, ethnicity, corruption and Xenophobia/Afrophobia, among others, it is imperative for Africa to institutes the idea of "checks and balances in governance". The current advancement of "globalization, liberalization, climate, science and technological changes and progress it forced on organizations", is to redefine their arrangements, methods, and developments (Kandula, 2008), have undoubtedly influenced the leadership for organizational ethics. The contemporary world of today has become interdependently integrated like never before as a global community, thereby making globalization to be one of the most prevailing and pervasive influences on the working environment, communities, and people's social lives (Mathooko, 2013). Globalization, as it is today, seems to be irrevocably ongoing to counter the prevailing local, regional, national, legal and, seemingly, cultural boundaries that have been blocking the material, ideological, and social transformation (Bina, 1997). That built a complex society with a series of new prospects and ensuing problems of widening social inequalities, this however candidly applies.

When one deliberates on the availability of health services and types of machinery with regards to technologies. Besides, numerous other concerns exist in Africa which raises the concern for deep ethical fear and prominence for the global community that is diverse within various cultures as a result of globalisation. Many countries, including Africa, have liberalised their economies in the form of trade deregulation and tariff cuts to improve the productivity of their economies. The liberalisation of economies has "strong effect on health services, particularly where cheap or fake drugs and equipment are readily available to patients and local medical practitioners" (Enaifoghe, 2019). Therefore, if strict regulations are not in place, the ethical stature will become questionable and examined. Due to the increasing globalization, the world is confronted with a high level of turnover in terms of technologies that are related to "health/medicine and other disciplines". Not forgetting the fourth industrial revolution (4IR). Countries are further observing a "compression of the time scale on which new technology" is implemented within a limited period between discovery and implementation (Keyes, 1995; Mathooko, 2013). And the speed of innovation is extremely high. This rapidity of technological change, according to Mathooko (2013), continues to "challenge all organisational strategies and affects all human lives".

The accessibility of capability such as "telemedicine is limited in developing countries" as a result of low per capita income and technical appreciation and advancement. Technological change and transformation are "sine qua non not only for the survival of an organization" but also for the preservation of its "ethics,

competitive edge" and development (Kandula, 2008). The economic situations in most countries particularly in Africa. Usually constrain individuals to reflect or reason inversely, which is established on the amount of the predicament and their present positions. The ethical thoughts could be directed positively or negatively in such an environment, towards justifications of such experiences (Mathooko, 2013). The paradigm of ethical progress accentuates on the: intensification of "good and the creation of greatest good for the greatest number, while at the same time embracing peace, good health, abundance and progress in all their forms" (Enaifoghe, 2019). Based on the "African community structure, it should also be understood that African ethics is weighed on duty and not on rights, thus placing a great deal of emphasis on human welfare" (Mathooko, 2013). It is required of every individual to show "concern for the interests of others" as a moral duty, stemming to "African morality duties" undermining rights, and not contrary.

The ethical understanding is being defied by the insight of peoples' rights and the advent of the universal, human rights sets. Another impact "on leadership and organizational ethics in African governance is supererogation, which is an act beyond the call of duty, an act over and above what a person is required to do as a moral agent" (Mathooko, 2013). This suggests that the moral sensitivities of Africans ought to be extended to all people, notwithstanding of who they are, where they are from, their race, colour, their cultures or even the societies they came from - humankind. The same ideal ethical value should be extended and practised at all sphere of government, instead of playing ethnic politics. Neo-functionalism theory originated sometime in the mid-1950s, according to Enaifoghe & Adetiba (2018), the "theory of regional integration is a mechanism by which countries eliminate barriers to free trade.

Theoretical Explanation of Afroglobal for Neo-Functionalist Approach: This section gives a conceptual explanation of how the theory of Neo-functionalism can be applied in the context of Southern Africa, and how it should be extended to African regional integration, and how can it help improve the current state of the continent's development. Though it is a European theory. However, thinking Afroglobally is believed to help Africa to develop its regional development if applied ethically and politically correct. The neo-functionalist theory, Enaifoghe & Adetiba (2018), states that at "the centre of international relations is the nation-state and because nations have been affected by many transnational phenomena, there is the need for state actors, political scientists as well as a humanist". To "formulate the means to smoothen relationship among nations while helping to establish a long-lasting peace" (Enaifoghe, 2019). The theory of regional integration was "the brainchild of the functionalists" (Enaifoghe & Adetiba, 2018). The functionalist approach according to B Behr (2010), articulated that revise "nations maximize their [economic and political] interest owing to the assistance of international organizations based on functional rather than territorial principles". In this study, therefore, from the functionalist's approach, the theory can be "explained from two perspectives; political and economic" points of view that fall within the scope of this paper.

Enaifoghe & Adetiba (2018), claims, however, that regional integration actually cannot happen if the countries concerned are not physically interconnected. Neo-functionalism has helped explain Western Europe's integration theory". The theory is closely related to the methods of unification of the founding fathers. Jean Monnet's method of integration was intended for specific sectors in the expectation that spillover effects can be realised to further the progress of integration, but early neo-functional measures have also been found. Schmitter (2005) argues that the procedures of Jean Monnet for a mutual appreciation and 'piecemeal issues' solving is embedded like neo-functionalism'. While Rosamond stated that "Neo-functionalism can be read at one level as a theory provoked entirely by the interactive activity among the original six member states" (2000). Further down, Eilstrup-Sangiovanni (2006) argues that the "neo-functionalism is the result of a behavioural change in American social science", which also focuses on structural forms, actions and integration processes (2006). However, "at the time of the 'empty chair' crisis, the neo-functionalism theory appeared too incapable of describing the direction of integration in general because of its extreme Eurocentric existence" (Enaifoghe & Adetiba, 2018). The consequence of the integration process is in the opinion of the functionalists, where a separate institutional entity executes its tasks as its effects. Whereas for the neo-functionalist, everything is moved to a new core as a result of the "new political culture" that emerges (Haas, 1958).

Jean Monnet saw "increased European integration as the most important originator of a stable Europe. In the course of the centre, the importance of nationalism and the national state" to neo-functionalism would

decrease supranational sate. Noting the fact that there are three instruments that neo-functionalists projected, it is a driving force of integration process which are very fundamental as positive spillover, "transfer of domestic alliances", technocratic automaticity. Furthermore, the Neo-functionalism theory has Positive spillover on integration, According to Wallace (2004) "positive spillover" is when "the sector such as coal and steel governed by the central institutions creates pressure so that the neighbouring areas of policy such as taxation and wages are influenced by integration". The model of spillover is described as "the process of generating new political goals" (Cini, 2004). The effect of neo-functionalism theory, it can transfer domestic alliances. Applying the theory, in the process of integration the different national interest groups, associations and elites will shift their loyalty away from national institutions toward the supranational European institution. And this can be experienced in African regional integration as well. The simple explanation to this is that at the national level, the various group will acknowledge the new "institution as a better instrument by which they can achieve a better result in their interests rather than through national institutions" (Enaifoghe & Adetiba, 2018).

According to Cini (2004), this will lead to "an establishment of elite groups holding pan-European ideas and norms and they will try to persuade national elites to turn their loyalties to the supranational" co-operation. The power of neo-functionalism theory on socio-economic development, according to Enaifoghe & Adetiba (2018), is believing that the development of the neo-functionalism theory can automatically lead to the emergence of 'dramatic political actors' also, changes in international systems may affect the regional cooperation". The scholar like Cini (2004), believes that *the concepts of the spillover can also develop further to 'spill-around' and 'spill-back'. Nevertheless, neo-functionalism revealed the logic of the development of Europe in the post-war uniting. The theory is still very useful in theorizing although very limited in its capability (Haas, 1958).* Schmitter (2004), argues that *neo-functionalism* "provides building blocks for structures and that it is useful for reformulation", and further points out that this could be due to the propensity towards self-criticization of its actors. The scholar also argues that the theory affects amplification and broadening as it contributes to conflicts, inconsistencies and demands that can be overcome by advance integration (2004).

In the African sense, as the centre of neo-functionalism is the use of the idea of 'spill-over,' the mechanism poses situations when governments take an initial decision to position "certain sector under the authority of central institutions, which generates pressure to expand the authority of institutions to neighbouring policy areas such as currency exchange rates, taxation and wages". This fundamental claim meant that regional integration in Africa would become self-sustaining, and as a result. 'Spill-Over' would cause the economic and political dynamics of further cooperation. The theory foresaw the *Logic of Diversity*, which 'sets limits to the degree at which the 'spill-over' mechanism can restrict the freedom of action of governments. The logic of diversity means that losses on critical issues are not compensated for by gains on other issues. Integration, guided by national governments, is often thought to be focused on "domestic political and economic issues of the day" and thus the theory denies the idea of spillover effect that Neo-functionalism implies. It opposes the notion that supranational entities are at the same degree (in terms of political influence) as national governments.

5. Conclusion and Recommendations

This article highlighted the ethical leadership needed to promote African regional integration through the sub-regional implementation of policies. As Africa has the potential to develop its continent looking at its fastest rate of demographic growth in the world. The call for African Development and good governance strategies for both regional and continental development is truly paramount in the 21st century as stated above. Looked at African development challenges concerning the various calls and the target set by a different international organisation on the African development process. While most countries are increasingly smearing the principles of "multi-stakeholder participation and ownership, sound leadership and good administration of governance, ethics and value in all aspect of governance, the accountability for states planning and finance have subsequently played key roles in the NSSD course of development. Africa should create strategic development planning processes that will provide.

The socio-economic support requires to foster development in the continent through the integration of Africa continentally. This article contributes to the discourse on African ethical values in governance and regional

development, while it unpacked some of the challenges faced by the SADC sub-regional integration, due to lack insecurities among member states to let go of some their sovereignty to integrate and the moral values to human ethics. The polity of Southern African integration arrangement in the sub-region is seen to be the "ideal for regional economic integration" given the fact that it is characterised by many countries with similar "small or poor economies" except South Africa. As a way for Policy Recommendation, an asymmetric integration would lead to de-industrialisation, thus locking less developed economy into structural stagnation. Further, SADC needs to develop mechanisms to deal with the security challenges it faces, as there is a link between security and development.

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Determinants of Farmers' Participation in the Management of Smallholder Irrigation Schemes in Kwazulu-Natal Province, South Africa

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Abstract: Participatory Irrigation Management is an important concept in the management of water resources. It fosters collective responsibility and rule compliance, the lack of which creates a weak environment for sustainable water use. This study adopted Principal Components Analysis and Structural Equation Modelling to evaluate the determinants of farmer's participation in the management of four smallholder irrigations schemes in KwaZulu-Natal Province, South Africa. The selected schemes, Ndumo, Makhathini Flats, Mooi River and Tugela Ferry, are representative of the general management and farmer activities in smallholder irrigation schemes in the country. The study considered household data from 341 irrigators and found that those who participated in regulation and control management activities of SIS also participate in information sharing activities. The results show that agricultural training, land tenure security, credit access and co-operative membership positively influence farmers' participation in decision making. Additionally, irrigation water adequacy positively influences farmer's participation in making financial contributions in the schemes. The study recommends that better land agreements that, would improve the security of tenure should be put in place to foster farmer participation. Farmers should receive agricultural and irrigation training to increase the likelihood of participating in the management of irrigation schemes.

Keywords: *Farmer participation in management; Smallholder Irrigation Schemes; Structural Equation Modelling; Participation Index; KwaZulu-Natal Province.*

1. Introduction

An irrigation scheme is defined as "an agricultural project involving multiple holdings that depend on a shared distribution system for access to irrigation water and, in some cases, on shared water storage or diversion facility. In the South African context, a smallholder irrigation scheme (SIS) is defined as a multi-farmer irrigation project larger than five hectares in size, for the use of plot holders in rural or resource-poor areas (Perret & Geyser, 2007). SIS plays a key role in ensuring food security, particularly in rural areas where most households rely on agriculture for food production (Muchara et al., 2014; Sinyolo et al., 2014). For this reason, the government has made efforts to include farmers in the management of SIS, through the adoption of the Irrigation Management Transfer (IMT) programme and the Participatory Irrigation Management (PIM) (Van Averbeke, 2012) which are concepts that are focussed on involving the farmers in the management of scheme (ibid, 2012). The schemes have struggled to keep afloat despite the decentralization of their management (Cousins, 2013). Furthermore, weak institutions, lack of information, low levels of stakeholder participation, are problems that persist in SIS (Perrett, 2002; Muchara et al., 2014; Denby et al., 2016).

These problems, primarily related to the governance of the schemes, warrant the exploration of governance and other key associated factors in determining farmer participation in scheme management. In recent decades, it has been widely accepted that public participation, that is, the involvement of individual and/or organised public members in the decision-making processes improves natural resource management by incorporating public knowledge, values, and perspectives (Özerol, 2012; Muchara et al., 2014). In participation, stakeholders influence policy formulation and management decisions affecting their communities and establish a sense of ownership (Khalkheili & Zamani, 2009). Although the objectives of farmer participation vary between areas, they are generally directed at improving the operation and maintenance of the irrigation system, thus increasing the efficiency of resource use. Due to farmers being the major users of irrigation systems (Özerol, 2013), their collective action is required to ensure scheme

sustainability (Muchara et al., 2014; Özerol, 2013). This includes, but is not limited to, farmers establishing institutions for sustainable water management, hence the adoption of PIM in South Africa. PIM is a philosophy centred on involving farmers or water users[1] in the operation, management, and maintenance of irrigation systems (Kulkarni & Tyagi, 2012).

This translates to the farmer being a "water manager" (Gomo et al., 2014). It refers to farmers' involvement in policy and decision making, planning, designing, construction and supervision, operation, and maintenance (O and M) and performance evaluation of irrigation systems. Farmers involved in the management of SIS, build a sense of ownership, achieve collective action and benefit from improved rule compliance (Ostrom, 1990; Özerol, 2012). Participation enables water users to learn from each other and ascertain the impacts of their individual and collective actions on resource sustainability. It also validates that users have a stake and a responsibility on the state and sustainability of the resource and increases the likelihood of water users adhering to the rules. In terms of institutions, it enables farmers to realize and understand the consequences of breaking the rules, and the benefits of complying with them (Muchara et al., 2014). It improves compliance in that water users can "keep an eye" on each other's actions and that everyone adheres to collective commitments, such as attending meetings (Ostrom, 1999; Özerol, 2012; Muchara et al., 2014). The lack of farmer participation in the management of SIS has the potential of destabilizing the environment for sustainable water use and could lead to what Hardin (1968) termed the "tragedy of the commons".

The "tragedy of the commons" is an economic ideology based on individuals maximizing private utility from a given resource. In this case, water-users abstract water from a shared-resource system for their self-interest, while depleting or spoiling that resource through their unsustainable use. The lack of participation in management adversely affects positive collective action and subsequently, the sustainable use of a resource. Literature highlights several factors that affect farmer participation in the management of SIS (Hayami & Kikuchi, 1999; Meinzen-Dick et al., 2002; Muchara et al., 2014). These factors may include geographical area, cultural norms, and institutional set-ups, as well as those that are social and economic. Meinzen-Dick et al. (2002) highlight that the presence of organizations such as co-operatives can play a unifying role in fostering farmer participation. Evidence from India showed that the presence of social capital in the form of co-operatives, temples and other organizations tend to make farmers participate more in canal irrigation schemes. Meinzen-Dick et al. (2002) showed that the involvement of traditional leaders or trusted individuals also reduced the transaction costs of organizing people and makes users more willing to participate in collective action. Additionally, good relationships between users and other involved stakeholders.

Such as extension officers, have been shown to improve farmer participation (Khalkheili & Zamani, 2009). Hayami & Kikuchi (1999) noted that heterogeneity among users might affect farmer participation. Farmers from different villages that share a resource may be unwilling to work together, and cooperation may be difficult. In comparison, people from the same community may generally be willing to work together, which in turn makes rule enforcement easy. A study in the Greek agri-environmental schemes suggested that agricultural training of the farmers, farm economic performance, participation by neighbours or relatives, age, and basic education of farmer influence farmer participation (Damianos & Giannakopoulos, 2002). Other factors include farm labour, family size and income, which all positively influence farmer participation in irrigation management. Families that have a large, irrigated portion of land are more likely to participate (Damianos & Giannakopoulos, 2002; Karlı et al., 2006; Muchara et al., 2014). Furthermore, a large family has more labour and has a higher likelihood to attend meetings and other participatory activities (Khalkheili & Zamani, 2009). Given its broad complex nature, participation in SIS has been analysed using various methods (Khalkheili & Zamani, 2009; Fischer & Qaim, 2012; Muchara et al., 2014; Adekunle et al., 2015).

Khalkheili & Zamani (2009) evaluated the relationship between farmer participation in irrigation management and selected independent variables in the Doroodzan Dam Irrigation Network, Iran, using a Spearman correlation test. The study found that farmer attitudes toward participation in irrigation

[1]The words "farmers" and "water-user" are used interchangeably throughout the manuscript.

management had the highest correlation with farmers' active participation. The study also found a high correlation between irrigated farm size and farmer participation, and that on-going support and follow-up from government entities encourage farmer participation. Muchara et al. (2014) used a Tobit regression model to evaluate the factors affecting farmer participation in irrigation water management in the Mooi River Irrigation Scheme, South Africa. The study found that financial contribution towards infrastructure maintenance, income from irrigation farming, frequency of attending irrigation management meetings, training in irrigation management determine farmer participation in collective activities. In some cases, binary choice models such as the Probit model are adopted to analyse the determinants of participation (Fischer & Qaim, 2012; Adekunle et al., 2015), this dichotomous variable is used when participation is considered a choice, where farmers participate or not. Adekunle et al. (2015) used the logistic regression model to identify factors that affect participation.

In the Lower Niger River Basin Development Authority in Nigeria. The study found that knowledge of irrigation techniques, water supply in the dry season, as well as relationships between the authorities and irrigators influence farmer participation. Participation, especially in irrigation scheme management, is important as it fosters collective responsibility, rule compliance, and importantly, positively influences scheme and farmer performance (Khalkheili & Zamani, 2009; Özerol, 2012; Muchara et al., 2014). As such, this study seeks to evaluate the determinants of farmers' participation in the management of four irrigation schemes in KwaZulu-Natal, representative of an average scheme in South Africa. The operational status of selected SIS across South Africa is presented in Table 1. The study considers four facets of management, namely regulation and control, administration, information sharing and financial contributions. The analysis in this study differs from other participation studies as firstly it considers the relationships between various management activities in SIS. These relationships are vital in framing policy interventions in irrigation management, as well as informing which management activities can be improved in SIS. Secondly, it considers the determinants of farmers' participation in management. The research questions addressed are: i) Is there a relationship between management activities in which farmers participate in SIS and are the management activities divergent? ii) What are the determinants of farmers' participation in the management of SIS. The paper is composed of five main sections.

Table 1: Operational Status of Selected Smallholder Irrigation Schemes in South Africa

Irrigation Scheme	Plot Size	Irrigated Area	No. of Farmers	Irrigation System
Zanyokwe	0.2	439	61	Sprinkler
Tyefu	0.16-0.25	641	1678	Sprinkler/drag
Keiskammahoek	0.25	744	147	Sprinkler
Shioh	0.25	455	278	Centre pivot/sprinkler
Qamata	1.28	1959	1000	Flood
Ncora	0.2	2490	272	Sprinkler/drag
Tugela Ferry	0.1-0.2	540	1500	Short-furrow
Makhathini Flats	0.1-10	538	600	Short-furrow/sprinkler
Ndumo	10	500	50	Underground water conveyance
Mooi-River	0.1-5	25km	540	Gravity flow canal

Source: Van Averberke et al. (2011)

The following section presents the conceptual framework, followed by Section 3, which describes the data collection, study sites and analytical methods. The subsequent section presents the findings of the study, followed by conclusions and recommendations.

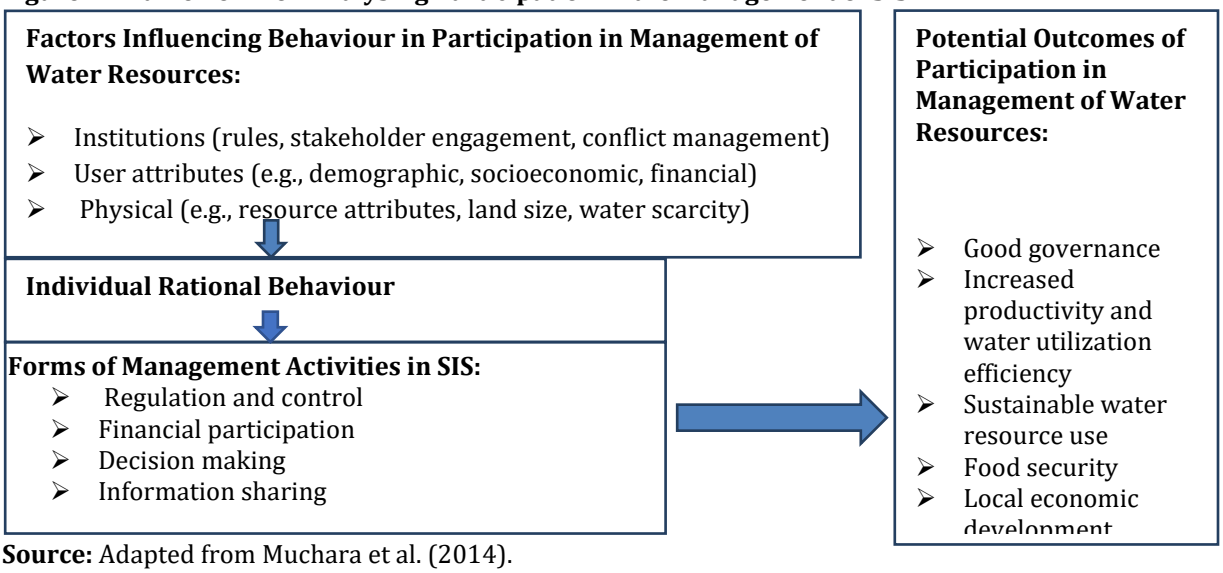
2. Methodology

Conceptual Framework: PIM is an important concept in the management of water resources. It fosters the involvement of farmers in different aspects of resource management, such as planning, maintenance as well of financing (Kulkarni et al., 2011). Participation in management activities such as decision-making, financial contribution, information dissemination as well as regulation and control, all depend on an individual's rational behaviour, as well as the attributes of the water users as shown in Figure 1. The attributes include

the institutional setting, individual's socioeconomic and financial circumstances, and physical resource factors. Participation in management activities differs between water users. One water user could participate more in one activity over the other, and as such a holistic participation measure should be derived. The framework includes the possible outcomes of participation. Participation in management encourages good governance.

Where issues such as rule compliance, conflict management and accountability are improved. It has the potential of promoting better utilization of water resources, as such, increasing the sustainability of the scheme (Kulkarni et al., 2011). It also provides an incentive to manage water and use it efficiently, which then enhances agricultural production, subsequently improving welfare, including food security (Muchara et al., 2014). For the study, CFA was used to address the first research question of determining the relationship between management activities which farmers participate in, to identify if farmers choose to equally participate in the four management themes/constructs. Furthermore, when farmers participate in the management of the scheme, collective economic activities such as group purchasing of inputs, development of agribusinesses are probable. This, in turn, stimulates economic development in the communities (Garces-Restrepo et al., 2007).

Figure 1: Framework for Analysing Participation in the Management of SIS



Source: Adapted from Muchara et al. (2014).

Empirical Methods of Data Analysis: The study employed Principal Component Analysis (PCA) and Structural Equation Modelling (SEM). PCA was used to generate the Participation in Management Indices (PIM). The SEM includes both the Confirmatory Factor Analysis (CFA) and multiple regression to observe the relationship between management constructs and evaluate the determinants of participation, respectively. Respondents ranked twelve irrigation management activities using a 3-point Likert scale from 1-if a water-users never participate to 3-if they always do. Although a larger Likert scale such as a 5-point scale is recommended, the type of management activities, as an irrigator either never, sometimes, or always participated motivated the choice of the 3-point Likert. The 12 management activities were grouped into four main themes, namely (1) **Participation in regulation and control** (Reporting unlawful behaviour (unauthorised handling, theft etc.); Engaging authorities regarding water issues; Reporting leakages along canals); (2) **Financial participation** (Contributing finance towards infrastructure.

Contributing finances towards irrigation infrastructure maintenance, e.g. buying material, paying the maintenance people; (3) **Participation in decision making** (Electing/removing committee members; Formulating rules in the scheme; Irrigation water scheduling; Attending irrigation meetings); (4) **Participation in information sharing** (Distributing information about water issues (written or verbal); Helping other water-users manage/conserve water; Attending irrigation/water-related training). The activities are assumed to have equal weights; however, water-users may value them differently due to

preference and the water resource system in place. Together, the activities give rise to the generation of Participation in Management Indices (PMI), which are used as proxies for participation in the management of the schemes. The different management activities were then used as observed variables to formulate a Structural Equation Model (SEM), which is a commonly used analytical tool in analysing cause-effect relationships in behavioural studies (Toma & Mathijs, 2007). The use of SEM in this study was motivated by the need to evaluate the level of participation in management, made up of unobserved latent variables, using observed management activity questionnaire items.

Additionally, it enables the evaluation of the relationship between the PCA generated Participation in Management Indexes (PMI) and observed socio-economic and institutional variables. Within the SEM, this study employs Confirmatory Factor Analysis (CFA) and multiple regression. CFA is a statistical technique used to confirm or verify the factor structure of a group of observed variables (Gallagher & Brown, 2013) and thus models the relationship between observed and latent variables. Furthermore, CFA was used to confirm whether the management constructs are statistically different, which validates constructing different proxies for each and running separate regression models. Due to the multidimensional nature of participation considered in this study, a binary method of accounting for participation could not be adopted (Muchara et al., 2014). As such, PCA was used to generate composite PMI to account for the various activities in management that water-users could partake. PCA's dimension reduction attribute helps in capturing the multiple activities that are considered within the four facets of management, namely, financial, information-sharing, decision-making as well as regulation and control.

The multiple regression was used to address the second research question and evaluate the role of governance and the determinants of participation in management. The multiple regression in the SEM is represented by Equation 1:

$Y_i = b_0 + b_1X_1 + b_2X_2 + \ldots\ldots\ldots + b_{13}X_{13} + u_i$…… (1)

Where Y_i represents the PMI of a water-user, b_0 represents the constant term, X's represent the socio-economic and institutional independent variables and u_i, the error term. The explanatory variables are presented and described in Table 2. All but the gender variables are expected to influence farmers' participation in scheme management positively. In most rural settings in South Africa, females participate more in farming activities (Murugani & Thamaga-Chitja, 2018) and would most likely participate more in the schemes, than their male counterparts.

Table 2: Description of Explanatory Variables

Variable Name	Description	Exp Sign
Age	Age of a water user (years)	+
Gender	The gender of the water user (1=Male; 0=Female)	-
Cooperative Member	A binary variable representing whether a water-user is part of an agricultural cooperative (1=Yes; 0=No)	+
Credit access	A binary variable which represents whether a farmer has access to credit or not (1=Yes; 0=No)	+
Land tenure security	A binary variable, representing whether a farmer is satisfied with the existing land tenure or not (1=Satisfied; 0=Not Satisfied)	+
Water Adequacy	A binary variable which indicates whether a water-users considers irrigation water they have access to adequate for their cropping requirements (1=Adequate; 0=Not adequate)	+
Household Governance index	A PCA derived a composite score of water-users' perceptions of governance. Includes perceptions, understanding, and awareness of institutions and governance in smallholder irrigation schemes, at the household level.	+
Psychological capital	A PCA derived composite score which represents the self-efficacy, hope and resilience of a water-user	+

Using a Likert-scale, farmers ranked their satisfaction of 25 governance issues. The household governance index considers the understanding of formal institutions governing irrigation schemes, as well as farmers' satisfaction of stakeholders' involvement in governmental institutions, tribal authorities, and non-

governmental organizations. It also includes informal institutions set by the farmers to govern the scheme, and their satisfaction with the decision-making processes and committees of the schemes. It paints a picture of governance in the farmer's view, with a higher index indicating the farmer's satisfaction with how the scheme is governed. PCA was also used to derive a psychological capital variable which represents the confidence self-efficacy, hope and resilience of a water-user. Variables included in constructing this variable included whether the farmer is business-oriented, willing to take risks and invest in farming activities, optimistic about opportunities, resilient during duress, and able to adopt adaptation strategies. A higher index indicates positive psychological capital, which can be considered an important characteristic which enables farmers to manage resources effectively and sustainably (Chipfupa & Wale, 2018).

3. Results and Discussion

Descriptive Statistics: Table 3 presents descriptive statistics of water-user characteristics. The results indicate that most of the farmers have no formal education, with only about 4% having received tertiary education. Most of the water-users consider themselves secure in terms of land tenure.

Table 3: Descriptive Statistics of Water-Users in SIS

Variables		Percentage % (n=341)
Gender	Male=1	1=22.62
	Female=0	0=77.38
Education	No formal=1	1= 50.66
	Primary=2	2= 27.30
	High School=3	3=17.76
	Formal=4	4=4.28
Occupation	Farmer=1	1=75.66
	Other=0	0=24.34
Agricultural Training	Yes=1	1= 54.43
	No=0	0=45.57
Irrigation training	Yes=1	1=29.51
	No=0	0=70.49
Land tenure security	Yes=1	1=74.59
	No=0	0=25.41
Willing to participate in executive management	Yes=1	1=67.05
	No=0	0=32.95
Credit access	Yes=1	1=60.19
	No=0	0=39.81
Cooperative membership	Yes=1	1=36.39
	No=0	0= 63.61
Irrigation water adequacy	Yes=1	1= 37.21
	No=0	0=62.79
	Continuous variables	
Age (years):		Mean= 54
		Standard Deviation= 13.95
Total Income (ZAR):		Mean=18 823
		Standard Deviation= 50 066

Source: Survey data (2018)

About 63% of the farmers feel that irrigation water is adequate for their cropping requirements and 67% are willing to take up executive roles in local scheme management. Although the farmers use irrigation water, only 30% have received irrigation training. As is the case with many rural settings, there are more female water users, accounting for about 77% of the sample. This is expected as females dominate smallholder crop

farming in the rural areas of KZN by (Muchara et al., 2014; Sinyolo et al., 2014). The average age of the farmers is 54 showing that relatively older people are part of the schemes, which is consistent with Dlangalala et al. (2020) and Sithole et al. (2014) who found an average age of 55 and 54 amongst farmers in SIS in KwaZulu-Natal and Swaziland, respectively. About 36% of the farmers are members of agricultural co-operatives, while 60% have access to credit, similar to the findings of Sinyolo et al. (2014) who found that 65.8% farmers in SIS had access to credit. The following subsection presents the empirical results. Firstly, the SEM analysis results are presented, addressing the objective of evaluating the relationship between management constructs in which farmers participate, followed by the regression results of the determinants of farmer's participation in the management of SIS.

Structural Equation Model Analysis Results

Confirmatory Factor Analysis (CFA): To successfully run a CFA model, the observed and latent variables must meet certain criteria, and that model fit is achieved. The Goodness of Fit test was assessed using the Root Mean-Square Error of Approximation (RMSEA). The RMSEA value of 0.04 for the model was statistically significant at 1% level, and being below 0.07, indicates a significant, good model fit (Steiger, 2007). Cronbach's alpha was used to test the internal consistency of the latent variables in the model. Convergent and Discriminant Validity of the variables was also evaluated using factor loadings of the variables. This indicates that the latent variables included in the model are divergent or distinct management constructs. Table 4 shows the results of the internal consistency of the latent and observed variables. The latent variables showed internal consistency ranging from 0.57 to 0.91. Although the latent constructs of "participation in the distribution of information" and "regulation and control" are lower, based on Pradhananga et al. (2015), the overall measure of 0.81 shows acceptable internal consistency, given by a value that is $\alpha \geq 0.74$.

Table 4: Reliability Analysis of Participation in Management Constructs

Latent Constructs	Conbrach's Alpha α[a]
Participation in regulation and control	0.57
Participation in management decision making	0.84
Participation in the distribution of information	0.57
Participation in financing	0.91
Overall model	0.81

[a] Scale reliability coefficient

For discriminant validity, the correlations between latent variables should be less than 0.9 (Gallagher & Brown, 2013). This indicates that the latent variables included in the model are divergent or distinct management constructs. As shown in Table 5, the correlations range from 0.56 to 0.88, which are below 0.9, as such, proving discriminant validity (Gallagher & Brown, 2013). Therefore, the management constructs are different, and separate focus should be emphasized in interventions to improve them. Varying factors could also determine the constructs. Apart from discriminant validity, the correlation between constructs also indicates where improvements can be made in terms of water-users management activities. For instance, water-users who are involved in making management decisions should be encouraged to distribute water information, attend irrigation training as well as help other farmers conserve water (Muchara et al., 2014). There is a strong relationship between Regulation and Control, and Information Sharing (r=0.88), Information Sharing and Finance (r=0.81), as well as Regulation Control and Finance (r=0.69). This is an indication that farmers who are active in the observed activities of one latent construct are also active in the other. The correlation between Decision Making and Finance (r=0.56), shows that a strong relationship does not exist between the two. This shows that farmers that participate in financing activities do not necessarily participate in decision-making activities, and therefore efforts.

Table 5: Co-variances and Correlations between Latent Management Constructs

Latent Constructs	Co-variances	Correlation Coefficient
Regulation and Control-Information sharing	0.15	0.88
Regulation and Control-Management decision-making	1.53	0.58
Regulation and Control-Finance	0.18	0.69
Management decision making- Information sharing	0.12	0.59
Management decision making- Finance	0.18	0.56
Information sharing and-Finance	0.16	0.81

Source: Survey data (2018)

Principal Components Results of Contributors to Participation in Management Indices: Participation in the management of the schemes is not one-dimensional as it is characterized by different facets. Therefore, the PCA was employed to group the dominant activities that determine the participation in management and to develop proxies of participation. The results are presented in Table 6. For model diagnostics, the study used Bartlett's sphericity test to check if the observed correlation matrix diverges significantly from the identity matrix (theoretical matrix under H0: the variables are orthogonal). It further applied the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy, an indicator of the appropriateness of the use of PCA on the data. The Bartlett's test was significant ($P < 0.001$) and therefore rejects the null hypothesis that variables are not inter-correlated. The KMO value of 0.77 is middling, and a good indicator that overall, the variables have a lot in common, and the use of PCA is justified (Kaiser, 1974). Applying the Kaiser criterion and a scree plot, four PCs were retained. The four retained PCs cumulatively explained 69% of the variation and were named based on the dominant management activities.

Table 6: Principal Component Analysis of the Participation in Management Activities

Variables	Principal Components			
	PC1-Decision Making	PC2-Financial Contribution	PC3-Information Distribution	PC4-Stakeholder Engagement
Finance irrigation maintenance	0.177	**0.564**	-0.317	-0.004
Contribute finance for irrigation	0.194	**0.569**	-0.289	-0.104
Attend management meetings	**0.321**	-0.179	0.001	0.115
Attend irrigation related training	0.282	-0.153	-0.201	**0.559**
Engage authorities	0.302	0.086	0.018	**0.490**
Distribute irrigation information	0.082	0.307	**0.659**	0.178
Help other farmers conserve water	0.259	0.054	**0.497**	0.090
Election of committee members	**0.375**	-0.226	-0.073	-0.095
Formulation of scheme rules	**0.398**	-0.237	-0.064	-0.222
Formulation of irrigation schedule	**0.353**	-0.214	-0.054	-0.325
Report unlawful behaviour	**0.313**	0.128	-0.051	-0.018
Report leakages along canals	0.245	0.162	0.280	-0.467
Eigenvalues	4.065	1.92	1.3	1.01
Variance explained	34%	16%	11%	8%
Cumulative Variance explained	34%	50%	61%	69%
Keiser-Meyer-Olkin (KMO)	0.77			
Bartlett's Test of Sphericity	Chi-Square = 1381.24 Degrees of Freedom = 66 P-value = 0.0001			

Notes: Component loadings greater than |0.30| are highlighted in bold print
Source: Survey data (2018).

The first PC, Decision-making, explained 34% of the variation, and dominated by the election of committees, formulating scheme rules and the irrigation schedule. The second PC, named financial contribution, is dominated by irrigator's financial contribution to irrigation activities and maintaining infrastructure and accounts for 16% of the variation. The third PC- named Distribution of information, accounts for 11 % of the variation and is dominated by irrigators' activities of distributing irrigation information and helping other

farmers conserve water. The last PC-Stakeholder engagement accounts for 8% of the variation and is dominated by farmers' participation in engaging with authorities and attending water-related training.

Multiple Regression Results of the Determinants of Farmer's Participation in the Management of SIS: Using the multiple regression model, four models were estimated, using PCA derived participation indices as dependent variables. The results yielded a mean Variance Inflation Factor of 1.26, indicating a low level of multicollinearity between the independent variables. The results presented in Table 7 suggest that independent variables have varying effects on the different management constructs.

Decision Making: The results show that the Household Governance Index (HGI) positively affects farmers' participation in decision-making activities. The index includes awareness of formal and institutions, understanding of rules and satisfaction with stakeholder involvement in the schemes. This shows that farmers who generally know the institutions, formal and informal, would be more inclined to participate in formulating rules, schedules, and electing committee members. A key aspect of Participatory Irrigation Management is the farmer being the manager of the resource and building a sense of ownership (Gomo et al., 2014; Muchara et al., 2014). It is therefore vital that farmers are satisfied with the institutional arrangements, to participate in making decisions in the schemes. Land tenure security is also a statistically significant predictor of participation in decision making. Farmers who are satisfied with their land tenure, are more likely to invest efforts in irrigation activities and would want to hold a stake in the decision making within the scheme (Muchara et al., 2014).

Hence are more likely to participate more in the management of the scheme. Co-operatives play a unifying role in terms of participation in the schemes. The cooperative membership variable was found to be a statistically significant determinant of participation in decision-making activities. This is consistent with the findings of Meinzen-Dick et al. (2002), who found that farmers who are part of cooperatives tend to participate more in the schemes. Agricultural training significantly affects farmer participation in decision making. When farmers know the value of irrigated agriculture and how to manage and conserve water, they gain the propensity to maintain the resource, as such will most likely participate in management activities to ensure the sustainable use of the scheme. Muchara et al. (2014), noted that training is critical at smallholder level where access to extension services is not always consistent and that farmers in the MRIS, who have received training are more likely to participate in the scheme farmers indicated that young people are less involved in scheme management and not interested in agriculture.

Table 7: Determinants of Farmer's Participation in the Management of SIS

Independent Variables	PC1-Decision Making	PC2-Financial Contribution	PC3-Information Distribution	PC4-Stakeholder Engagement	V.I.F
Age	0.01 (0.01)	-0.001 (0.006)	0.01 (0.01)	0.01*** (0.01)	1.11
Gender	0.38 (0.29)	0.27(0.23)	-0.33**(0.17)	0.32***(0.16)	1.25
Governance Index	0.12** (0.05)	0.033 (0.03)	0.04 (0.03)	0.02 (0.03)	1.29
Water Adequacy	0.37 (0.244)	0.69***(0.18)	-0.23(0.14)	0.22*(0.13)	1.19
Land security	0.71*** (0.28)	-0.66(0.2)	0.05 (0.15)	-0.29**(0.41)	1.17
Credit access	-035 (0.21)	0.19 (0.16)	0.79***(0.12)	0.28**(0.11)	1.11
Agricultural training	0.66***(0.25)	-0.3 (0.18)	-0.08(0.14)	0.23*(0.13)	1.36
Irrigation training	-0.11 (0.26)	0.29 (0.2)	-0.06(0.15)	0.09 (0.14)	1.3
Household income	2.81e-06 (2.89e-06)	3.4e-06(2.9e-06)	9.44e-06(1.62e-06)	-3.03e-06(1.53e-06)	1.25
Co-operative membership	0.66**(0.261)	0.39*(0.21)	-0.22(0.14)	0.1(0.14)	1.29
Psychological capital	0.08 (0.06)	0.0988(0.04)	0.13*** (0.33)	-0.13***(0.03)	1.46

Note: ***, **, *; significant at 1%, 5% and 10%, respectively.
Source: Survey Data (2018).

Financial Contributions: The results in Table 7 show that farmers who feel that the water they receive from irrigation is adequate for the cropping need, tend to participate more in financial contribution. This is

expected, as farmers would financially contribute towards the maintenance of infrastructure and other irrigation related activities to ensure that they still receive an adequate supply of irrigation water. Water adequacy has a positive effect on participation. Consistent with the findings of Muchara et al. (2014), when farmers feel that their water is adequate for their cropping requirements, they will tend to participate in irrigation activities. Farmers who are part of co-operatives participate more in the finance management construct. This is consistent with the findings of Meinzen-Dick et al. (2002), who found that farmers who are part of cooperatives tend to participate more. Co-operatives play a unifying role in terms of participation; information is easily distributed, and members would more likely make financial contributions like their counterparts.

Information Distribution: The results show that female farmers participate more in disseminating information amongst their peers, during Focus Group Discussions, farmers noted that they receive most of the information regarding the schemes come from fellow farmers, particularly in cooperative meetings. Consistent with a priori expectations, females make the bulk of farmers in rural areas. Therefore, it is expected that they would be more involved in distributing information. This is consistent with the findings of Katungi et al. (2008) who although found that females are disadvantaged in accessing information about technologies in agriculture, they participate more in sharing information locally. Farmers with higher psychological capital, are those that are confident in themselves as commercial farmers, resilient, self-reliant and are hopeful in terms of governing the schemes and improving their communities, as such they are more likely to share information with other farmers (Chipfupa & Wale, 2018). Consistent with a priori expectations, access to credit has a positive effect on participation in information sharing. Farmers who have access to credit are more likely to have better access to information and therefore would participate in distributing it to other farmers.

Stakeholder Engagement: Farmers who have higher psychological capital tend to more self-reliant are business-oriented and resilient, and as such, they would be less inclined to engage with authorities, particularly for support. The stakeholder engagement management construct also includes engaging authorities through attending irrigation training. The results show that male farmers tend to participate more in engaging authorities and that indeed, farmers who have received agricultural training, would also participate more in irrigation training. Consistent with Damianos & Giannakopoulos (2002), who found that age positively influences water users' participation in management, the age coefficient estimate shows that older farmers participate more in engaging with stakeholders. With the average age of 54 years, members who participate in scheme management are likely in the older age groups. The positive coefficient estimate of the age variable shows that the propensity for farmers to participate in engaging authorities increases with age. Possibly because the elderly regard the schemes as their lifeline. It further motivates why stakeholder engagement should be improved, as it is crucial in the sound management of water resources (Ricart et al., 2019).

4. Conclusions and Recommendations

Evaluating and understanding the determinants of participation in irrigation management is key to establishing interventions in water resource management. When farmers do not participate in the management of schemes, the use of the resource is highly likely to be unsustainable. Therefore, the study employed econometric models to evaluate the role of governance and other determinants of water-users' participation in the management of irrigation schemes. The study identified four dimensions of management constructs in which water-users participate, i.e., decision-making, financial contribution, information distribution and stakeholder engagement. The study concludes that varying factors drive farmers' participation in each management construct and that water-users vary in their participation in different management activities. As such, farmers should be made aware of the benefits of holistic and balanced participation to ensure the successful decentralization of scheme management. Credit access, gender, co-operative membership, agricultural training, water adequacy, governance index, age, and psychological capital positively affect participation in the different scheme management constructs.

Farmers who are satisfied with their land tenure, have a higher governance index, have undergone agricultural training, and are part of co-operatives, are more likely to participate in decision-making activities. As such, policy interventions should be focussed on establishing ways of ensuring that farmers have secure land tenure, as well as access to credit through micro-finance institutions and localized loan schemes. Furthermore, farmers should be encouraged to form and be part of co-operatives, as this also positively affects their propensity to make financial contributions in the schemes. Irrigators that feel that water is adequate for their crop production, participate in scheme stakeholder engagement and financial contribution. Therefore, access to water should be improved in SIS through better water scheduling arrangements and proper rule enforcement in terms of water extraction, which is a secondary effect of improved institutional settings. Agricultural training should be prioritized to increase participation in decision-making and stakeholder engagement across the SIS.

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Socioeconomic Disparities in the Effects of Pollution on Spread of Covid-19: Evidence from US Counties

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Abstract: This paper explores disparities in the effect of pollution on confirmed cases of Covid-19 based on counties' socioeconomic and demographic characteristics. Using data on all US counties on a daily basis over the year 2020 and applying a rich panel data fixed effect model, we document that: 1) there are discernible social and demographic disparities in the spread of Covid-19. Blacks, low educated, and poorer people are at higher risks of being infected by the new disease. 2) The criteria pollutants including Ozone, CO, PM_{10}, and $PM_{2.5}$ have the potential to accelerate the outbreak of the novel coronavirus. 3) The disadvantaged population is more vulnerable to the effects of pollution on the spread of coronavirus. Specifically, the effects of pollution on confirmed cases become larger for blacks, low educated, and counties with lower average wages in 2019. The results suggest that welfare programs during a global pandemic should be differentially distributed among families with different socioeconomic status since the effects of these programs in reducing the spread of the pandemic is different among subpopulations. This paper is the first study to evaluate the differential effects of pollution on the spread of novel coronavirus across different subpopulations based on their socioeconomic status.

Keywords: *Covid-19, Racial Disparities, Education, Health, Pandemic, Pollution, Environment.*

1. Introduction

The novel coronavirus was observed initially in a small cluster in Wuhan, China in December 2019 and spread around the globe during the following year, and claimed about 1.85 million deaths in 2020 (Cnn 2020). While the outbreak of the virus was unprecedented and fast the factors behind its pace of spread have risen policy-relevant questions. For instance, some studies point to the fact that there are disparities in the outbreak of the Covid-19 across occupations (McClure et al., 2020). Blacks, minorities, males, older individuals, low educated, and poorer individuals are at higher risks of being infected with Covid-19 (Figueroa et al., 2020; Kopel et al., 2020; McClure et al., 2020; Paul et al., 2020; Yang et al., 2020). For instance, Yang et al. (2020) apply a negative binomial regression at a county-level dataset that covers data on Covid-19 cases up to June 13th and find that counties with a higher density of racial and ethnicity have higher confirmed cases. They show that this link is enhanced for counties with higher segregation between blacks and whites. On the other end, there are also environmental factors that may affect the spread of Covid-19. Temperature and pollution are among the factors that were related to the Covid-19 through various mechanism channels. For instance, NoghaniBehambari, Salari, et al. (2020) examine the impacts of ambient air on the spread of Covid-19 across US counties.

They use panel data fixed effect models and GMM models in a panel of county-by-day and find that an increase of one degree in air temperature is associate with 0.041 more cases per 100,000 population. The results are robust when they include county-by-week fixed effects and also across various subsamples. In another study, Contini & Costabile (2020) evaluates the literature on pollution and Covid-19 and conclude that, although marginally, specific pollutants such as PM_{10} can explain variations in the outbreak of Covid-19. However, no study has investigated the heterogeneous effects of pollution on the spread of Covid-19 based on demographic and socioeconomic characteristics. This paper aims to fill this gap in the literature. We aim at exploring the racial and demographic disparities of health effects of pollution in the case of the spread of Covid-19. We build our study on the established fact that pollution affects the spread of coronavirus (Al Huraimel et al., 2020; Allen et al., 2021; Contini & Costabile, 2020; Zoran et al., 2020). We explore whether this worsening effect of pollution is different among people with different socioeconomic status or not. The idea is that poor, low educated, and black population live in more polluted areas as these residential locations are usually cheaper. Therefore, it is likely that they are more exposed to pollution and the pollution-covid-19 link could be more pronounced for these individuals.

This paper evaluates the effects of demographic and socioeconomic features of counties on the relationship between pollution and the spread of Covid-19 in the US. Using daily panel data across all US counties that cover days in the year 2020 and applying a rich panel data fixed effect model, we find that: 1) Pollution has a small but significant effect on the pace of Covid-19 outbreak. 2) There is heterogeneity in confirmed cases based on demographic characteristics. Counties with a higher share of blacks, higher share of low educated people, and lower average wages reveal higher rates of confirmed cases. 3) The marginal effects of pollution on the spread of Covid-19 is larger among counties with lower wages and a higher share of minorities. This paper adds to the literature that investigates the sources of variations in the outbreak of Covid-19 in two ways. First, to the best of our knowledge, this is the first study to evaluate the socioeconomic disparities in the effect of pollution on Covid-19 confirmed cases.

Second, we update the findings of the literature on pollution and Covid-19 using data from all US counties on a daily basis that covers all days of the year 2020 while the previous literature exploited from part of this timeframe. The findings of this paper have important policy implications. The fact that pollution causes a mechanism channel for the spread of pandemic suggests that policymakers should re-evaluate the abatement structure during the pandemic to protect public health. The evidence on the racial and demographic disparities also help policymakers design optimal welfare programs during the pandemic to close the health gap among different groups within a society. The rest of the paper is organized as follows. In section 2, we introduce the data sources and discuss the final sample. Section 3 provides the econometric framework. In section 4, we go over the results. Section 5 concludes the paper.

Data Sources: This study implements a wide array of data sources. the daily count of new confirmed cases is extracted from USA-Facts (2020). The daily temperature data is extracted from the Global Summary of the Day data files produced by the National Oceanic and Atmospheric Administration (NOAA). The county population and demographic data are extracted from SEER (2019). The pollution data comes from the Environmental Protection Agency (EPA). The county average wage data is from the Quarterly Census of Employment and Wages (QCEW) and is extracted from replication codes provided by NoghaniBehambari, Noghani, et al. (2020). Finally, the unemployment rate data is extracted from Local Area Unemployment Statistics gathered by the Bureau of Labor Statistics.

Figure 1: Geographic Distribution of Quartiles of Total Confirmed Cases (Top) and Average Daily Cases (Bottom) across US Counties in 2020

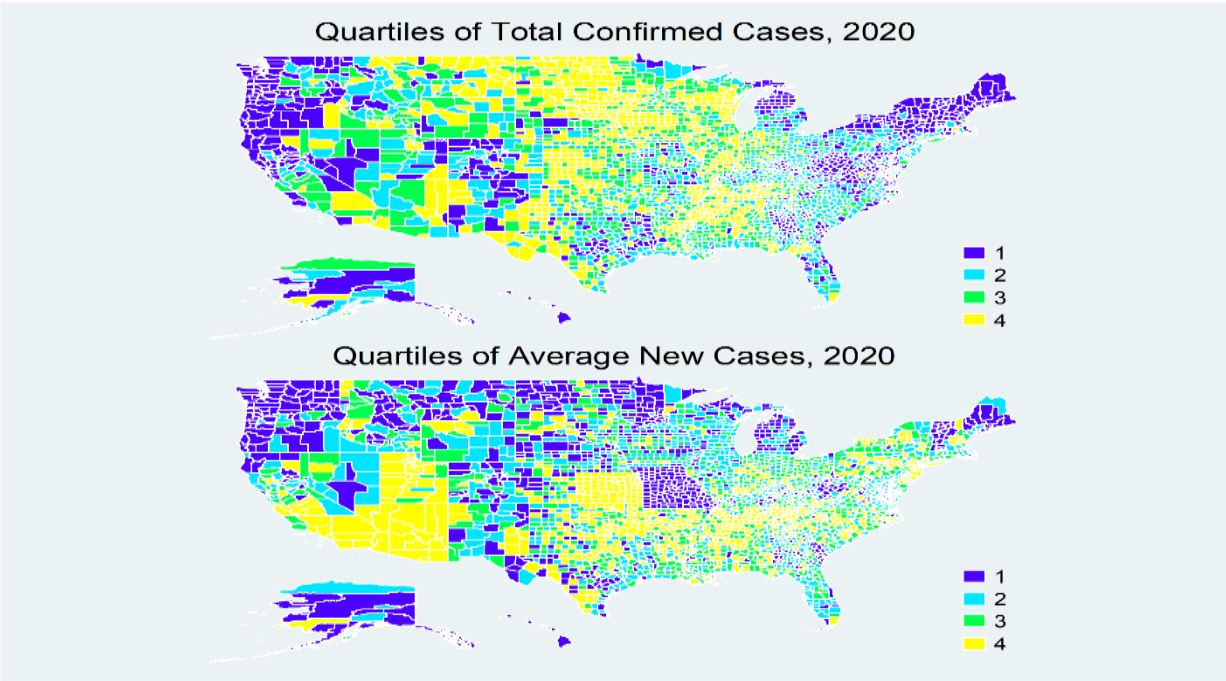


Figure 2: Geographic Distribution of Quartiles of Percentage of People with Less than High School Education (Top) and Bachelor and above Education (Bottom) across US Counties in 2019

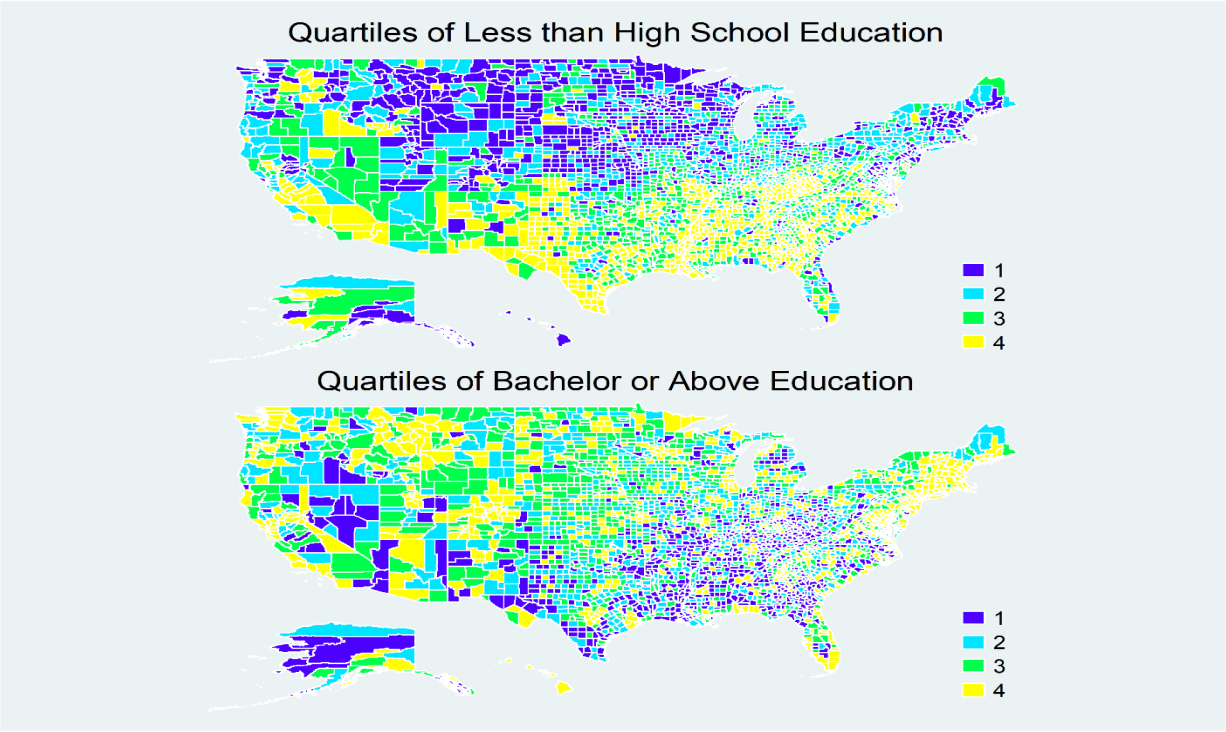


Figure 3: Geographic Distribution of Quartiles of Percentage of Whites (Top) and Blacks (Bottom) Across US Counties in 2019

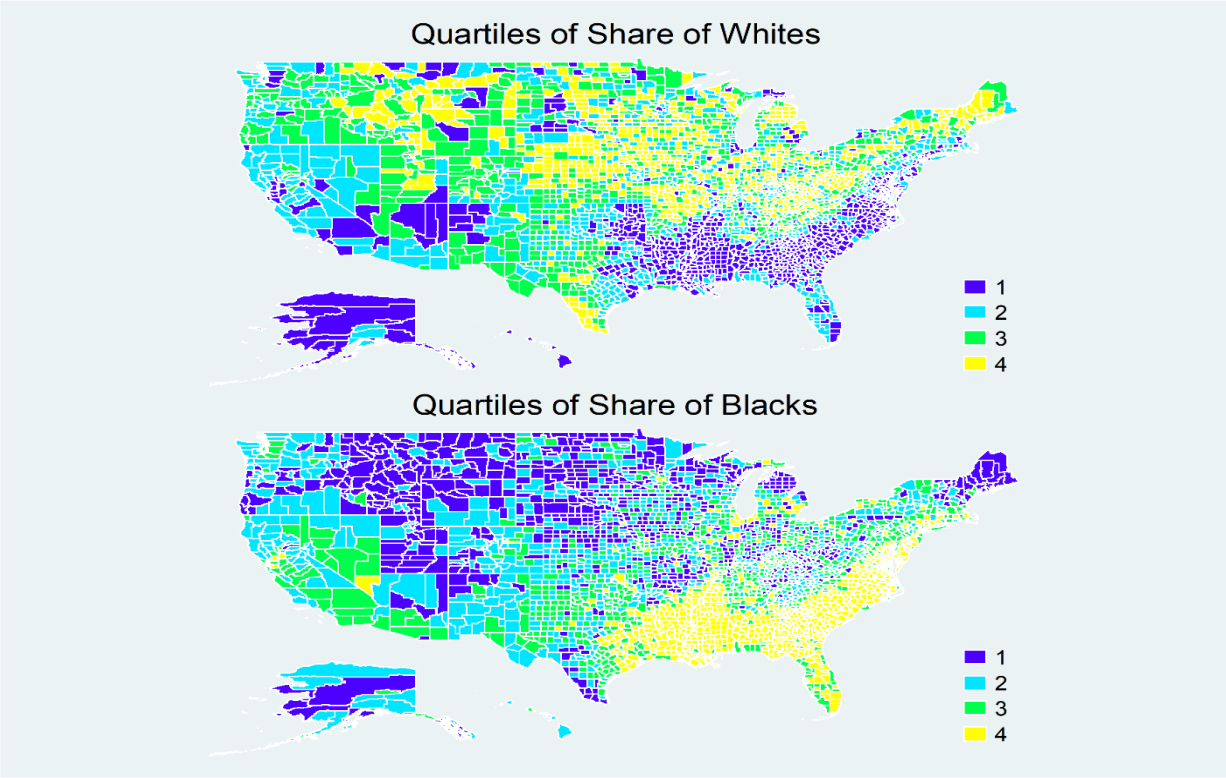
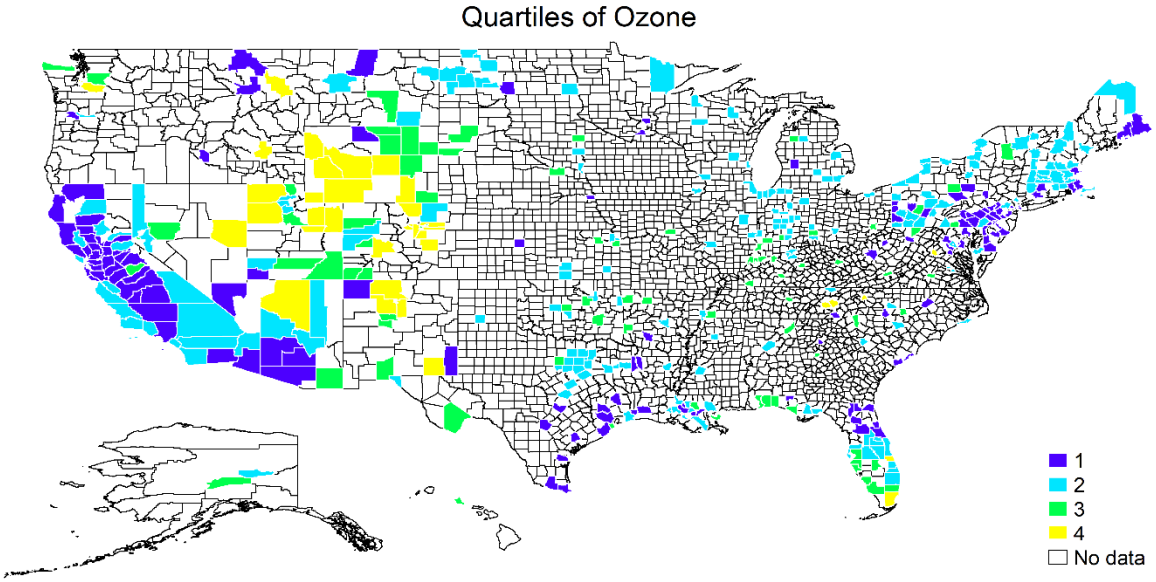


Figure 4: Geographic Distribution of Quartiles of Percentage of Ozone in 2020



First, we show the geographic disparities in Covid-19 and socioeconomic disparities in a series of figures.

Figure 1 illustrates the quartiles of total confirmed cases per county population (top panel) and the quartiles of daily average cases (bottom panel) across US counties for the whole year of 2020. The rates of confirmed cases for both outcomes are concentrated mainly in eastern and western states. Figure 2 depicts the geographic distribution of counties based on quartiles of the share of people with low education (top panel) and high education (bottom panel).[2]
Figure **3**Figure 3 shows the geographic distribution based on the percentage of whites (top panel) and the percentage of blacks (bottom panel). The pollution data reported by EPA has two problems. First, pollutants have different units of measurement. In order to solve this problem and to make the interpretations easy and intuitive, we standardize the pollution data. We subtract the variable from the mean and then divide it by its standard deviation over the sample period. Therefore, all pollutants have a mean of zero and a standard deviation of one. For this reason, we avoid reporting their summary statistics. Second, the distribution of pollution monitors across counties is sporadic. Moreover, not every pollution monitor reports, every essential criteria pollutant on a regular basis. To show this fact visually,

Figure 4 Figure 4 illustrates the quartiles of Ozone pollution across counties. While the distribution is arbitrary across counties they cover a small fraction of counties. For instance, only 356 counties report Ozone among 3,148 counties covered in the final sample.

Table 1: Summary Statistics

Variable	Observations	Mean	Std. Dev.	Min	Max
Daily New Case per 100,000 Population	1,084,364	17.843	110.421	0	101792.38
Total Cases per 100,000 Population in 2020	1,084,364	6588.172	2813.113	0	27388.221
%Blacks	1,084,364	9.910	14.595	0	86.391

[2]Throughout the paper we categorize people with less than high school education as low educated. Similarly, we consider people with bachelor and above as high educated.

%Whites	1,084,364	85.828	16.244	9.269	99.454
Average Weekly Wages	1,084,364	768.784	174.286	436.670	2430.100
Personal Income per Capita	1,084,364	41836.027	11508.685	11900.763	233150.06
%Foreign	1,084,364	0.043	0.056	0	0.722
%Less than High School	1,084,364	13.407	6.336	1.200	66.30
%Only High School	1,084,364	34.285	7.185	5.500	55.599
%Some College	1,084,364	30.728	5.201	5.800	57.299
%Bachelor and Above	1,084,364	21.576	9.433	0	78.5
Population	1,084,364	104656.16	333694.86	0	10039107
Population Density	1,084,364	226.665	1268.702	0	48229.375
Unemployment Rate	1,084,364	4.582	1.628	1.5	19.5

Notes: County characteristics are for the year 2019.

A summary statistics of the final sample is reported in Table 1. On average, there have been 17.8 new confirmed cases per 100,000 population and the total inflicted individuals in 2020 within each county add up to 6,588 persons per 100,000 county population. Roughly 9.9 percent of people are black and 13.4 percent are low educated.

2. Econometric Framework

We start with a cross-sectional data of counties and explore the cross-tabulation between county characteristics in 2019 and the rate of spread of Covid-19 in 2020 using the following OLS model:

$$y_{c,2020} = \alpha_0 + \alpha_1 X_{c,2019} + \epsilon_{c,2020} \quad (1)$$

The main reason to use the characteristics in 2019 is that socioeconomic characteristics have not yet been released for the year 2020. In this specification, y is the Covid-19 confirmed cases per 100,000 population of county c for the year 2020. In the next step, we use a panel of county-by-day data to assess the effect of pollution on the rates of Covid-19 using fixed-effect models of the following form:

$$y_{cst} = \alpha_0 + \alpha_1 P_{cs,t-3} + \alpha_2 T_{cs,t-3} + \xi_c + \zeta_{st} + \eta_t + \gamma_c \times t + \epsilon_{cst} \quad (2)$$

Where c Indexes the county, s indexes the state, and t indexes day-by-month of observation. y is the daily rates of Covid-19 confirmed in the county. P is the standardized variable of pollution measures including Ozone, Carmon Monoxide (CO), particulate matters less than $10\mu m$ (PM_{10}), and particulate matters less than $2.5\mu m$ ($PM_{2.5}$).

The pollution is measured three days in advance since the literature suggests that the virus has an average incubation period of 3 days (Lauer et al., 2020; Li et al., 2020; Tan et al., 2005). Since temperature is discussed to be one of the causes that accelerate the outbreak we also control for daily temperature in all regressions represented by T (NoghaniBehambari, Salari, et al., 2020; Wang et al., 2020; Xie & Zhu, 2020). The parameter ξ is the county fixed effect. ζ is a set of state by day-month fixed effects. The matrix η represents day-by-month fixed effects. In some specifications, we also include a county-specific linear time trend. Finally, ϵ is a disturbance terms. All standard errors are clustered at the county level. All regressions are weighted using the average of county population in 2020. To assess the socioeconomic disparities in α_1 of equation 2, we use an interaction term for each characteristics using the following formulation:

$$y_{cst} = \alpha_0 + \alpha_1 X_c \times P_{cs,t-3} + \alpha_2 X_c + \alpha_3 P_{cs,t-3} + \alpha_4 T_{cs,t-3} + \xi_c + \zeta_{st} + \eta_t + \gamma_c \times t + \epsilon_{cst} \quad (2)$$

Where all parameters follow the same notation as in equations 1 and 2. The coefficient of interest s α_1 that shows the effect of pollution on coronavirus cases per population for the group with characteristics represented in X compared to the reference group.

3. Main Results

We start by reevaluating the social disparities in confirmed cases of coronavirus. s.

Table 2Table 2 shows the results of a regression introduced in equation 1 for total and average daily cases in columns 1 and 2, respectively. If the share of blacks in a county goes up by 10 percent the confirmed cases of corona increase by 1.1 cases per 100,000 population, an increase equivalent to a 6.2 percent change from the mean of daily confirmed cases (column 2, first row). In a similar manner, if the share of people with at least a bachelor's degree goes up by 10 percent in a county then the average daily confirmed cases go down by 16.9 cases per 100,000 population. This change can explain 15.5 percent of the standard deviation of confirmed cases over the year 2020. Overall, counties with a higher share of blacks, low educated people, and lower-income and wages have higher rates of confirmed cases.

Table 2: Socioeconomic Disparities in the Spread of Covid-19 across US Counties

	Total Case Rate in 2020	**Average Daily Cases**
	(1)	(2)
%Blacks	2.500***	0.011***
	(0.891)	(0.0024)
R^2	0.001	0.001
%Whites	-3.931***	-0.007***
	(0.691)	(0.001)
R^2	0.001	0.001
Average Weekly Wages	-1.783***	-0.0048***
	(0.232)	(0.0006)
R^2	0.012	0.009
Per Capita Personal Income ($1,000)	-23.091***	0.063***
	(5.277)	(0.011)
R^2	0.009	0.006
%Less than High School	63.507***	0.171***
	(8.201)	(0.022)
R^2	0.020	0.014
%Some College	26.004**	0.072**
	(10.371)	(0.029)
R^2	0.002	0.002
%Bachelor and Above	-59.221***	-0.169***
	(4.703)	(0.014)
R^2	0.039	0.031
Observations	3,135	3,135

Notes: Each cell represents a separate regression. Robust standard errors are reported in parentheses.

Next, we reexamine the effect of pollution on Covid-19. Using equation 2, Table 3 reports the results for models without and with a linear county trend (columns 1 and 2, respectively). Each independent variable is in a separate row and each cell represents a separate regression. Looking at the full specification of column 2,

one standard deviation increase in CO, Ozone, PM_{10}, and $PM_{2.5}$ is associated with an increase in Covid-19 cases by 0.04, 0.29, 0.35, and 0.11 cases per 100,000 population. Although these effects are marginal and economically small they are significant at 1% level and robust to including or excluding county by time linear trend.

Table 3: The Effect of Criteria Pollutants on Spread of Covid-19

	Outcome: Average Daily Cases (1)	**Average Daily Cases (2)**
Carbon Monoxide	0.0492***	0.0359***
	(0.0052)	(0.0046)
R^2	0.272	0.589
Observations	32,800	32,800
Ozone	0.3841***	0.2957***
	(0.0705)	(0.0549)
R^2	0.152	0.329
Observations	155,151	155,151
PM_{10}	0.4443**	0.3561***
	(0.2020)	(0.0165)
R^2	0.240	0.598
Observations	95,684	95,684
$PM_{2.5}$	0.1411***	0.1053***
	(0.0453)	(0.0256)
R^2	0.308	0.549
Observations	148,483	148,483
County Fixed Effects	Yes	Yes
Month and Day Fixed Effects	Yes	Yes
State-by-Month Fixed Effects	Yes	Yes
County by Day-Month Linear Trend	No	Yes

Notes: Each cell represents a separate regression. Robust standard errors, clustered on the county, are reported in parentheses. All regressions are weighted by the average county population in 2020.

Finally, we report the main results of the paper using equation 3 in Table 4 through Table 7. Interestingly, as areas with a higher share of poor people and minorities reveal higher confirmed cases they also are more susceptible to pollution-driven confirmed cases. The interaction term between pollution measures and blacks (Table 4) and low educated (Table 6) are positive implying that the relationship between pollution and the outbreak of the virus is stronger among these people. On the other hand, the interaction term between pollutants and whites (Table 5), high educated (Table 7) and average wages (Table 8) are negative implying the protective effects against the Covid-19 consequence of pollution among counties with a higher share of whites, high educated, and income. For instance, the marginal effect of one standard deviation increase in PM_{10} on confirmed cases for a 10 percent rise in the share of blacks in a county goes up by 6.49 cases per 100,000 population (column 3, Table 4).

Table 4: The Heterogeneity of the Effects of Criteria Pollutants on Spread of Covid-19 among Blacks

	Outcome: Average Daily Cases			
	(1)	**(2)**	**(3)**	**(4)**
Carbon Monoxide × %Blacks	0.095***			
	(0.015)			
Ozone × %Blacks		0.518***		
		(0.095)		
PM_{10} × %Blacks			0.649***	
			(0.026)	

$PM_{2.5}$ × %Blacks				0.238***
				(0.046)
County Fixed Effects	Yes	Yes	Yes	Yes
Month and Day Fixed Effects	Yes	Yes	Yes	Yes
State-by-Month Fixed Effects	Yes	Yes	Yes	Yes
County by Day-Month Linear Trend	Yes	Yes	Yes	Yes
R^2	0.59	0.33	0.59	0.57
Observations	32,800	155,151	95,684	148,483

Notes: Each cell represents a separate regression. Robust standard errors, clustered on the county, are reported in parentheses. All regressions are weighted by the average county population in 2020.

Table 5: The Heterogeneity of the Effects of Criteria Pollutants on Spread of Covid-19 among Whites

	Outcome: Average Daily Cases			
	(1)	**(2)**	**(3)**	**(4)**
Carbon Monoxide × %Whites	-0.026***			
	(0.003)			
Ozone × %Whites		-0.221***		
		(0.061)		
PM_{10} × %Whites			-0.298***	
			(0.049)	
$PM_{2.5}$ × %Whites				-0.092***
				(0.012)
County Fixed Effects	Yes	Yes	Yes	Yes
Month and Day Fixed Effects	Yes	Yes	Yes	Yes
State-by-Month Fixed Effects	Yes	Yes	Yes	Yes
County by Day-Month Linear Trend	Yes	Yes	Yes	Yes
R^2	0.59	0.33	0.59	0.57
Observations	32,800	155,151	95,684	148,483

Notes: Each cell represents a separate regression. Robust standard errors, clustered on the county, are reported in parentheses. All regressions are weighted by the average county population in 2020.

Table 6: The Heterogeneity of the Effects of Criteria Pollutants on Spread of Covid-19 among Low Educated

	Outcome: Average Daily Cases			
	(1)	**(2)**	**(3)**	**(4)**
Carbon Monoxide × %Low Educated	0.125***			
	(0.019)			
Ozone × %Low Educated		0.594***		
		(0.098)		
PM_{10} × %Low Educated			0.968***	
			(0.025)	
$PM_{2.5}$ × %Low Educated				0.351***
				(0.038)
County Fixed Effects	Yes	Yes	Yes	Yes
Month and Day Fixed Effects	Yes	Yes	Yes	Yes
State-by-Month Fixed Effects	Yes	Yes	Yes	Yes
County by Day-Month Linear Trend	Yes	Yes	Yes	Yes
R^2	0.58	0.39	0.62	0.58
Observations	32,800	155,151	95,684	148,483

Notes: Each cell represents a separate regression. Robust standard errors, clustered on the county, are reported in parentheses. All regressions are weighted by the average county population in 2020.

Table 7: The Heterogeneity of the Effects of Criteria Pollutants on Spread of Covid-19 among High Educated

	Outcome: Average Daily Cases			
	(1)	(2)	(3)	(4)
Carbon Monoxide × %High Educated	-0.015***			
	(0.003)			
Ozone × %High Educated		-0.087**		
		(0.041)		
PM_{10} × %High Educated			-0.124*	
			(0.087)	
$PM_{2.5}$ × %High Educated				-0.087***
				(0.014)
County Fixed Effects	Yes	Yes	Yes	Yes
Month and Day Fixed Effects	Yes	Yes	Yes	Yes
State-by-Month Fixed Effects	Yes	Yes	Yes	Yes
County by Day-Month Linear Trend	Yes	Yes	Yes	Yes
R^2	0.58	0.39	0.62	0.58
Observations	32,800	155,151	95,684	148,483

Notes: Each cell represents a separate regression. Robust standard errors, clustered on the county, are reported in parentheses. All regressions are weighted by the average county population in 2020.

Table 8: Heterogeneity of the Effects of Criteria Pollutants on Spread of Covid-19 based on Average Wages

	Outcome: Average Daily Cases			
	(1)	(2)	(3)	(4)
Carbon Monoxide × Average Wages	-0.029***			
	(0.003)			
Ozone × Average Wages		-0.265***		
		(0.046)		
PM_{10} × Average Wages			-0.342***	
			(0.016)	
$PM_{2.5}$ × Average Wages				-0.098***
				(0.023)
County Fixed Effects	Yes	Yes	Yes	Yes
Month and Day Fixed Effects	Yes	Yes	Yes	Yes
State-by-Month Fixed Effects	Yes	Yes	Yes	Yes
County by Day-Month Linear Trend	Yes	Yes	Yes	Yes
R^2	0.63	0.45	0.71	0.67
Observations	32,800	155,151	95,684	148,483

Notes: Each cell represents a separate regression. Robust standard errors, clustered on the county, are reported in parentheses. All regressions are weighted by the average county population in 2020.

4. Conclusion

Understanding the racial and social disparities in exposure to a pandemic and specifically, the disparities in the effect of pollution on the outbreak of a pandemic are essential for policymakers to design optimal welfare programs and effective restriction orders. In this paper, we explored this aspect of the outbreak of Covid-19 using daily data across all US counties covering all days of 2020. Applying a rich set of fixed effects that also controls for a linear county by time trend, we documented that 1) there are discernible social and demographic disparities in the spread of Covid-19. Blacks, low educated, and poorer people are at higher risks of being infected by the new disease. 2) The criteria pollutants have the potential to accelerate the outbreak of the virus. Among others, these pollutants include Ozone, CO, PM_{10}, and $PM_{2.5}$. 3) The disadvantaged population is more vulnerable to the effects of pollution on the spread of coronavirus.

Specifically, the effects of pollution on confirmed cases become larger for blacks, low educated, and counties with lower average wages in 2019. Overall, these results suggest that the abatement structures should be strengthened during a pandemic with more weight towards areas with a higher concentration of minorities

and poor people. The first policy suggestion is based on the results of pollution and Covid-19. Since people in more polluted areas are more likely to be affected by the novel coronavirus, the spread-prevention strategies of governments should be focused on more polluted areas and those residents that are more prone to the disease. The second policy suggestion is based on the racial difference of the impacts of pollution on Covid-19. Policymakers should weigh more towards poor people, low educated persons, and among minorities since these individuals live or work in more polluted areas and the pollution-covid-19 links are intensified for them.

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Do Narcissists Tend to Reduce Interpersonal Conflicts in Organizations? The Effects of Abusive Supervision on Ostracism and Interpersonal Conflicts

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Abstract: This study aims to examine the relationship between abusive supervision (ABS) and interpersonal conflicts (IPC) with the mediating role of key variables, ostracism (OST), and moderating role of narcissism (NAR) among the service industry of Pakistan. A convenient sampling technique is used for data collection from employees of public and private commercial banks of Pakistan through a self-administered questionnaire. A total of 650 questionnaires were distributed with a response rate of 38%, as 247 valid responses were received. The findings validated the proposed model with a significant correlation between ABS and OST, provoking IPC in organizations. The mediating role of OST is examined. Full mediation between ABS and IPC is revealed. Moreover, a subordinate's NAR moderated and weakened the positive relation of ABS and OST and OST and IPC. This study will help employers devise a methodology to minimize IPCs among employees after discovering the reasons for conflicts among them. One reason specified by this theory is ABS. Employers can look upon this study to mitigate conflict in their organization, hampering their strategies to progress. Eventually, this study will contribute to reducing a major threat of the organizations where their manpower is enforced towards burnouts due to the factors discussed here.

Keywords: *Abusive supervision, ostracism, interpersonal conflicts, narcissism, sociometry theory, self-determination theory.*

1. Introduction

During the last two decades, huge-sized business organizations came into prominent existence in the global scenario. This situation has created a need to focus on skilled and motivated human resources rather than increasing the workforce because it has become very costly with the industrial boom in Europe, Asia, and America. Therefore, the concept of happy employees is very successful in increasing the productivity of industries. Additionally, with the advent of a new era, there has been tremendous research on the effects of leadership styles on employees. A large amount of empirical research is available on the positive impacts of leadership on employee attitudes, behavior, and psychological health. The survival of business in today's highly competitive and adaptive ambiance is inevitable for those firms who are more productive and ready to accept the challenges of the modern world. This globalization of business is subject to vigorously changing customer demands and an ever-increasing high level of satisfaction. To meet such targets of customer satisfaction, the leading organizations in service industries have modified and enhanced their business processes and service delivery channels. Hence, orthodox administrative and supervision methodology is no longer an unexpected and successful methodology. Likewise, the stimulus of violent supervisory methodology, practiced in one of the service industries like the banking sector of Pakistan, has not been considerably studied.

It is unfortunate because the banking sector of Pakistan constitutes 58% of the service industries (Pakistan Economic Survey, 2015-2016) and contributes a considerable amount to GDP every year. Globally, services industries now occupy 60% of the global GDP as it serves millions of people worldwide (Pakistan Economic Survey, 2015-2016). So, in this context, any form of rude supervision needs to be examined as it may undermine the productivity of a valuable industry domestically and internationally. Experiencing mistreatment at work is an unfortunate reality for many employees. Mostly angry and dissatisfied customers show abusive behavior (Schat, Desmarais & Kelloway, 2006; Greenbaum, Mawritz, and Quade, 2017). There is also substantial, empirical, and anecdotal evidence to suggest that employees often deal with oppressive and abusive supervisors. This unmannerly rude behavior of the supervisor denotes subordinate's perceptions of the extent to which supervisors are engaged in the sustained display of hostile verbal and nonverbal behaviors, excluding physical interaction (Tepper, 2000; Valle, Kacmar, Zivnuska & Harting, 2018). Examples

of behavior described by this definition include invasion of privacy, public ridicule, angry tantrums, shouting, and coercion (Malik, Shahzad & Waheed, 2020).

Additionally, the consequences of ABS are significant for establishments and workforces alike. For instance, supervisor's aggression has been linked with decreased career contentment and executive obligation (Schat et al., 2006; Greenbaum et al., 2017), reduced business output (Valle et al., 2018), and increased turnover and absenteeism (Tepper, 2000; Kluemper, Mossholder, Ispas, Bing, Iliescu & Ilie, 2018). Past research has also connected ABS to juniors' divergent conduct (Kohli, & Mitchell 2007; Wang, Du, Yu, Meng & Wu, 2020) and underprivileged emotional comfort (Mitchell & Ambrose, 2007; Yagil, 2006; Mackey, Frieder, Brees, & Martinko, 2017). So, personnel who work for unmannerly supervisors are inclined to be less content, less productive, and less vigorous, and subsequently, organizations perform less effectively. Recent research has also posed significant importance on the relatively destructive and darker side of leadership that has emerged from emotional exhaustion or the highly impulsive nature of the supervisors (Lam, Walter, Huang; 2017, Carson, Hoobler, & McAllister; 2017; Leary, Tambor, Terdal & Downs; 1995). One of the destructive practices of leadership is ABS, which is examined in this study. Research also suggests that abused workers somewhat consider their institute responsible.

For their supervisor's disregard, belittle, or ruthless behavior (Tepper, 2000; Schyns, Felfe & Schilling, 2018). Literature has considerably illustrated the destructive outcomes of invasive direction for subordinates' psychosomatic comfort and performance productivities (Krasikova, Green & LeBreton, 2013; Mackey et al., 2017). Consequently, abused workers tend to suppress categorical behavior in favor of the organization. The reason is depression, frustration, and anxiety caused by ABS (Haggard, Robert & Rose, 2011; Mackey et al., 2017). A similar situation prevails in public and private organizations of Pakistan. In organizations, the abusive behavior of supervisors is considered normative. Abused workers are not supposed to indulge in any revenge activities (Al-Hawari, Bani-Melhem, & Quratulain 2020; Wang et al., 2020). As a result, they develop a self-defensive mechanism like OST, leading towards worst outcomes like IPC among workers. In Pakistan, the primitive administrative styles and outdated policies stimulate the employees and organizations towards counterproductive work behavior. It is also one of the reasons for decreased employee vigor and enthusiasm towards their work responsibilities. As a result, employees and the organization fail to survive and confront the global market competition due to lower productivity. Ultimately, this results in a loss of already scarce resources.

A plethora of research has also suggested that a new generation of workers will be primarily diverse from the preceding one for their demands and expectations at work. This new generation feels more entitled and expects better treatment at work than others (Smola & Sutton, 2002). The psychological entitlement was found productive in a survey conducted by Smola and Sutton (2002). This sense of entitlement invigorates a higher self-efficacy that is useful to confront any hostile or unpredictable situation in a better way. These employees are resilient at nerves and have such qualities that are inevitable to face any unexpected situation. This sense of entitlement is often at its peak as NAR admiration, which is also the construct of interest in the present study. NAR is well-defined by magnificence, relational demoralization, empathic troubles, and a sense of entitlement (Holtzman, Vazire & Mehl, 2010). This construct, NAR, captivates the interest of a layman and a researcher alike due to its negative and positive facets at the same time. Narcissists incline to display outbound and affable performances that are to harvest them an optimistic first impression. They also lean towards display self-centered and unkind actions that are likely to get them into struggle (Reina, Zhang & Peterson, 2014; Cheshure, Zeigler & Sauls, 2020; Dong, Wen, Zhang, Fang, 2020).

Following the incongruent societal significances, narcissists are "disagreeable extroverts" (Furnham, Richards & Paulhus, 2013). So, accordingly, the purpose of the present study is threefold: (1) the author has strived to reveal the effect of hostile supervisory methodology on employees' work behavior (2) how OST threatens the four fundamental human need: need to belong, need for high self-esteem, the need for self-control on one's social needs and need for a meaningful existence; and (3) author will deduce the implications for not considering narcissists always as a social evil and threat for organizations but at times they may be a fruitful group of individuals in the form of narcissists admiration in a hostile situation as a moderator and this aspect has revealed in past literature. Various authors have also studied the impact of narcissistic admiration as a moderator on personnel self-esteem (Fatfouta, Zeigler & Schroder 2017; Reina et al., 2014, Furnham et al.,

2013). But the moderating effect of NAR between ABS and OST, between OST and IPC, is rarely studied by past researchers. Similarly, there is little reference available in the past about the mediating role of OST between NAR and IPC. Therefore, this study contributes significantly to the current body of knowledge by testing these effects in the banking industry.

A convenient sampling technique is used to gather the statistics from commercial and scheduled banks of Pakistan. The population of interest for the current study comprised a staff of programmed local banks functional in Pakistan. The aggregate figure of workforces in public and private banks is 106659. It is also the estimated population size of the present study. After obtaining a list of operating banks from the State Bank of Pakistan (2019), the author applied a convenient sampling technique on the population to select a sample. Out of 34 commercial banks in Pakistan, the author has nominated the top 10 banks to collect data. They include NBP, HBL, UBL, MCB, Faysal Bank, Bank Alfalah, Standard Chartered Bank, Meezan Bank, Bank Al-Habib, and Soneri Bank. Table 1 shows the distribution of respondents of this study among public and private sector banks of Pakistan.

Table 1: Distribution of Respondents among Public and Private Sector Banks

Scheduled Banks Operating in Pakistan

	Public Sector			**Private Sector**		
	Nationalized	**Specialized**	**Provincial**	**Privatized**	**Private**	**Total**
No. of Banks	2	4	2	4	22	34
No. of Employees *	14610	8235	4301	40467	39046	106659
%age of Employees	13	8	4	38	37	100
Sample Proportion	232	148	125	116	29	650
No. of Banks approached	1	2	1	2	4	10
No. of Respondents	98	52	37	31	29	247

Table 2: Demographics and Comparative Situation of Number of Banks and Branches in Pakistan (June 2017)

Type of Bank	**Banks**	**Branches**
1. Pakistani Banks	30	3,029
i. Public Sector	09	2,986
a. Commercial	05	2,360
b. Specialized	04	626
ii. Domestic Private	21	10,043
2. Foreign Banks	04	10

Variable	**Category**	**Frequency**	**Percentage**
Gender	Male	119	48.8
	Female	128	51.2
Age	25 or below	38	16.4

	26-30	32	12.8
	31-35	16	6.4
	36-40	80	32.0
	41 or above	81	32.4
Education			
	Bachelors	122	50.0
	Masters	99	39.6
	Others	26	10.4
Monthly Earnings	Less than 20k	18	7.2
	20-30k	24	9.6
	31-40k	40	16.0
	41-50k	90	37.2
	51 and above	75	30.0

Another perseverance of this study is to scrutinize the outcomes of ABS. One such negative phenomenon studied here is OST. For this purpose, we draw on Leary et al. (1995) sociometry theory. It posits that people are motivated to protect and enhance their self-esteem linked to achieving the desired results. OST is categorized as a subjective and perceived exclusion, disrespect, and ignorance or sometimes self-imposed isolation by the employee himself as a coping strategy. Also, this phenomenon of OST or social exclusion shortened the individual need for belongingness in particular (Gardner, Pickett, Jefferis, & Knowles, 2005) ultimately increases psychological stress that results in a reduction in anti-social behaviors (Holtzman et al., 2010). This approach is consistent with the sociometry theory. The chief motive for choosing the banking industry is that banking and financial institutions have knowledgeable immediate employees. Their staff is engaged with a high-level of supervisors to improve their performance and achieve their targets. The banking industry staff is specialized that works under high pressure from hierarchies to maintain the service level. Being a highly specified and professional sector, a strict level of supervision is evident in this sector. Ultimately, any orthodox supervisory technique may also be manifested in this industry and easily captured by a research study. This cognitive has made the banking industry the most applicable division for the current study.

2. Literature Review

Abusive Supervision and Interpersonal Conflicts: Tepper (2007) has done a great deal of work in exploring sarcastic supervision and its consequences. The most common manifestation of destructive administration suggested by his work was supervisor nonphysical, belittle behavior. He examined many related terms like public ridicule and taking credit for subordinate's success. Tepper (2007) pointed out that the existing literature that addresses ABS is not well integrated as it overlaps with varying degrees of supervisor's behavior and lack of unifying theoretical framework. According to him, these problems can inhibit the development of knowledge in this significant area. He supported detailed research explaining and evaluating the pros and cons of the existing literature until that date. The study of Tepper (2007) has differentiated various forms of mocking surveillance, like generalized hierarchal abuse, petty tyranny, victimization, and workplace ABS. He has also added valuable literature explaining the consequences of astringent scrutiny. For example, he argued, destructive outcomes may evolve from a supervisor's abusive behavior like subordinates' resistance and deviant behavior.

Subordinates' aggressive behavior, decreased performance contributions, and psychological distress (Ambrose & Ganegoda, 2020). These deleterious outcomes lead to obstructions that result in arguing and conflicting with their fellow workers like IPC. All the stated destructive outcomes of insufferable supervision examined by these scholars have one thing in common. It leads to psychological distress in employees that causes a decline in performance outcomes and motivation to work (Malik et al., 2020). This literature has left one aspect uncovered how the abused workers tend to behave with their colleagues and peers, which is

examined by this study. Based on this literature, the author may argue that abused, demotivated, less performing, and psychologically depressed individuals adopt a coping mechanism of conflicting with their fellow workers. These depressed employees are more prone to IPC than the other ones. So it is hypothesized:
Hypothesis 1: Abusive supervision positively relates to interpersonal conflicts.

Abusive Supervision and Ostracism: Workplace OST refers to the extent to which an individual perceives that he is ignored or excluded by others in the workplace (Tepper, 2000; Williams & Nida, 2011). Workplace expulsion is collaborative exploitation taken as adverse consequences on workers' decisiveness toward labor. Such consequences include inferior work gratification, advanced withdrawal intentions (Kidwell, Eddleston & Kellermanns 2018; Ferris, Lian, Brown & Morrison, 2014), condensed individual benefits, such as expressive tiredness and emotional suffering (Wu, Yim, Kwan & Zhang, 2012). Due to the deleterious attitudinal bearing, workplace OST can be harmful to the structural efficacy of workers. Ostracized employees may decrease their assignation in citizenship behavior that values others separately or the institute jointly (Kidwell et al., 2018). However, examination studies propose that office OST can upsurge members' destructive conduct to advantage others and the work team, to be acknowledged (Wu et al., 2012; Kidwell et al., 2018). The findings of various studies recommend investigation of the circumstances in which workplace OST reduces workforce citizenship conduct. So far, numerous views have been taken into account to discharge the relationship between office OST and workers' voluntary work behavior in favor of his institution's benefit.

Emerging from the concept of self-regard hazard standpoint Ferris et al. (2014) speculated and established that when detested, team workers are exposed to lower self-worth and affianced lower in volunteer occupational commitment to be regular with their scarce self-assessments. Grounding on an assets exhaustion perception, Derfler, Pillutla, and Thau (2010) and Rudert, Janke, and Greifeneder (2020) reported, being ostracized drains members' supervisory possessions and indicates a lower level of commitment at work, and accordingly, less in-role behavior. Inconsistency with this cognitive, Derfler et al. (2010) also proposed that when an official is ostracized, the possibility of other work options motivates a response to disengage from the current relationship to pursue others. On the contrary, the adverse impressions of business place OST on institutional truthfulness and virtuous deeds will be insubstantial for workers with low apparent employment suppleness because those team members are less proficient in discovering replacements to mollify their belongingness desires. As recommended by social identity theory (Tajfel, 2010), when people are not satisfied with the position of social assemblage, they are abandoned by the social group when they feel they have attractive employment alternatives (or advanced alleged work flexibility) (Tepper, 2000).

According to self-determination theory (Deci & Ryan, 2011), there are three spiritual essentials of a human: competence, relatedness, and autonomy. The hostile behavior of the supervisor threatens the psychological needs of employees. First, the belittle behavior of the supervisor suppresses the employees' ability to complete a task effectively. Thus, suppressing workers' sense of competence. Second, abused workers' sense of relatedness is reduced by humiliating and degrading them in front of others as they are not respected members of the association (Ferris, Brown & Berry, 2008; Rudert et al., 2020). Third, facing ABS, the workers have to behave according to the aspiration of their hostile supervisor (Wu et al., 2012), minimizing the demean situation, subordinates' autonomy is damaged. So it is concluded accordingly that the absence of these needs is detrimental to the employees' perceived behavior. Dissatisfied psychological needs result in devastating emotional instability and frustration in workers, such as aggression and behavioral deregulation (Zhao, Peng & Sheard, 2013; Williams & Nida, 2011). Ultimately the deprived and frustrated subordinates are likely to show more controversial behavior like OST. Thus, suppressing the psychological needs of individuals by ABS results in isolation of the workers. Accordingly, it is hypothesized:
Hypothesis 2: Abusive supervision positively relates to ostracism.

Ostracism and Interpersonal Conflicts: Being secluded by co-workers and left out from the team is a heart-throbbing practice. Employees in the United States have officially described collective segregation (Ferris et al., 2014). OST at the workplace occurs on every occasion when an individual or group of individuals the "ostracized" disrespects to take actions that engross another operative the "ostracize" when it is accustomed and appropriate to do so (Robinson, O'Reilly & Wang, 2013; Dong et al., 2020). OST is diverse from dynamic customs of impoliteness to other harassments, oppression, and regulatory exploitation in two primary

methods (Ferris et al., 2008; Zhang, Xie, Xue, & Xu, 2020). First, relegation is short in communicative strength. For instance, rejecting an outranked from a workgroup interface would be an elusive gesticulation paralleled to overtly admonishing him for dwindling to meet a cut-off date. Secondly, OST deals with uncertainty. Offenders can effortlessly rationalize their manners as benevolent, a conventional omission with no related unkindness. Even though exile is an elusive method of exploitation, rising indications have established that being deprived of a societal link either by an individual or a group results in injurious endings for the target (Robinson et al., 2013). Similarly, as recommended by the social identity theory, it is evident that conflicts arise as various groupings are existent within institutions (Ashforth & Mael, 1989), when ethics, necessities, welfares, thoughts, and objectives depart, persons are apt.

To affect by others that can eventually deleteriously affect relational dealings (Barki & Hartwick, 2004). Existing scholarly studies have investigated that alleged distinction is inter-connected to conflict (Barki & Hartwick, 2004). Henceforth, clashes indeed ascend due to the divergence of collections as in-group associates and out-group adherents will grow undesirable ideas about the other congregation. In this concept, when workers are ostracized, they probably distinguish themselves to be less exemplary, fit to the out-group and be different from other decision-making members. As part of the out-group, ostracized characters will learn to show that their principles and opinions are unlike others, such as in-group associates. The deteriorated psychological behavior of detested individuals destroys the firm's image (Lustenberger & Jagacinski 2010). The available literature on OST suggests that repeated acts of OST result in ultimate depression and severe maladaptive behaviors by the workers (Kidwell et al., 2018; Harvey, Stoner, Hochwarter & Kacmar, 2007). Research on OST suggests that employees' destructive behavior is understandable, response to social OST (Sharma, 2015), and workplace deviance (Ferris et al., 2008; Lustenberger & Jagacinski, 2010). This deviance may also be in the form of IPC as the workers try to minimize the depression and frustration caused by OST by conflicting with their fellow workers. So, accordingly, it is hypothesized:
Hypothesis 3: Ostracism positively relates to interpersonal conflicts.

Mediating Role of Ostracism between Abusive Supervision and Interpersonal Conflicts: According to self-determination theory, the abused workers feel threatened by their hostile supervisor for suppressing their basic psychological needs. The hostile supervisor ostracizes the individuals by a feeling of terror and menace (Hitlan, Kelly, Schepman, Schneider & Zarate, 2006). Workers are consequently diverted by this exploitation and lose vigor to fulfill their job description. Fear and depression dominate them. They try to defend their inner stress resulting from ill-treatment from the social environment of their workplace. Thus, isolation further results in undermining employees' extra-role behavior. The employees are attracted to exhibiting destructive behaviors like indulging in conflicts with their co-workers. They feel less worthwhile to invest extra-role efforts and engage in damaging behaviors like IPC. Consequently, the employees fail to deliver the best possible service to their customers, which is detrimental to the organization (Tepper, 2000).

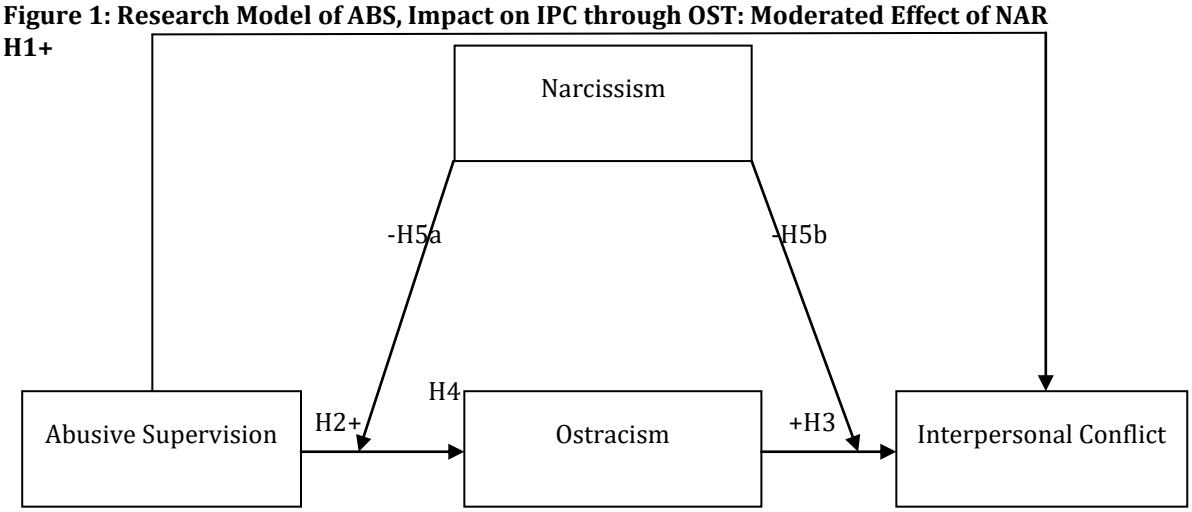
There are numerous studies where OST is considered an interpersonal stressor, and very few consider this construct as a mediator. Fatima, Raja & Jahanzeb (2017) have conducted a study where OST mediated organizational deviance and job stress. Workplace OST is positively related to employees' negative work behavior (Zhao et al., 2013) that causes stress and frustration. There are very few studies that examined workplace OST as a mediator. Hence, the emphasis of the current examination is to investigate the mediating role of OST. Ultimately, abused and ostracized workers lack absorption and passion for completing a task efficiently. Threatened by the hostile supervisor, ostracized workers tend to use their energies against the organization by indulging in IPC with the workers. Hence, the author argues; that ABS creates the feeling of OST in individuals which leads to IPC in an organization. So based on these arguments, it is further hypothesized:
Hypothesis 4: Ostracism fully mediates the positive effect of abusive supervision on interpersonal conflicts.

The Moderating Role of Narcissist Personality: Holtzman et al. (2010) have defined the NAR as grandiosity, interpersonal abuse, empathic difficulties, and a sense of entitlement. Due to the bipolar nature of narcissism, it is equally fascinated by common men and classical researchers. On the one hand, narcissists exhibit social behavior that is likely to be a positive aspect. On the other hand, they also exhibit selfish and inconsiderate behaviors that ultimately put them into conflict (Holtzman et al., 2010). Hence, according to the

contradictory shared concerns, narcissists are categorized as "disagreeable extroverts" (Watson, 2012). As discussed earlier, contradictory characteristics of the narcissist are defined by various scholars, like Back, Kufner, Dufner, Gerlach, Rauthmann, and Denissen (2013) have developed the "Narcissistic Admiration and Rivalry Concept" (NARC). This concept successfully explains the two contradictory civic schemes by which narcissists' impressive self-visions can be preserved extrovert, assertive, and self-enhanced behavior (narcissistic admiration) and the predisposition for incompatible self-preservation, arrogant behavior (narcissistic rivalry).

It is evident from the researches that narcissist admiration is destructively linked to the inclination to privacy, while narcissistic rivalry is positively related to preferences for solitude. Hence, accordingly, the author can argue that "people high in narcissistic admiration have a higher desire to spend time with people around. Conversely, people high in narcissistic rivalry have a low desire to spend time with people; rather, they feel happy spending time with themselves" (Fatfouta et al., 2017). Based on the above reasoning, a narcissistic personality will moderate the relationship negatively between OST and IPC. By communicating with people and raising a voice against abusive supervisors, narcissists can make a difference (Levi & Bachar, 2019; Watson, 2012). Because people high in narcissistic admiration have high self-esteem, so they confront the OST caused due to hostile supervisors in much better and healthy social views and minimize the damage caused by this hostility (Moeller, Crocker, & Bushman, 2009). So it is hypothesized: **Hypothesis 5a:** Narcissism moderates the positive effect of abusive supervision and ostracism such that positive relationship is weaker when employees have high narcissist admiration rather than low. **Hypothesis 5b:** Narcissism moderates the positive effect of ostracism and interpersonal conflicts such that positive relationship is weaker when employees have high narcissist admiration rather than low.

Figure 1: Research Model of ABS, Impact on IPC through OST: Moderated Effect of NAR



3. Methodology

Sampling Design & Procedures: The author has collected data from the objective employees of private and commercial division banks of Pakistan. By using a convenient sampling technique, the author distributed 650 opinion polls. Out of 650 opinion polls, the author has considered 247 valid responses for analysis. The feedback rate for these 247 reliable replies was 38%. To expand the feedback proportion, the author deliberated the bank staff as non-respondents if they did not retort despite a couple of follow-up appointments and three prompt calls. Fey and Denison (2003) have used a similar method of data collection. The questionnaire delivered to the respondents consisted of two sections: section 1 encompassed demographic and structural appearances of the respondents, and section 2 consisted of the concepts of the study to be examined.

Measures: To measure and quantify abusive supervision, the author has used a 15 item scale established by Tepper (2000). This scale was previously used in a study by Aryee, Chen, Sun, and Debrah (2007) and demonstrated scale reliability and validity. The reactions were attained through 5 points Likert scale ranging

from 1=strongly disagree to 5=strongly agree. (Sample item: My supervisor ridicules me). Assessing narcissism, the author has used the 'Narcissistic Admiration and Rivalry Questionnaire" (NARQ; developed by Back et al. (2013). The NARQ includes 18 items that include 9 items measuring individual differences in narcissistic admiration (Sample item: I am great), excluding the 9 items of narcissistic rivalry as the author has studied only one dimension i.e. narcissism admiration. All items were rated on 6 points Likert scale 1= Not agree at all to 6= Agree.

Fatfouta et al. (2017) have confirmed the NARQ scale's validity and reliability in a recent study. The author computed Ostracism by a 13 item scale developed by Ferris et al. (2008). The author has recorded the response by a seven-point Likert scale ranging from 1= Never to 7= Always. Ferris et al., (2008) verified workplace OST to be a uni-dimensional factor structure. This scale has been used in several recent and old studies and demonstrated its reliability and validity. It was used by Leung, Wu, Chen, and Young (2011) and by Gkorezis and Bellou (2016). (Sample item: People ignore me at work). Finally, a 4 item scale, developed by Spector and Jex (1998), was used to enumerate interpersonal conflicts. Responses were documented by the author using a 6-point Likert-scale that ranged from 1= Never to 6= extremely often. Mulki, Jaramillo, and Locander (2006) have confirmed the validity and reliability of this scale. (Sample item: I get into arguments with others at work).

4. Results and Discussion

Table 3 shows descriptive statistics, bivariate correlations, and alpha reliabilities. Table 4 represents the results of the regression analysis. Hypothesis 1 states that ABS is positively related to IPC. Results supported this relationship and found that ABS was positively related to IPC, as indicated by the correlation outcomes showed in table 3. ABS had a positive and highly significant relationship with IPC (.246**), also the regression coefficient in table 4 strengthens the above statement ($\beta = .334$, $p < .05$). This result supports the current study, revealing an increase in ABS will ultimately increase IPC, supporting hypothesis 1. A previous study has also supported the results, where the abusive supervisor confronts a stronger resistance and interpersonal conflicts of subordinates. Ultimately, it results in work and family conflicts (Tepper, 2000; Al Hawari et al., 2020; Williams & Nida, 2011). Hypothesis 2 states that ABS is positively related to OST, which is also supported by the results, as the correlation coefficient for this relationship is (.454**) also indicated by the regression coefficient ($\beta = .455$. $p < 0.05$). This relationship is confirmed by a recent study where ABS is positively associated with perceived OST (Wang et al., 2020; Ambrose & Ganegoda 2020).

Similarly, hypothesis 3 was also supported by the results, as the correlation coefficient is (.395**) and regression coefficient ($\beta = .536$, $p < 0.05$) confirming that OST is positively related to IPC (Ashforth & Mael 1989; Barki & Hartwick, 2004). Ferris et al. (2008) also discovered a similar relationship between OST and workplace deviance, more likely in the form of disputes and conflicts among co-workers. Hypothesis 4 states that OST mediates the relationship between ABS and IPC. A four-step linear regression analysis, based on Baron and Kenny's (1986) method, was used to check this relationship. In the first step, ABS was regressed with IPC, and the relationship was significant ($\beta = .334$, $p < .05$). In the second step, the author regressed ABS with OST, and the relationship here was also significant ($\beta = .455$, $p < 0.05$). In the third step, OST was regressed with IPC, and the relationship was significant ($\beta = .536$, $p < 0.05$). In the fourth and final step, the author performed a hierarchical regression analysis where ABS was regressed with IPC, controlling the impact of OST, resulting in a significant impact ($\beta = .484$, $p < .05$). The coefficient beta after controlling the mediating variable was low. Hence, according to hypothesis 4, OST will mediate the relationship between ABS and IPC. Fatima et al. (2017) have confirmed the mediation role of OST, where OST mediated between organizational deviance and job stress.

Table 3: Descriptive Statistics, Reliabilities, and Correlations among Variables

Constructs/variables	Mean	SD	1	2	3	4
1 Abusive Supervision	3.59	0.73	(0.92)			
2 Narcissism	3.48	0.71	(0.89)			
3 Ostracism	3.35	0.73	.454**	(0.88)		0.395**
4 Interpersonal Conflict	3.41	0.91	.246**		(0.88)	

Table 4: Regression Analysis for Mediation

	Ostracism			IPC		
	B	**R^2**	**ΔR^2**	**B**	**R^2**	**ΔR^2**
Predictors						
Direct effects						
Step 1						
ABS	0.455*	.206	.206*	0.334*	0 .060	.
Indirect effect						
Step 1						
OST				0.536*	.156	
Step 2						
ABS				.484*	.162	0.006

Notes: N = 247 *p <0.05.

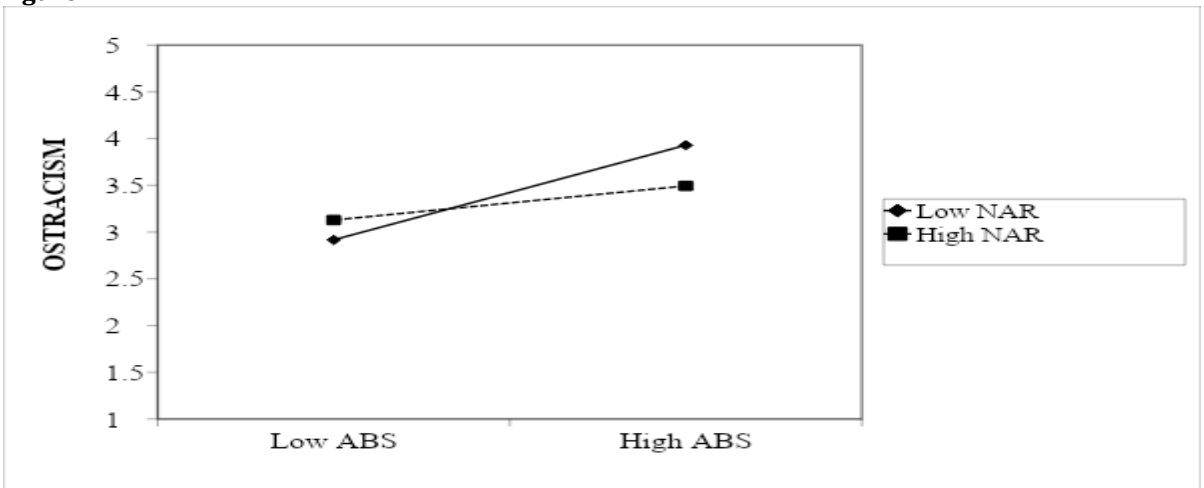
Moderation Analysis: To test the moderation effects of a variable; two-three steps of hierarchical multiple regression methods have been used. Cohen, West, and Aiken (2003) have prescribed this regression method. There are no control variables in the current study. The dependent variable was regressed with a demographical variable to control its effects. The author then added the independent variable in the regression equation, and an interaction term was created by multiplying the independent and moderating variables. The author then entered the values in the regression equation to find the incremental increase in the variance. A significant regression coefficient linked with the interaction term represents the moderating effect of the selected variable. To interpret the interaction model in detail, the author has plotted the three-way interaction of variables. The author has plotted the relationship between ABS and OST at a high and a low level of NAR according to the recommendations of Aiken, West, and Reno (1991). A quick and visual indication of three-way interaction is being provided by figure 1 that signifies the angle between two lines, specifying that the relationship between ABS and OST is strong when an employee had low NAR than when he had high NAR. Consequently, a weaker relationship between ABS and OST at higher NAR was confirmed (Valle et al., 2018). Table 5 & 6 incorporates moderation results.

Table 5: Moderated Regression Analyses (Model 1)

		OST	
Predictor	**B**	**R^2**	**ΔR^2**
Step 1			
ABS	0.478*		
NAR	-0.189*		
Step 2			
ABS × NAR	-0.307*	0.294	0.055

Notes: N = 247. *p < .05

Figure 2



The above graph shows that the relationship between ABS and OST is strong and significant for employees who are lower on NAR (Fatfouta et al., 2017). The relationship loses strength for employees high on NAR. Figure 2 shows that before the point of intersection, the relationship between ABS and OST is strong at a higher NAR. But after the interaction, this relationship becomes weaker at higher NAR. This interaction pattern is consistent with hypothesis 5a that is, ABS is more positively related to OST when NAR is low but is less positively linked to OST when NAR is high.

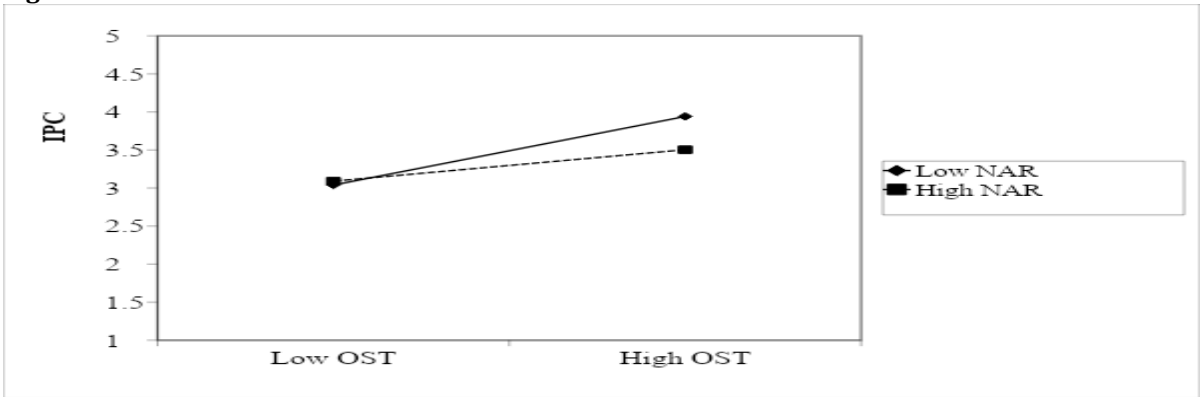
Table 6: Moderated Regression Analyses (Model 2)

		IPC	
Predictor	**B**	**R^2**	**ΔR^2**
Step 1			
OST	0.515*		
NAR	-0.167*		
Step 2			
OST × NAR	- 0.23*	0.225	0.055

Notes: N = 247. *p < .05

Likewise, the stated conditions of moderation are evident in Tables 5 and 6. The moderation results show that NAR moderates the positive relation of ABS and OST and OST and IPC. The employee exhibit contradictory work behavior, OST, due to stress created under an abusive supervisor; ultimately, they are likely to release their frustration on their fellow workers resulting in a skirmish situation in the form of IPC. The results confirm that if the subordinate is a narcissistic personality, he will handle the situation well due to high self-efficacy and self-confidence. Hence, a person having narcissistic admiration qualities will moderate negatively (B= -0.307, P<0.05) the positive relation of ABS and OST, reducing the contradictory work behavior in organizations (Levi & Bachar 2019; Valle et al., 2018). Likewise, NAR moderates the relationship between OST and IPC (B= -0.230, P<0.05). Employees defying ABS are inclined to display OST. As OST is non-predictable comportment, it provokes workforces with innovative tasks and perceptions; hence team workers necessitate sustenance from governance to defy the existing state of affairs (Holtzman et al., 2010). Narcissist admiration and narcissist rivalry are two characters of narcissism; the author has examined the moderated impact of only narcissist admiration on the current model with the worker's perspective.

Figure 3



The above graph shows a significant, positive, and strong relationship between OST and IPC when NAR is lower. On the other hand, the relationship between OST and IPC is weaker when NAR is higher. The angle between the two lines is greater when employees had lower NAR. Hence, figure 3 shows the relationship between OST and IPC is weaker at high NAR. The above interaction is consistent with H5b, i.e. OST is more positively linked to IPC when NAR is lower but is less positively related to OST when NAR is higher.

Moderating Role of Narcissism: In the perspective of innovativeness, supervisors demonstrating ABS threaten and challenge the status quo. It may express psychological anxiety and frustration in workforces to disagree with their supervisor and speak out about novel methods of accomplishing work activities. Consequently, in the context of organizational citizenship behavior, circumstantial aspects play a substantial role in encouraging personnel to exhibit extra-role behavior (Ferris et al., 2014). One feature is the workers' association with their supervisor that openly connects with the team worker's state of mind. Hence, with compassionate and supportive management, workers avoid contrary thinking like OST and IPC and willing to take risks to complete tasks assigned by the administration (Ferris et al., 2014; Williams & Nida, 2011). Furthermore, employees with high narcissistic admiration qualities have very high self-esteem. Due to the high self-efficacy personality trait, a narcissist worker will demonstrate more ethical behavior than a worker with low self-esteem and high narcissistic rivalry traits.

The author has examined the moderating role of narcissistic admiration so; a worker with high narcissistic admiration shows more ethical work behavior and does not indulge in any counter-productive activity like OST or IPC. Therefore a narcissist perceives more support from their supervisor and does not take his supervisory commands as hostile behavior. Narcissist employees often convince their supervisors to consider workers' views in organizational decisions, use rewards and benefits to encourage ethical work behavior, improve their autonomy (Greenbaum et al., 2017), show apprehension for their staff, and accept their mistakes (Ferris et al., 2014). Such governance directs indications about what is essential and guides behavior (Valle et al., 2018). Employees with narcissistic admiration traits cultivate novel work means that show expansion and enhancement in performing diverse activities (Reina et al., 2014). Hence, NAR moderates negatively the positive relationship between ABS and OST as well as OST and IPC. Fig 2 and Fig 3 showed that NAR moderated the ABS and OST relationships and OST and IPC relationships.

Discussion

The results designate that ABS is positively correlated to IPC (B= 0.246, P< 0.05) and OST (B=0.455, P<0.05). While OST is also positively related to IPC (B=0.454, P<0.05), and OST mediate liaison between ABS and IPC. In regression analysis for mediation, the independent variable ABS, when regressed with the dependent variable, IPC, resulted in statistically significant results (B=0.334, P=0.05). Additionally, the independent variable ABS regressed with the mediator of the present study OST also yielded significant results (B=0.536, P<0.05). While when the author regressed the dependent variable IPC on independent variable ABS and mediating variable OST, the mediator OST generated a significant impact on the dependent variable (B= 0.484, P=0.001), and the independent variable ABS became an insignificant predictor (B=0.114, P=0.205) to

show the full mediation. Similarly, in moderation analysis, NAR moderates the positive relationship between ABS and OST such that positive association is weaker when staffs have extraordinarily high narcissist admiration rather than low. The results of the interaction term are significantly proving moderation. The incremental increase in the variance explained with the addition of an interaction term shows the moderated effect of NAR. As the regression coefficient associated with the interaction term is significant.

It shows the moderating effects of the selected variable (B= -0.307, P<0.05). Similarly, the regression coefficient associated with the interaction term two is also significant (B= -0.230, P< 0.05), representing the moderating effect of NAR on the relationship between OST and IPC such that it weakens the positive relationship between them. Hence, NAR negatively moderates and weakens the positive relation of ABS-OST as well as OST-IPC. ABS employs psychologically damaging impacts on workers' emotional, attitudes, spiritual and physical health. It is inappropriate interpersonal behavior that creates emotionally tense organizational behaviors and crucial interpersonal relations of workers. An offensive supervisor threatens three psychological needs of employees. First, the supervisor's belittle behavior reduces the worker's ability to complete a task effectively. Thus, suppressing workers' sense of competence. Second, abused workers' sense of relatedness is reduced by humiliating and degrading them in front of others as they are not respected members of the organization. Third, the workers behave according to the aspiration of the hostile supervisor to minimize the demean situation. Hence, the subordinates' autonomy is damaged.

5. Conclusion and Recommendations

This study revealed a statistically significant and positive impact of ABS on IPC and uncovered a relatively stronger relationship between ABS and IPC. The author found that dis-satisfied psychological needs result in emotional instability and frustration in workers, such as aggression and behavioral deregulation. Ultimately the deprived, frustrated, and abused subordinates are likely to show more controversial behavior like OST. Thus, suppressing the psychological needs of individuals and resulting in the isolation of the workers. Furthermore, this study concluded that due to higher self-esteem conceited individuals are motivated to show less OST, hence are less likely to indulge in IPCs at the workplace. The results also confirmed a positive relationship between OST and IPC. It has been revealed that an increase in OST leads to an increase in IPC.

Additionally, the author has also achieved the objective of checking OST as a mediating variable as results endorsed full mediation of OST between ABS and IPC. In context with narcissism, employee-facing ABS will confront OST differently. NAR admiration employee is more social than NAR rivalry. A narcissistic subordinate will positively deal with ABS and will not ostracize himself as he is people-loving by nature. Ultimately, a narcissist weakens the relationship between ABS and OST and the relationship between OST and IPC. Therefore, it is pertinent and consistent with the results of this study that narcissistic individuals tend to reduce the possibility of IPC because they are high in self-esteem and can deal with the situation accordingly. Hence, the author concluded that NAR moderated the positive relationship between ABS and OST and NAR weakens the positive relationship between OST and IPC.

Theoretical Implications in Organizations: The current research has many contributions to the existing body of knowledge. First, the author has conceptualized the consequences of ABS on OST and IPC. The outcomes of ABS on OST and IPC were missing in the literature in the banking sector. The findings of the present study have confirmed the effect of ABS on OST and IPC. Second, the author has conceptualized how ABS was linked to IPC by examining the mediation of OST. The findings confirmed the mediation mechanism of OST between ABS and IPC. Fourth, the author has conceptualized how NAR moderated the relationship between ABS and OST; and the relationship between OST and IPC. The findings of the current study showed a strong relationship between ABS and OST and between OST and IPC when there was a lower NAR. Conversely, the author also found that the relationship between ABS and OST and between OST and IPC was weaker when there was a higher NAR. The current study addressed a need for researchers to evaluate competing theories about what intervening variables are required to explain the process of OST predicting IPC and other outcomes.

Recommendations: The current study recommends that commercial banks of Pakistan should take corrective measures to decrease the manifestation of supervisory maltreatment. This study has suggested

several paths by which organizations can minimize supervisory mistreatment. First, the supervisory style should be taken into consideration when recruiting and selecting supervisors. Human resource managers have an immense responsibility for this insight. Second, emotional management training should be encouraged for developing interpersonal skills for the supervisors. The current study found that abusive supervision is one of the antecedents of interpersonal conflict and ostracism in organizations. Mistreatment by the supervisors and their hostile behavior may lead to discomfort among individuals. Therefore, the author suggests designing training programs for supervisors to prevent abusive supervision before it can cause an adverse work environment like IPC and OST**.** The current research is helpful to understand that ABS leads to OST, which results in IPC. So CEOs and management professionals can use these findings to improve and manage good working relations among workers and management. The current examination addresses the importance of a decent relationship to expand and maintain the desired productivity.

The current study provides implications for managers, as it brings attention to other factors impacting ABS. As perceived deep-level divergence is an essential originator of ABS, it is of great significance for organizations to decline such perception by enlightening diversity, considering trait empathy when recruiting managers and providing justice training for supervisors. By doing so, supervisors are more likely to be stimulated to accept and embrace divergent values and may develop empathy to interact equally with both similar and dissimilar employees. As a result, those well-trained supervisors may not confine their justice scopes narrowly and are less likely to execute ill-treatment to employees who are perceived to be divergent. This cognitive of managing supervisors will result in managing the workforce to reduce OST. Ultimately IPC can be minimized as well. Hence, according to the current study, lower ABS leads to lower IPC and OST. Finally, based on the current study findings, the author recommends developing the narcissism admiration dimension to the personality of employees during the recruitment and training process. There are positive and negative outcomes of healthy and unhealthy narcissism and negative outcomes should not be ignored by the companies.

Limitations and Future Research: Like any study, this study has some limitations. Future researchers can increase the sample size. Private & government banking sector employees and employees with short-term contracts should be included as a sample to compare the difference. Due to self-report measures, socially desirable answers increase the chances of biases in reporting. Another gross limitation of the study is that usually, people respond in a socially desirable way. The element of social desirability might be causing hurdles to the actual findings of the study. Building on the boundaries of the present research work, the author suggests the future scholars replicate the study to different personality frameworks. For example, scholars can study ABS and its consequence in the Big Five personality domains rather than narcissistic personalities. The supervisor's Machiavellianism may be another ground to be studied in the context of the present study. Moreover, this study has only inspected the NAR of the subordinate in the form of narcissist admiration. Future scholars are encouraged to study the other dimensions of NAR, such as narcissist rivalry for the supervisor and the subordinate. There is also a need to encourage future scholars to measure the construct of ABS critically.

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