

### IMPACT OF SUSTAINABILITY PRACTICES ON ORGANIZATIONAL PERFORMANCE: MEDIATING ROLE OF ECONOMIC PERFORMANCE

Muhammad Adnan<sup>1\*</sup>, Hazrat Younas<sup>2</sup>, Jehanzeb Khan<sup>3</sup>, Abdul Haseeb<sup>4</sup>

\*1PhD Scholar, Institute of Business and Management Sciences, The University of Agriculture, Peshawar, Pakistan; 2M.Sc (Hons) Agricultural & Applied Economics, The University of Agriculture, Peshawar, Project Associate at Planning and development, The University of Agriculture, Peshawar; 3PhD Scholar, Qurtuba University of Science and Technology Peshawar KPK, Pakistan, Lecturer at Rana University Kabul, Afghanistan; 4M.sc (Hons) Agricultural & Applied Economics, The University of Agriculture, Peshawar

\*1sadkhanaup85@gmail.com; 2hyounasagreco@aup.edu.pk; 3jehanzeb190@gmail.com; 4haseebwahab98@gmail.com

#### Corresponding Author: \*

Received: 20 October, 2023 Revised: 30 October, 2023 Accepted: 15 November Published: 22 December, 2023

#### **ABSTRACT**

This study wants to investigate the link between sustainability practices and organizational financial performance through mediator's economic performance. The population of the current research was banking sector employees. Though purposive sampling technique, 460 respondents were selected. Data from the selected sample was gathered through adapted scale. A total of 235 responses were received. The study ensured validity and reliability of the scale used in this study. It is found that both practices, i.e., sustainability exploration and sustainability exploitation have significant relation with organizational financial performance. Furthermore, economic performance partially mediates the link of sustainability practices and organization performance. The study concluded that organizations need to implement sustainability practices for better financial performance. It is also concluded that organizations should change their approach of sustainability to socio-efficiency and eco-efficiency instead of pollution control only. Discussion, implications, limitations and future research avenues are also highlighted.

Keywords: Sustainability Practices, Organizational Performance, Economic performance

#### INTRODUCTION

Business sector greatly emphasize on sustainability growth as it impacts Organizational Performance and reputation (Lozano, 2012; Hahn and Scheermesser, 2006). Today's the focus of businesses is to build a brand name for medium or long-term instead to earn a handsome profit for a short period of time (Fairfield et al., 2011). It is impossible for society to achieve sustainable development without support of corporations because it is the productive resource of the economy (Maletic et al., 2017). In today competitive environment, the question may arise whether sustainability practices may help

organizations to compete successfully in the marketplace. To answer this question, researchers (Azapagic, 2003; Maletic et al., 2014; Maletic et al., 2017; Khattak et al., 2018) argued that corporate sustainability is the most important tool used for cost reduction, new products creation, managing risks, and manage fundamental changes in internal culture and structure. On the same way Delai and Takahashi (2013) pointed out that for an organization the important tools are initiatives and sustainable development. Hart and Milstein (2003) define sustainable development is delivering

environmental, social and economic benefits to the society.

From the last decade researchers give immense importance to define, theorize and measure corporate sustainability (Lozano et al., 2015; Searcy, 2011). Montiel and Ceballos (2014) argued that this topic is still debatable in the literature. Similarly, Zhang et al., (2012) argued that there are number of ways trough which we define and measure corporate sustainability practices. Based on previous management literature on exploration exploitation and prior studies (Maletic et al., 2017; Maletic et al., 2016) whose focus was to introduce theoretical framework in order to investigate multidimensionality of sustainability practices, the current research highlights two sustainability practices i.e. SEXP and SEXPI with different objectives. Here sustainability exploitation is the degree to which we make organization able through continuous enhancement in outputs and processes i.e. improvements. eco-efficiency Sustainability exploration is to challenge the existing sustainability through developing capabilities and innovative ways (Maletic et al., 2014).

All over the corporate sectors have a number of indicators for the increasing adaptation of sustainability issues. Additionally, this issues nowadays are being made more institutionalized (Campbell, 2007). It is concluded that the uniqueness of the organization and unforeseen events of the organization reflects the condition of the organization (Donaldson, 2001). The complexities mentioned above, the current investigation examines the pattern of sustainability exploration and sustainability exploitation practices as a whole world and the effects of these practices on the organization performance. The institutional view based on (Matten and Moon, 2008), the similar institutional issues facing an organization and should have similar accomplishment patterns of sustainability exploitation and sustainability exploration. It can be more anticipated that sustainability exploitation practices may be different across to less scope than sustainability exploration practices. For example, some countries have fix and codified laws and rules, and may have similar approaches in term of formal, about controlled sustainability ideas they can have considerable different approaches, as well as the stakeholders are motivated by incentives and

opportunities and the perceived study of their expectations by using different approaches (Matten and Moon, 2008).

**Organizations** mav express and involved employees must be to develop sustainability related strategies and as a strategic value taken by environmental concerned. Human resources policies and practices are vital for organizational survival and to achieve sustainable competitive advantage because, through human resources policies and practices organizations' may be in a position to implement sustainable practices in their routine activities (Dubois and Dubois, 2012).

#### **Objectives of the Study**

- 1. To investigate the link between sustainability practices and organization performance.
- 2. To test whether economic performance play intervening role on the link between sustainability practices and organization performance.

#### LITERATURE REVIEW

The corporate sustainability has increased our understanding through the increasing number of researches on how an organization can put together strategies and sustainability challenges (Moor and Manring, 2009). The corporate sustainability is to be consider as an opportunity instead to be taken as necessity, as a result the method explains business interpretation and create value (Ludema et al., 2012). It is noted by researchers that business leaders are changing their point of view corporate sustainability is an opportunity, why we considering it is a requirement. The business approach to sustainability motivated to eco-efficiency and socio-efficiency and derived from pollution control (Manzoor et al., 2023; Young and Tilley, 2006). Many organizations have tried to straighten the economic, social and environment performance (Ma et al., 2023; Hahn, 2015). Marcus and Fremeth (2009) highlighted that sustainability practices will not be introduced by business because of general responsibilities instead of that these hard works are in accordance for the interest to convince the main stakeholders and in different competitive fields achieving success (e.g. economic performance).

The positive association between corporate sustainability performance and economic

performance is concluded from many previous experimental studies (Orlitzky et al., 2003). Corporate sustainability performance and economic performance are negatively related to each other (Wagner et al., 2002). The reasonable clarification for such misleading findings is because of vagueness in the operationalization of the constructs to capture sustainability and OP (Van Beurden & Gossling, 2008). The relationship between sustainability and organizational economic performance is based on many researchers have stressed importance in accordance (Callan and Thomas, 2009). To create a relationship between corporate sustainability and economic performance have attempted both hypothetically and experimentally (Endrikat et al., 2014; Lu et al., 2014; Ghani et al., 2022; Wagner, 2010). However, the sustainability practices of corporations were often noted from several previous research studies which given economic and social environmental consequences effect (e.g., Figge and Hanh, 2011; Gao and Bansal, 2013). Few studies investigated the relationship between sustainability practices and overall OP. For that reason, organization performance is studied through numerous phases or dimensions to examine the corporate sustainability inferences. The literature of management, and exploration/exploitation practices is used to modeled and analyze the relationship between OP and innovation practices (e.g., Jansen et al., 2006; Khan et al., 2022). To a diversity of trend, in recent years the exploration and exploitation concepts has been applied and the contribution of these concepts to show the relationship between both non-financial and financial performance result and corporate sustainability (Ahmad et al., 2022; Maletic et al., 2014; Hanh et al., 2015). Maletic at al. (2015) have experimentally established the framework of exploration and exploitation can be theorize the sustainability practices and suggest that economic performance can be positively affected by both types of sustainability practices.

Harmon et al., (2009) studied to explore and investigate the conditions of the company that enabled to sustainability needs, driving and reducing the response on exact factors, the companies are engaged in practices, and the impacts on organization performance. The survey is based on worldwide and the number of respondents was 1514. The model obtained and conformed by authors to understand the

contact between these factors and to understand and react these challenges that how the US respondents is different from their foreign counterparts. The infrastructure of sustainability efforts is offers by their study for business leaders in all over the world to extend their social, environmental and financial achievements. Maletic et al., (2014) conducted a study to observably evaluate the effect of sustainability orientation on the performance of an organization. The data was gathered through a survey of 116 organizations working both in manufacturing and services in Slovenia. For the determination of level of determination, descriptive statistics was used. To test the validity, EFA statistics was used. A simple regression model was applied to measure the effect of sustainability practices on the performance of an organization. Results suggested a significant and positive relationship between sustainabilityoriented practices and OP.

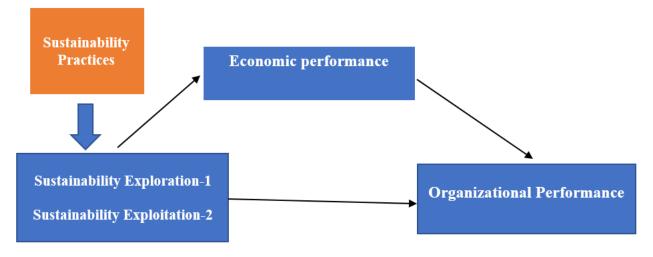
Roni et al., (2017) studied that the triple bottom line has negatively affected by manufacturing activities, which is leaded to get on sustainable manufacturing. From previous research study sustainable manufacturing is a way to minimize the negative effects of manufacturing activities on environment. But the Malaysian firms needed further investigation because the link of sustainable manufacturing drivers and firm performance proving nothing. Furthermore, the conflict of the relationship between sustainable manufacturing activities implication on manufacturing firm is depends on the size of a firm. For this purpose, the data was collected from the manufacturing firms of industries in Malaysia and the data was analyzed with SEM-AMOS. The empirical results show that firm size moderates the relationship of market forces and strategic leadership with firm performance. Gupta, (2017) Studied to examine innovative practices and quality with OP based on sustainability perspective. Further, it is also aimed that the global sustainability as a whole is effect by quality and innovative initiatives. The data was collected through survey from 126 Indian organizations which is containing manufacturing (121) and (5) from services. To extract the factors and to provide the basis to their reliability and validity gauging the (EFA) was used. The selected respondents must have enough knowledge about innovation practices in large organization and being deployed to answer the

question. The deployment of sustainability-oriented innovation is in order to determine the descriptive statistics were used. Other than to see the overall OP is affected by sustainability-oriented practices the regression analysis was used. The study shows the significant relations between quality and innovative practices with OP.

Cherian and Farouk, (2017) examined the impact of sustainable human resource practices on OP and the responsibility of sustainability practices in human resource management. The various dimensions of human resources which is affected by sustainability practices like training development, recruitment and retention, motivation and performance management, and environmental awareness was studied. The questionnaire is uses to obtain the relevant data and the respondents were chosen by convenient sampling, questionnaire was distributed in 150 respondents. To understand the effect of sustainable human resources on OP, multiple linear regressions was used, and Cronbach's alpha was used to verify the reliability of the questions. The sustainable human resource practices are positively affected OP and their significant influence showed by analysis. The study defines that the organization can manage their business through sustainability as a result the business can benefit their people, economy and

environment. The business has to be built on one of the most important pillars which is not arguable.

Amisano and Anthony (2017) studied to examine the social, financial and environmental sustainability in small industry and their relationship with ethical leadership. The data was collected from Miami, Florida Chamber of commerce and the number of respondents (N= 80). The correlation and regression analysis were performed to find out the relationship between ethical leadership behavior social. financial and environmental sustainability, and they found that EL is significantly related with environmental sustainability. Maletic et al., (2017) explored the link of sustainability practices and OP through contingency factors (i.e. long-term orientation uncertainty, competitiveness). Data was collected from European based organizations and apply regression analysis to check the cause and effect relationship between sustainability practices and OP. They found that in moderate environmental context i.e. moderate uncertainty and competitiveness sustainability exploitation practice is more dominant predictor of OP as compared to sustainability exploration practice. They also found that sustainability exploration is the most dominant predictor of innovation performance in case where environment is highly competitive, uncertain and long-term oriented.



Conceptual framework

#### RESEARCH METHODOLOGY

#### Sample size and collection

The sample size of the current study was middle level employee of the private banking sectors which operating in Pakistan. The data was collected from the selected participants through structured questionnaires. The questionnaire was sent in two phases in order to receive a response rate. The respondents who were selected for a study sent a total of 460 questionnaires. Only 235 of them were returned, giving a response rate of 51.08%.

#### **Instruments**

#### Independent variables (SEXP and SEXPI)

To measure SEXP and SEXPI, the study adapts and used a scale of Maletic et al. (2014). This

scale consists of 14 items including 8 items for exploration and 6 items for exploitation practices having a five-point Likert scale ranging from 1 =strongly disagree to 5 =strongly agree. All the items of the scale were modified according to the study context.

#### Dependent variable (Organizational Performance)

To measure organizational performance a scale having four-items developed and used by Maletic et al., (2014) and Maletic et al., (2016) was used.

#### *Mediator (Economic performance)*

To measure economic performance, the study adapted Maletic et al. (2014) scale.

#### **Reliability Analysis**

Variables	No of elements	Cronbach alpha
Sustainability Exploitation (IV)	6	.895
Sustainability Exploration (IV)	International Journal of Contempor issues in Social Science	.912
Organization Performance (DV)	4	.826
Economic performance (MV)	3	.851

Represents reliability statistics of the scales used in this research. As highlighted, all the scales used in this research have a Cronbach's Alpha values for all scales are greater than 0.7 indicating that the scales used in the study are reliable. Sustainability exploration was measured through 08 items scale having an alpha value of 0.912. Sustainability exploitation was measured through 06 items scale

having an alpha value of 0.895. OP was measured through 04 items scale having an alpha value of 0.826. Economic performance was measured through 03 items scale having an alpha value of 0.851. Thus, it is clear that the alpha value of all the scales is above 0.6 confirming that the scale used by the study is reliable.

#### **KMO** and BTS Results

Variable names	KMO Findings	BTS Findings
Independent variables Sustainability Exploration Sustainability Exploitation	.878 .849	X <sup>2</sup> (850.58) (p <.5) X <sup>2</sup> (608.32) (p <.5)
Dependent variable Organization Performance	.731	X <sup>2</sup> (254.83) (p <.5)
Mediating Variable Economic performance	.726	X <sup>2</sup> (233.36) (p <.5)

The above model table shows that the sample of the current study is adequate based on the values of KMO of all the constructs is above .50. Likewise, the

BTS values for all variables are significant, indicating that the alternative hypotheses are accepted.

#### **Regression Analysis**

#### (Model table 1- SEXP on OP)

R	$\mathbb{R}^2$	Std. Error	DW	
.676	.457	.655		

Predictor: Sustainability Exploration

DV: Organization Performance

The above table highlights the simple regression model of SEXP and OP. Here SEXP is an independent variable and the OP is the dependent variable. The R<sup>2</sup> is 0.457 showing that SEXP explain 45% variation in the OP. The value of Durbin-Watson also falls in the acceptable range, i.e., 1.49, confirming that the data is free from autocorrelation.

#### Coefficient Summary

	Unstandardized Coeff.		t	р	
	В	Std. Error			
Constant	1.515	.178	8.524	.000	
SEXP	.599	.049	12.13	.000	

DV: OP

The above-mentioned table shows the coefficients of SEXP and OP relationship. The *T* and *P* value concluded that SEXP has significant and positive relation with Organizational Performance. The coefficient of unstandardized beta is 0.599 indicating that 0.599 units change will occur in OP due to a unit change in SEXP.

(	M	od	el	tal	ble	2-	SEXF	${}^{\!$	on	OP	)
---	---	----	----	-----	-----	----	------	--	----	----	---

R	$\mathbb{R}^2$	Std. Error	DW	
.686	.470	.657	1.602	

Predictor: Sustainability Exploitation

#### DV: Organization Performance

The above table highlights the simple regression model of SEXPI and OP. Here sustainability exploitation (SEXPI) is a predictor variable and OP is used as dependent variable. The R<sup>2</sup> is 0.470 showing that 47% variation in the OP is due to SEXPI. The DW value is 1.602 which lies in the suggested range, thus, suggesting that data is free from autocorrelation.

#### Coefficient

	Unstand	ardized Coeff.	t	p	
	В	Std. Error			
Constant	1.512	.174	8.712	.000	
SEXPI	.592	.048	12.459	.000	

#### DV: Organization performance (OP)

The above-mentioned table highlights the coefficients of SEXPI and OP relationship. The *T* and *P* value concluded that SEXPI has significant and positive association with OP. The coefficient of unstandardized beta is 0.592 confirming that 0.592 units change will occur in OP due to a unit change in SEXPI.

#### **Mediation Analysis**

For mediation analysis, the current research adopts Hayes (2018) methodology by using PROCESS macro. This subsequent section shows the details of each mediating variable effect on IDV and DV relationship.

Mediating Role of EP on the Relationship between SEXPI, SEXP and OP Step 1: IV and MV Relationship

	SEXPL	SEXP	
Coefficient	.71	.607	
T	13.11	14.48	
P	.000	.000	
	EP, R2: .49	EP, R2: .54	

To fulfill the first assumption, the table reported above depicts the relationship of SEXPI, SEXP and EP (MV). As depicted, SEXPI, SEXP has significant relation with EP. Thus, the first step allows us to move onward for mediation analysis.

Step 2: IV and DV Relationship

	SEXPL	SEXP	
Coefficient	.59	.59	
T	12.45	12.31	
P	.000	.000	
	OP, R2: .47	OP, R2: .45	

To fulfill the second assumption, the table reported above depicts the relationship of SEXPI, SEXP, and OP (DV). As depicted, SEXPI, SEXP has significant relation with OP. Thus, the second step also allows us to move onward for mediation analysis.

Step 3 & 4: IV and MV with DV

	SEXPL - EP	$\mathbf{SEXP} - \mathbf{EP}$
Coefficient	.59 .36	.27 .52
T	5.83 5.17	4.25 6.23
P	.000	.000
	OP, R2: .54	OP, R2: .56

To fulfill the third and fourth assumptions, the table reported above depicts the relationship of SEXPI-EP, SEXP-EP with OP (DV). As depicted, both SEXPI-EP, SEXP-EP have significant relation with OP. Thus, the last two steps confirm that the mediator partially mediate the relationship between IV and DV.

### SUMMARY, CONCLUSION AND RECOMMENDATION

Summarv

The objective of the study in hand was to examine the relationship between sustainability practices (i.e. SEXP and SEXPI) and OP in the banking sector operated in Peshawar. Additionally, the stated relationship was tested through possible mediator economic performance. Data was collected through a Likert type survey scale. The instrument was adapted as per the study context. A total of 460 respondents were selected on purposive sampling method. We received 260 responses in which 15 responses were not correct or they did not fill the questionnaire completely, thus these 10 responses were removed. Finally, 235 valid responses were used for onward process. Cronbach's alpha was applied for ensuring scale reliability. As per the study results, all values of alpha are falls in the range suggested by past researchers. Similarly, for ensuring validity, the study apply EFA. The details about EFA was given in the previous chapter. Results of EFA confirm scale validity. After this, the study main hypotheses were tested through applying regression and mediation analysis.

A correlation was performed to know the degree of association among variables. The results show that all our variables have significant and positive association with each other and with the dependent variable. To know about cause and effect relation, regression was applied. The findings suggest that both SEXP and SEXPI have positive and significant effect on OP. After this, the study applied mediation analysis by following Hayes (2018) method. The findings suggest that EP partially mediated the link of sustainability practices and OP.

The findings of the current study are then compared and contrast with past studies. The results of this study are in line with Khattak et al., (2018) as they also check whether sustainability practices effect OP in Pakistani context. Our results are also consistent with Maletic et al., (2014), Maletic et al., (2016), and Maletic et al., (2017). Our findings are also match with Amisano and Anthony (2017). Similarly, our results are also consistent with Batista and Francisco (2018), as they find that sustainability practices have significant effect on OP. Furthermore,

Islam et al., (2018) and Iqbal et al., (2019) also found the same findings. The results of this study are also in line with Roni et al., (2017) and Gupta et al. (2017) as both of the studies have similar findings.

#### Conclusion

The purpose of the study in hand is to examine the relationship of sustainability practices and OP in the presence of mediator economic performance in banking sector. Adapted scale was used for data collection. As mentioned earlier, our research found that both SEXP and SEXPI have significant association with OP. Our study also found that the mediator EP play an intervening role in the link of sustainability practices and OP. Hence, based on our findings, all study hypotheses are accepted. Based on the cited literature and findings of this research, we concluded organizations that must adopt practices better sustainability for financial performance. It is also concluded that organizations should focus on economic performance for the purpose to improve OP.

#### Recommendations

The study suggests few recommendations based on the findings of the study. First, we recommended that firms should practice sustainability initiatives for better financial performance. Second, we also suggest that economic performance may improve organization's overall performance, thus, organizations should give more preference to activities that benefit the society which in turn effect financial performance. Lastly, we recommend to all organizations, that they give due importance to all those activities that directly or indirectly give benefits to society at large in the form of sustainability practices, CSR and environment.

#### REFERENCES

Ahmad, S., Islam, M., Zada, M., Khattak, A., Ullah, R., Han, H., & Araya-Castillo, L. (2022). The influence of decision making on social inclusion of persons with disabilities: A case study of Khyber Pakhtunkhwa. International Journal of Environmental Research and Public Health, 19(2), 858.

- Amacha, E., & Dastane, O. (2017). Sustainability Practices as Determinants of Financial Performance: A Case of Malaysian Corporations.
- Azapagic, A., 2003. Systems approach to corporate sustainability. A general management framework. Process. Saf. Environ. Protec. 81(5), 303-316.
- Delai, I., Takahashi, S., 2013. Corporate sustainability in emerging markets: insights from the practices reported by the Brazilian retailers. J. Clean. Prod. 47, 211-221.
- Fairfield, K.D., Harmon, J., Behson, S.J., 2011. Influences on the organizational implementation of sustainability: an integrative model. Organ. Manage. J. 8, 4– 20.
- Field, A. (2013). Discovering statistics using IBM SPSS statistics. sage.
- Hahn, T., Scheermesser, M., 2006. Approaches to Corporate Sustainability among German Companies. Corp. Soc. Responsib. Environ. Manag. 13, 150–165.
- Hart, S.L., Milstein, M.B., 2003. Creating sustainable value. Acad. Manage. Exec. 17(2), 56-69.
- Hayes, A. F., & Preacher, K. J. (2013). Conditional process modeling: Using structural equation modeling to examine contingent causal processes.
- Khan, N. U., Zada, M., Ullah, A., Khattak, A., Han, H., Ariza-Montes, A., & Araya-Castilo, L. (2022). Servant leadership and followers prosocial rule-breaking: the mediating role of public service motivation. *Frontiers in psychology*, *13*, 848531.
- Kim, M. S., & Thapa, B. (2018). Relationship of ethical leadership, corporate social responsibility and organizational performance. *Sustainability*, 10(2), 447.
- Lozano, R., 2012. Towards better embedding sustainability into companies' systems: an analysis of voluntary corporate initiatives. J. Clean. Prod. 25, 14-26.
- Lozano, R., Carpenter, A., Huisingh, D., (2015). A Review of 'Theories of the Firm' and their Contributions to Corporate Sustainability. J. Clean. Prod. 106, 430–442.

- Ma, X., Khattak, A., Ghani, B., & Huo, M. (2023). Perceived overqualification in higher education institutions: Enhancing employee innovative behavior via creative self-confidence and harmonious workplace climate. *Current Psychology*, 1-12.
- Maletič, M., Maletič, D., & Gomišček, B. (2017). The role of contingency factors on the relationship between sustainability practices and organizational performance. *Journal of cleaner production*, 171, 423 433.
- Maletič, M., Maletič, D., Dahlgaard, J. J., Dahlgaard-Park, S. M., & Gomišček, B. (2016). Effect of sustainability-oriented innovation practices on the overall organisational performance: An empirical examination. *Total Quality Management & Business Excellence*, 27(9-10), 1171-1190.
- Maletič, M., Maletič, D., Dahlgaard, J.J., Dahlgaard-Park, S.M., Gomišček, B., 2014. Sustainability exploration and sustainability exploitation: From a literature review towards a conceptual framework. J. Clean. Prod. 79, 15 September, 182-194.
- Manzoor, S. R., Ullah, A., Ullah, R., Khattak, A., Han, H., & Yoo, S. (2023). Micro CSR intervention towards employee behavioral and attitudinal outcomes: a parallel mediation model. *Humanities and Social Sciences Communications*, 10(1), 1-14.

- Montiel, I., Delgado-Ceballos, J. (2014). Defining and measuring corporate sustainability: Are we there yet? Organ. Environ. 27 (2), 113-139.
- Priyankara, H., Luo, F., Saeed, A., Nubuor, S., & Jayasuriya, M. (2018). How Does Leader's Support for Environment Promote Organizational Citizenship Behaviour for Environment? A Multi-Theory Perspective. Sustainability, 10(1), 271.
- Rupp, D. E., Shao, R., Skarlicki, D. P., Paddock, E. L., Kim, T. Y., & Nadisic, T. (2018). Corporate social responsibility and employee engagement: The moderating role of CSR-specific relative autonomy and individualism. *Journal of Organizational Behavior*, 39(5), 559-579.
- Searcy, C., 2011. Updating corporate sustainability performance measurement systems. Meas. Bus. Exc. 15(2), 44 56.
- Sekaran, U. Bougie. (2013), Research Methods for Business. A Skill Building Approach. Fifth Edition. A John Wiley and Sons, Ltd, Publication.
- Zhang, D, Linderman, K., Schroeder, R.G., 2012.

  The moderating role of contextual factors on quality management practices. J. Oper. Manag. 30(1–2), 12–23.