

## ANTECEDENTS OF ENVIRONMENTAL ACCOUNTING IN VIETNAM

QUANG LINH HUYNH

Ho Chi Minh City University of Food Industry, Email: linhhq@hufi.edu.vn

### Abstract:

The role of environmental accounting in business is very imperative in providing useful environmental information for executives. However, adopting environmental accounting practices could challenge the executives in developing nations such as Vietnam. In the current work, Cronbach's  $\alpha$  procedures as well as factor analyses were applied to examine the reliability and internal steadiness of the survey. In addition, multiple regression analyses were employed to determine the factors influential to the implementation of environmental accounting practices in Vietnamese corporations. The empirical findings demonstrate environmental uncertainty, organizational interdependence, organizational size and corporate governance impose positive influences on the application of environmental accounting practices. The research findings are expected to help executives in the developing nations build effective environmental accounting practices that should match with environmental uncertainty, organizational interdependence, organizational size as well as corporate governance, so that they can gain the best possible effectiveness.

**Keywords:** Environmental accounting, Uncertainty, Interdependence, Corporate governance

### 1. Introduction

The benefits of environmental accounting in operating businesses have been underlined (Kamruzzaman, 2012). To attain the advantages of such a tool, a background is grounded on to shape and accept environmental accounting for business. In addition, Pandey and Singh (2019) indicated environmental pollution is currently very severe and an obstacle to the cost-effective exploitation of natural resources. Environmental pollution is the consequences of human activities to the natural environment, which seriously affects the health of communities (Rai, 2016; Holdgate, 1979).

Based on World Bank (2012), deficient obedience with environmental guidelines has imposed a great challenge to countries, specifically to developing nations like Vietnam. Nevertheless, Jo et al. (2015) revealed more and more businesses have recognized the view to raise environmentally friendly responsibility. Environment controlling tools in theory such as environmental accounting need unbiased methods to social and financial efficiency. Lee et al. (2016) indicated an increasing concern about environmental responsibility in enterprises has been raised because they have been fronting rising pressures by the public and related parties to operate firms in a more socially responsible way and observe with environmental instructions.

Environmental accounting is commonly viewed as a significant managing method in offering executives with environmental evidence, which allow them to make better business decisions as well as sustain active controlling instruments over environmental pollution. Allen (1988) contended corporations need environmental accounting implements to deliver appropriate and exact environmental information to facilitate efforts to oversee environmental costs, which can increase environmental performance. Numerous investigators have requested new practices

such as environmental accounting implements and have turned its attention from a humble function of environmental determination to a multifaceted function of making worth by reducing environmental costs.

For many years, several assessments of environmental accounting have been conducted in developed as well as developing countries (Amat et al., 1994; Ahmad & Alwi, 2004; Hyvonen, 2005; Ewert & Wagenhofer, 2006; Etim, 2019; Ibadin & Imoisilli, 2010). However, Lin and Yu (2002) found out the implementation of environmental accounting in the emerging nations still remain insufficient. Ahmad & Alwi (2004) confirmed a lack of exploratory research in Asian countries and the need for further investigating the reasons that are why Asian Countries have not been applying newly developed environmental accounting practices and what prevent the implementation of these systems. Although Vietnamese corporations have emphasized the role of environmental accounting practices in business, they have employed only a few environmental accounting practices in their companies; which is in agreement with the contingency theory of managerial accounting where particular conditions will shape the form of environmental accounting practices (Otley, 2016). Vietnam's condition will shape environmental accounting practices employed there.

Quyen et al. (1995) indicated there has been a serious concern on the pollution of the environment in Vietnam. Consequently, many domestic and international documents have underlined environmental issues are immensely serious and disturbingly. For example, water and air pollution is the most considerable. They have specified Vietnam as one of the nations generating the highest water and air environmental issues. Presently, giant challenges relevant to environmental pollution rising from natural agents as well as anthropogenic activities have faced Vietnam (Chu, 2018). The implementation of environmental accounting to run businesses is related to environmental responsibility (Huynh & Lan, 2021).

So far, only a little research has been undertaken to analyze environmental accounting practices in Vietnam. Almost none of empirical studies have scrutinized the factors related to the implementation of environmental accounting practices for Vietnamese companies. Therefore, the purpose of the existing work is to investigate the factors determining the application of environmental accounting practices in Vietnam's economic and environmental settings. This work is expected to contribute to the body of accounting knowledge by delivering a Vietnamese viewpoint to environmental accounting. The rest of the current work is prepared as below. In the next part section, it is going to review the literature linked to managerial accounting in general as well as environmental accounting to develop the hypotheses on the factors deciding the application of environmental accounting practices in business. Subsequently, another section is going to describe methodology to analyze the research data, followed by a section that is going to present the empirical results. The last section is going to offers some conclusions.

## **Literature Review**

The contingency theory of managerial accounting in general as well as of environmental accounting is applied as the theoretical framework for the current work. Managerial accounting

and environmental accounting practices have the most vital functions of businesses, and can be affected by contingent factors such as environmental uncertainty, organizational size, organizational interdependence as well as corporate governance (Gordon & Miller, 1976; Otley, 2016). In the current work, the implementation of environmental accounting practices is defined as the degree to which a corporation selects environmental accounting tools for business. Environmental uncertainty is referred to as a vital circumstantial variable (Lawrence & Lorsch, 1967; Weick, 2015; Duncan, 1972). Further, Miles et al. (1978) indicated environmental uncertainty is recognized by an organization's predictableness of business circumstances. The predictability is also viewed as the capability of a corporation to estimate the conditions of its business environment in the coming time (Steers, 1975; Ruzita, 2010). According to Pfeffer and Leblebici (1973), if environment competitiveness becomes higher, executives' demands for formal procedures are likely to rise. Furthermore, a rise in environmental uncertainty leads a firm to integrate more nonfinancial information into its accounting practices and accept fairly sophisticated controlling practices (Gordon & Miller, 1976).

Several scholars found out the evidence of the association of environmental uncertainty with environmental accounting practices (Etim, 2019; Ibadin & Imoisilli, 2010). Their empirical results support the view that more sophisticated environmental accounting practices are likely to improve organizational performance, if practices are designed to environmental uncertainty fronting the firms. In addition, Ruzita (2010) confirmed environmental uncertainty is significantly linked to the usage of internal effectiveness measurements and emphasized the importance of environmental uncertainty as external factors to the firm in clarifying the adoption of effectiveness measurements.

Thompson (1967) suggested three extents of interdependence. They are pooled interdependence; sequential interdependence and reciprocal interdependence. Chenhall and Morris (1986) defined organizational interdependence as the exchange of output which occurs among units within a firm (Thompson, 1967; Chenhall & Morris, 1986), which is assigned with three extents (pooled, sequential, and reciprocal). The current research defines organizational interdependence as the interdepending level among units within an organization as suggested by prior research (Thompson, 1967; Chenhall & Morris, 1986). Organizational interdependence is regarded as a vital component of the background in designing environmental accounting practices as subsequential and reciprocal conditions need more coordination than pooled conditions do (Baumler, 1971; Watson, 1975). Furthermore, Chenhall and Morris (1986) exposed a strong link between organizational interdependence, environmental accounting practices; while Ibadin, and Imoisilli (2010) reconfirmed this linkage, finding that, organizational interdependence influences environmental accounting practices. In addition, Summers (1994) contended increasing interdependence requires a rise in accounting information.

Although Miller (1987) stated that the relationship between company size and environmental accounting practice design is hazy and unclear, Robbins (2001) showed that there is a link between company size and environmental accounting practices. Moreover, Ibadin and Imoisilli

(2010) indicated that company size has an impact on environmental accounting practices. Environmental accounting practices are referred to as information characteristics (scope, timeliness, aggregation, and integration). Therefore, it can suggest an association between organizational size and environmental accounting practices. Based on Hoque and James (2000), organizational size is positively associated with the use of balanced scorecard measures; whereas Ruzita (2010) found a positive significant link between organizational size and the usage of the novelty managerial tools, which shows more innovative managerial tools in business is related to the bigger firm sizes. Additionally, Wu and Boateng (2010) stated, that organizational size positively and considerably influences variation in managerial accounting tools. Likewise, Nguyen (2020) asserted organizational size imposes an influence on the application of environmental accounting in businesses. Besides, numerous researchers verified organizational size significantly affects environmental statements (Pahuja, 2009; Christ & Burritt, 2013). Because big corporations are subjected to more public supervision; it is necessary for them to accept environmental accounting to make good social images to cope with public pressure. Furthermore, big corporations have greater resources to accept more sophisticated accounting practices (Chenhall, 2003).

The implementation of managerial accounting or environmental accounting in business is related to corporate governance. For example, Salvato and Melin (2008) emphasized the authorization of organizational supervision to independent executives with their good training, proficiency and knowledge could result in higher validation. The independent executives have to report the work to the owners; so formal managerial practices are necessary to efficiently run businesses (Cromie et al. 1995). Similarly, Christine et al. (2011) highlighted it is indispensable to start an isolated unit in charge of managerial accounting, where formal accounting tools had better be applied for formalized managerial practices. Professionalization of independent executives is connected to the implementation of more sophisticated managerial practices. Additionally, Agrawal and Chadha (2005) found out the likelihood of restatement is expressively lower in the organizations with boards including independent economic specialists, but higher in the ones in which executives possess the majority of organizational shares. These are in accordance with the view that independent executives accept more formalized managerial practices, which can generate more authentic accounting statements. Overall, it can suggest the following hypotheses:

H1: Environmental uncertainty affects the application of environmental accounting in business

H2: Organizational interdependence affects the application of environmental accounting in business

H3: Organization size affects the application of environmental accounting in business

H4: Corporate governance affects the application of environmental accounting in business

### Measurements

**Environmental accounting:** Grounded on Christ and Burritt (2013), the current work measured environmental accounting (ENA) with thirteen items (ENA 1 to ENA 13), which were calculated

with a five-point scale. **Environmental uncertainty:** Based on previous research (Chenhall & Morris, 1986; Ruzita, 2010), the current work evaluated environmental uncertainty (EUY) with five items (EUY1 to EUY5), which were calculated using a five-point Likert scale. **Organizational interdependence:** Modified from previous research (Chenhall & Morris, 1986), the current work evaluated organizational interdependence (OIE) with a three-point Likert scale consisting of three explanations of intra-unit work flow incorporation, ranging from pooled, and sequential to reciprocal interdependence. **Organization size:** According to Nguyen (2009), the current work evaluated organization size (OSE) with a three-point Likert scale, which are “small”, “medium” and “large”. **Corporate governance:** Anchored in prior studies (Brown & Caylor 2004; Bhagat & Bolton 2008), the current work measured corporate governance (CGE) with the proportion of independent directors, which was calculated with a ratio of independent directors to the total directors in the board of directors.

### Data Collection

Before gathering the research data for the current work, the pilot test of measurements was carried out with 5 business executives related to environmental accounting, and 5 experts involved in environmental accounting. Therefore, it could ensure that measurements are proper for analyses. A research survey was undertaken in Vietnam. Informants were executives and specialists relevant to environmental accounting of businesses operating in most of the prevailing sectors there. Finally, there were 350 respondents appropriately completing the questionnaire.

### Empirical results

To examine the reliability and internal steadiness of the survey, the Cronbach's  $\alpha$  procedures were applied. There are two constructs with multiple items, which are environmental accounting (ENA) and environmental uncertainty (EUY). Therefore, they need the Cronbach's  $\alpha$  procedures. The empirical findings are shown in Table 1. All the 18 dimensions obtain the total correlations exceeding the 0.5 threshold. Additionally, all the Cronbach's  $\alpha$  coefficients go above the 0.7 threshold. All the Cronbach's coefficients, if the dimensions deleted are smaller than the existing Cronbach's coefficients. Moreover, the KMO coefficients are greater than the 0.7 lowest acceptable value. These figures satisfy the acceptable limits suggested by Nunnally (1975), demonstrating the constructs have adequate internal reliability. Therefore, they are all suitably reserved for next steps.

**Table 1: Cronbach's  $\alpha$  procedures (ENA & EUY)**

Item	Total correlation	$\alpha$ if item is deleted	Cronbach's $\alpha$	KMO
ENA1	0.634	0.765	0.795	0.783
ENA2	0.646	0.771		
ENA3	0.723	0.753		
ENA4	0.724	0.749		
ENA5	0.711	0.761		
ENA6	0.667	0.772		
ENA7	0.702	0.758		
ENA8	0.634	0.768		
ENA9	0.743	0.756		
ENA10	0.745	0.752		
ENA11	0.688	0.759		
ENA12	0.643	0.782		
ENA13	0.619	0.798		
EUY1	0.676	0.796	0.823	0.796
EUY2	0.652	0.799		
EUY3	0.687	0.788		
EUY4	0.731	0.757		
EUY5	0.689	0.778		

The procedures of exploratory factor analysis was conducted to test construct validity (Nunnally, 1975). Convergent validity is tested based on the factor loading coefficients which surpass the 0.4 limit. Discriminant validity is tested based on the cross-loading coefficients which are greater than the 0.3 level. The communality coefficients should exceed the 0.5 level. The empirical results are exhibited in Table 2. These statistics show all the factor loading coefficients surpass the 0.4 limit; while all the cross-loading coefficients which are greater than the 0.3 level. In addition, all the communality coefficients should exceed the 0.5 level. These findings demonstrate the constructs satisfy validity. As a result, all of them should be suitably retained for next analyses.

Consequently, the two summated constructs of these factors (ENA & EUY) were calculated for the next steps. Subsequently, the analyses of multiple regression were performed to examine the hypotheses of environmental uncertainty, organizational interdependence, organization size and corporate governance that affect the application of environmental accounting to run businesses. The empirical results are demonstrated in Table 3. This work is grounded on the indices specified by Nunnally (1975) to consider the research hypotheses. As realized in Table 3, the research model reaches the goodness of fit; while the coefficient of F gains the 234.65 value at the 1% significance level. Furthermore, the estimate of the  $R^2$  obtains the 0.341 value, representing the amount of variation explained by independent variables is 34.1%.

**Table 2: Exploratory factor analysis (ENA & EUY)**

Item	Factor loading		Communality
	1	2	
ENA1	0.813		0.712
ENA2	0.802		0.724
ENA3	0.787		0.714
ENA4	0.802		0.815
ENA5	0.732		0.744
ENA6	0.845		0.773
ENA7	0.745		0.693
ENA8	0.822		0.754
ENA9	0.744		0.848
ENA10	0.851		0.735
ENA11	0.842		0.716
ENA12	0.818		0.724
ENA13	0.837		0.678
EUY1		0.761	0.642
EUY2		0.823	0.722
EUY3		0.788	0.732
EUY4		0.762	0.665
EUY5		0.782	0.647

Environmental uncertainty influences the implementation of environmental accounting in business with the B coefficient of 0.181 at the 1% level of significance, offering support for the hypothesis H1. Organizational interdependence affects the implementation of environmental accounting in business with the B coefficient of 0.158 at the 1% level of significance, which is in support of the hypothesis H2. Organization size affects the implementation of environmental accounting in business with the B coefficient of 0.364 at the 1% level of significance, providing support for the hypothesis H3. Corporate governance affects the implementation of environmental accounting in business with the B coefficient of 0.322 at the 1% level of significance, demonstrating support for the hypothesis H4. For the research model, the following regression equation can be presented:  $ENA = 1.123 + 0.181 \cdot EUY + 0.158 \cdot OIE + 0.364 \cdot OSE + 0.322 \cdot CGE + \epsilon$ .

**Table 3: Multiple regression analyses (Dependent Variable: ENA)**

	<b>B</b>	<b>Std. Error</b>	<b>t</b>	<b>P<sub>t</sub></b>	<b>Results</b>
(Constant)	1.123	0.232	4.841	0.000	
EUY	0.181	0.043	4.209	0.000	H1
OIE	0.158	0.039	4.051	0.000	H2
OSE	0.364	0.053	6.868	0.000	H3
CGE	0.322	0.047	6.851	0.000	H4
R <sup>2</sup>	0.341				
F	234.65				
P <sub>F</sub>	0.000				

### Conclusions

Based on the abovementioned empirical findings, some implications are evident for those in charge of environmental accounting. The results show, that when a firm operates in a higher uncertain business environment, independence between units within the firm increases, its executives are more likely to accept environmental accounting practices, which is in concurrence with the prior research results (Baumler 1971; Pfeffer & Leblebici, 1973; Watson, 1975; Gordon & Miller, 1976; Chenhall & Morris, 1986; Summers, 1994; Etim, 2019; Ibadin & Imoisilli, 2010; Ruzita, 2010), where they discovered the uncertain business environment leads executives to require more suitable and precise environmental information being offered by environmental accounting practices. Therefore, they could more effectively run their businesses. They also provided the evidence on a linkage between organizational interdependence and environmental accounting practices. In addition, if organizational size is larger, environmental accounting practices are reflected to be compulsory to the organization, which likely augments the implementation of management accounting tools in businesses. Furthermore, firms with independent executives in a majority are likely to accept environmental accounting to run businesses because independent executives have to report the work to the owners and so they require formal managerial implements such as environmental accounting practices for those reports. The findings are in agreement with the earlier research findings (Salvato & Melin, 2008; Christine et al., 2011; Cromie et al., 1995).

The empirical findings of the current research are important to executives who are involved in managerial accounting. Vietnam's business environment is noticeably changing, because its economy has been markedly growing and regulations concerning business have been still modified. And as found from the current work, the environment factor greatly affects environmental accounting practices. As a result, these findings can help executives in emerging nations as Vietnam design and employ suitable environmental accounting practices to their firms. These practices should match with the organizational interdependence, organization size and corporate governance of the firms; so that, they can obtain the best possible effectiveness for them.

## References

1. Agrawal, A., & Chadha, S. (2005). Corporate Governance and Accounting Scandals, *Journal of Law and Economics*, 48(2), 371-406.
2. Ahmad, N. N. N., & Alwi, N. (2004). Management accounting practices in selected Asian countries: a review of the literature. *Managerial Auditing Journal*. 19(4), 493-508.
3. Allen, D. G. (1988). *Relevance Lost: The Rise and Fall of Management Accounting*. By H. Thomas Johnson and Robert S. Kaplan. Boston: Harvard Business School Press, 1987. xv+ 269 pp. Notes and index. \$24.95. *Business History Review*, 62(1), 176-178.
4. Amat, J., Carmona, S., & Roberts, H. (1994). Context and change in management accounting systems: a Spanish case study. *Management Accounting Research*, 5(2), 107-122.
5. Baumler, J. V. (1971). Defined criteria of performance in organizational control. *Administrative Science Quarterly*, 340-350.
6. Bhagat, S., & Bolton, B. (2008). Corporate governance and firm performance, *Journal of Corporate Finance*, 14(2008), 257-273.
7. Brown, L. D., & Caylor, M. L. (2004) *The Correlation between Corporate Governance and Company Performances*, research study commissioned by Institutional Shareholder Services Inc.
8. Chenhall, R. H. (2003). Management control systems design within its organizational context: findings from contingency-based research and directions for the future. *Accounting, organizations and society*, 28(2-3), 127-168.
9. Chenhall, R. H., & Morris, D. (1986). The impact of structure, environment, and interdependence on the perceived usefulness of management accounting systems. *Accounting Review*, 61(1), 16-35.
10. Christ, K. L., & Burritt, R. L. (2013). Environmental management accounting: the significance of contingent variables for adoption. *Journal of Cleaner Production*, 41(2013), 163-173.
11. Christine, D., Birgit, F. D., & Christine, M. (2011). Corporate governance and management accounting in family firms: does generation matter, *International Journal of Business Research*, 11(1), 29-39.
12. Chu, T.T.H. (2018). Environmental pollution in Vietnam: Challenges in management and protection. *Journal of Vietnamese Environment*, 9(1), 1-3.
13. Cromie, S., Stephenson, B., & Monteith, D. (1995). *The Management of Family Firms: An Empirical Investigation*, *International Small Business Journal*, 13(4), 11-34.
14. Duncan, R. B. (1972). Characteristics of organizational environments and perceived environmental uncertainty. *Administrative science quarterly*, 313-327.
15. Etim, E. O. (2019). Management Accounting System, Perceived Environmental Uncertainty, and Corporate Performance of the Nigerian Breweries Sector. *Archives of Business Research (ABR)*, 7(7), 255-268.
16. Ewert, R., & Wagenhofer, A. (2006). Management accounting theory and practice in German-speaking countries. *Handbooks of management accounting research*, 2, 1035-1069.
17. Gordon, L. A., & Miller, D. (1976). A contingency framework for the design of accounting information systems. *Accounting, Organizations and Society*, 1(1), 59-69.
18. Hoque, Z., & James, W. (2000). Linking balanced scorecard measures to size and market factors: impact on organizational performance. *Journal of management accounting research*, 12(1), 1-17.
19. Holdgate, M. W. (1979). *A perspective of environmental pollution*, Cambridge: Cambridge University Press, UK.

20. Huynh, Q. L., & Lan, T. T. N. (2021). Importance of Environmentally Managerial Accounting to Environmental and Economic Performance. *International Journal of Energy Economics and Policy*, 11(5), 381-388.
21. Hyvonen, J. (2005). Adoption and benefits of management accounting systems: evidence from Finland and Australia. *Advances in International Accounting*, 18, 97-120.
22. Ibadin, P. O., & Imoisilli, O. (2010). Organization contexts and environmental accounting practice design: Empirical evidence from Nigeria”, *International Journal of Current Research*, 10(November), 64-73.
23. Jo, H., Kim, H., & Park, K. (2015). Corporate environmental responsibility and firm performance in the financial services sector. *Journal of business ethics*, 131(2), 257-284.
24. Kamruzzaman, M. (2012). Framework of Environmental Management Accounting: An Overview (November 5, 2012).
25. Lawrence, P. R., & Lorsch, J. W. (1967). Differentiation and Integration in Complex Organizations. *Administrative Science Quarterly*, 12(1), 1-47.
26. Lee, K. H., Cin, B. C., & Lee, E. Y. (2016). Environmental responsibility and firm performance: the application of an environmental, social and governance model. *Business Strategy and the Environment*, 25(1), 40-53.
27. Lin, J. Z., & Yu, Z. (2002). Responsibility cost control system in China: the Han Dan experience. *Asia Pacific business review*, 9(1), 59-78.
28. Miles, R. E., Snow, C. C., Meyer, A. D., & Coleman, J. H. J. (1978). Organizational strategy, structure, and process. *Academy of management review*, 3(3), 546-562.
29. Miller, G. A. (1987). Meta-analysis and the culture-free hypothesis. *Organization Studies*, 8(4), 309-326.
30. Nguyen, T. D. (2009). Decree No. 56/2009/ND-CP of 30 June 2009 on Assistance to the development of small- and medium-sized enterprises, Vietnamese Government, Vietnam.
31. Nguyen, T. K. T. (2020). Studying factors affecting environmental accounting implementation in mining enterprises in Vietnam. *The Journal of Asian Finance, Economics and Business*, 7(5), 131-144.
32. Nunnally, J. C. (1975). Psychometric theory—25 years ago and now. *Educational Researcher*, 4(10), 7-21.
33. Otley, D. (2016). The contingency theory of management accounting and control: 1980–2014. *Management accounting research*, 31, 45-62.
34. Pahuja, S. (2009). Relationship between environmental disclosures and corporate characteristics: a study of large manufacturing companies in India. *Social Responsibility Journal*, 5(2), 227-244.
35. Pandey, V. C., & Singh, V. (2019). Exploring the potential and opportunities of current tools for removal of hazardous materials from environments. In *Phytomanagement of Polluted Sites*, Elsevier, 501-516.
36. Pfeffer, J., & Leblebici, H. (1973). The effect of competition on some dimensions of organizational structure. *Social forces*, 52(2), 268-279.
37. Quyen, P. B., Nhan, D. D., & Van San, N. (1995). Environmental pollution in Vietnam: analytical estimation and environmental priorities. *TrAC Trends in Analytical Chemistry*, 14(8), 383-38.
38. Rai, P. K. (2016) Particulate Matter and Its Size Fractionation. *Biomagnetic Monitoring of Particulate Matter*, 1, 1-13.
39. Robbins, S. P. (2001). *Organisational behaviour: global and Southern African perspectives*. Pearson South Africa.

40. Ruzita, J. (2010). The influence of perceived environmental uncertainty, firm size, and strategy on multiple performance measures usage. *African Journal of Business Management*, 4(10), 1972-1984.
41. Salvato, C., & Melin, L. (2008). Creating Value across Generations in Family-Controlled Businesses: The Role of Family Social Capital, *Family Business Review*, 21(3), 259-275
42. Steers, R. M. (1975). Problems in the Measurement of Organizational Effectiveness. *Administrative Science Quarterly*, 20(4), 546-558.
43. Summers, L. (1994). Organizing for the Future: The New Logic for Managing Complex Organizations. *Personnel Psychology*, 47(2), 380.
44. Thompson, J. D. (1967). *Organizations in action*. New York: McGraw-hill, USA.
45. Watson, D. J. H. (1975). Contingency Formulations of Organizational Structure: Implications for Managerial Accounting. *Managerial Accounting-The Behavioral Foundations*, Grid Inc., 65-80.
46. Weick, K. E. (2015). The social psychology of organizing. *Management*, 18(2), 189-1993
47. World Bank. (2012). *The World Bank Annual Report 2012*. The World Bank, Washington D.C, USA.
48. Wu, J., & Boateng, A. (2010). Factors influencing changes in Chinese management accounting practices. *Journal of Change Management*, 10(3), 315-329.