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FACTORS AFFECTING FINANCIAL AND NON-FINANCIAL REPORTING OF THE ENVIRONMENT IN GACHSARAN OIL AND GAS EXPLOITATION COMPANY

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ABSTRACT

Introduction & Objective: Environmental protection has become a major issue for organizations, companies, governments, and citizens in recent years. This study aimed to investigate the factors affecting the financial and non-financial reporting of the environment in Gachsaran Oil and Gas Exploitation Company.

Methods: The study population was 83 managers and financial experts who were sampled by the census. To collect information, research questionnaires were designed in the form of the fuzzy Delphi method and Likert scale. The software used in this research is smart pls (version 2), spss (version 23), and excel (version 2013).

Results: 8 indicators (reporting quality, liquidity, debt management, cost management, social component, environmental advocates, company managers, and investors) were approved by experts (8 people). The results of the research with the pls method indicate that all hypotheses are confirmed at the 95% confidence level. The results showed that the social component with the beta of 0.420% had the highest and then the components of company managers, environmental defenders, corporate investors with 0.27, 0.25, and 0.25, respectively, had the greatest impact on reporting. Non-financial environment and components, quality of accounting information, cost management, liquidity component, debt management with the beta, 0.32, 0.29, 0.27, and 25 had the most impact on financial reporting.

Conclusion: Considering the effect that these components have on financial and non-financial reporting, it is suggested that these components be considered in environmental financial and non-financial reporting.

INTRODUCTION

Based on the increasing growth of population and limited natural resources, the sustainable development, protection, and improvement of the environment are the main issues effective on the economic growth and social welfare all around the world to eradicate poverty and today, the necessity of environmental protection is an unavoidable issue (Saha & Bose, 2017). The fundamental reasoning about social responsibility is that no group can be saved if the personal benefits are targeted without considering the outcomes of his deeds on society (Firoz & Ansari, 2010). The business units have non-financial responsibilities and should consider the health of society. On the other hand, environment protection is not limited to political and geographical borders and it requires the collective effort of all residents of the earth (Senn & Giordano-Spring, 2020). The belief in sustainable development in the public mind and beliefs of managers is one of the most important points that should be considered and as environment protection requires an environmental management system as implemented as integrated with other managerial systems, accounting information system is one of the important factors of management information system in informing and helping the environmental protection by the pollutant manufacturing companies and by disclosure of the consumed expenses for environment protection by the companies can reflect it well in the accounts and by presenting correct and timely information to their management can help to make appropriate decisions(Jones, 2010). AIS accounting information systems with their important role in business units are changed seriously by entering the new definitions and requirements and some concepts including environmental accounting, accounting of human resources are raised (Andrikopoulos & Kriklani, 2013). Sustainable reporting is much wide compared to common financial reporting as it presents important non-financial information and helps the users to assess the current and future performance of the reporter unit. In financial reporting, the main emphasis is on the investors but in sustainability reporting, the range of beneficiaries is wide and consists of analysts, employees, customers, different unions, and society. This issue is as important as it is created for coordination and standards of global reporting GRI (Skouloudis, Evangelinos, & Kourmousis, 2010). The lack of environmental accounting systems in some Iranian organizations and companies has caused that this main dimension is not considered and only the output of financial reports as the tangible factors related to profit and loss, etc. are reflected. Due to ethical issues in accounting and the adverse impact of companies on the environment, this important issue should be reflected in financial and non-financial reports. The oil and Gas Company of Gachsaran is of great importance as one of the great oil companies.

The oil and gas operation company of Gachsaran is active as a branch of the national company of south oil regions in operation, processing, and transfer of crude oil, natural gas, and gas liquefaction production. The capacity of crude oil production of this company is averagely 630 thousand barrels per day and also daily produces one billion and 200 billion cubic foot (39 million cubic meter) natural gas and 35 thousand barrels of gas liquefaction. The reservation of crude oil of fields under the management of the oil and Gas company of Gachsaran is estimated at 19 billion barrels. The income of this company is

very high (120 thousand billion Rials in 2015) and the pollutants of this company and environmental risks are also high. The lack of consideration of Accounting for the environment on financial and non-financial performance is the main problem of study. In different researches, financial and non-financial reporting is evaluated, but not in local or international researches, no model is presented for financial and non-financial reporting from the environmental dimension. The main question of the study is how is the suitable model for financial and non-financial environmental reporting in the oil and gas operating company of Gachsaran.

REVIEW OF LITERATURE

Accounting for the environment is a branch of accounting collecting the information about environmental costs and application of the data in the calculations of goods and services costs. This branch of accounting is applied at the macro and micro levels of the economy. Environmental and social reporting is a tool for the response of companies to their performance. The reports should provide indifferent information enabling the beneficiaries to have a reliable estimation of the environmental and social performance of the organization (Ebrahimpour, Ilami Roud Maajani, & Khosravi Zadband, 2015). The main goal of accounting is providing information as required for important economic decisions. Whether the information has financial nature or managerial nature, or for internal decision making or external decision making, accounting is defined as the process of identification, evaluation, registration, and present economic information for economic decisions(Hoggett et al., 2015) and conscious judgment and it is called "reporting". Generally, the report means presenting a verbal or written account of what is observed, heard, done, or evaluated. Reporting can be used in different fields such as financial reporting, journalism, court report, traffic report, and operating report(Trigo, Belfo, & Estébanez, 2014).

As environmental accounting includes environmental reporting and environmental performance is of great importance from the view of the users of financial reports, the goals of economic performance reporting are not consistent with the environmental reporting goals and due to the limitation in the interest of users, we need the requirements of special reporting(ABDI, RAHIMI, & KABIR, 2008). We evaluate accounting functions when we think about the systematic and comprehensive registration of financial trade as important for the business. Accounting functions refer to the process of summarizing, analysing, and reporting the trades. Various financial trade includes a special period as considered to process a form summarizing the operation of a company, financial situation, or cash flow (Vasarhelyi & Alles, 2008). Thus, accounting reporting traditionally includes presenting information of three-month and annual periods supporting further financial decisions. Thus, accounting information is presented to other beneficiaries including investors, creditors, providers, and customers(Ashcroft, 2005).

The studies show that based on the high importance of environmental costs, these costs are ignored by the managers as the information presented by the traditional accounting system is incomplete and unrelated. Accounting for the environment equips the organization to the tools revising the traditional accounting system and corrects it as the information on environmental costs is

processed and reported to the managers. The accounting system of the environment is based on the thought of classic accounting change and its completion. We should also compute the costs of pollution and its elimination as a function of production or services besides the profit and costs of the goods and services. Accounting for the environment can connect the environmental managers and accountants and encourage both groups to work and move toward a path to improve the financial and environmental performance of the company(Tripathi & Syed, 2017).

Accounting for the environment is based on combining the environment as a source of capital and considering the environmental costs as one of the acceptable costs in economic and calculation processes. The goal of Accounting for the environment is to provide information helping the managers to evaluate performance, decision making, control, and reporting. The environmental constituents in each city include soil, air, water, energy, noise, and waste (Elijido-Ten, 2004).

Esmaeili's (2013) study showed that there was a positive and significant relationship between financial reporting and the quality of services and there was a positive and significant relationship between financial reporting and satisfaction of customers (Esmaeili, Manesh, & Golshan, 2013). Thus, the null hypothesis is rejected and study hypotheses are supported. Saeidi and Othman (2018) showed that the effect of Accounting for the environment on financial and operating indices of companies in the production of manufacturing companies, the reduction of waste production, technical aids outside of an organization to the manufacturing companies, the type of produced goods and the ratio of debt of services (paying principal and original long-term debts) to total debts of manufacturing companies (Saeidi, Othman, Saeidi, & Saeidi, 2018).

Leuz & Wysocki (2016) in a study "economic statement and regulations of financial reporting: evaluated the pieces of evidence and recommendations for further studies (Leuz & Wysocki, 2016). In this study, it is discussed about the economic outcomes of disclosure and regulation of financial rules based on the international and US evidence. They didn't find some evidence about the effects of the market and the effects out of rules but such evidence is necessary for the economic justification of rules. Besides, there is relatively rare evidence about the causal effects of disclosure and rules reports. Namakonzi & Inanga (Namakonzi & Inanga, 2014) showed that the high competition of these companies is increased by explanation, division, identification, classification, measurement, and control of the environmental protection costs control and it is based on the lack of access to the environmental management techniques, inadequate education, and a few rules.

Elsayed & Zahir (2010) in the study in Egypt regarding the evaluation of the international environmental factors and voluntarily disclosure found that the international environmental factors were affected in terms of the type and disclosure level by the organizations and institutes(Elsayed & Hoque, 2010).

Lohmann (2009) in England in a study "Toward a Different Debate in Environmental Accounting: The cases of carbon and cost-benefit (Carbon

accounting) showed that we should consider the analysis of cost-benefit and other techniques of carbon accounting based on the requirements of the Kyoto protocol and European union with more investigations(Lohmann, 2009).
Carnis (2007) in a study "On Accounting for Sustainable Development and Accounting for the Environment" showed that if Accounting for the environment is used as a thoughtful tool, it can be useful in social decision making(Cairns, 2006).

RESEARCH METHODOLOGY

This research is applied in terms of goal and is descriptive-survey in terms of the data collection method. For data collection in theoretical basics and literature of library resources, papers and books, and scientific databases and electronic journals and data collection, field method is used with a questionnaire. In this research, Gachsaran town is selected as the study area. Regarding the selection of this special case, we can say that the Gachsaran oil field is the second great oil field of Iran as located in Gachsaran town, Kohkiloye and Boyerahmad in the distance 220 km of the southeast of Ahvaz. Based on the effect of the oil and gas industry on the economy of the country, this study is of great importance. In the first step, to identify the effective factors on financial and non-financial environmental performance, the fuzzy Delphi technique is applied. Finally, to evaluate and model the relationship between variables, structural equations and the second version of smart PLS software is used. In this research in the identification section, judgment purposeful sampling method is applied and the census method is used in structural equation modeling.

Table 1- The Features Of Different Sampling

Sampling method	**Type of audience**	**Goal**	**Number of samples**	**Type of questionnaire**
Judgmental purposeful	Experts and financial experts	Support and finalizing the indices	5	Fuzzy Delphi method
Census	Managers and financial experts	Model fit and hypothesis	83	The structural equations modeling method

Data analysis First phase: Localizing the indices

In this phase, to localize the indices, as shown in the third chapter, the fuzzy Delphi method is used. In the first step, a questionnaire is distributed among 5 accounting and financial experts. This questionnaire is based on a Likert scale (without effect, low effect, average effect, high effect, very high effect). Then, this questionnaire was defined in the form of a triangular fuzzy spectrum. IN their third step, the opinion of experts in the mentioned questionnaire was combined with the fuzzy mean method. In the fourth step, the fuzzy number was transformed into crisp values, and finally in the fifth step, by considering threshold (0.7), the indices less than this value were eliminated. Based on the

theoretical literature of the effective factors on export, the researcher extracted 18 indices of the review of the literature. Then, the experts were asked to show the effect of the indices on financial and non-financial environmental reporting. Then, the questionnaire was defined as a fuzzy spectrum. Based on the final Table, only the indices of marketing, environmental, quality of reporting, political and legal factors, managerial and strategic factors remained in the model. Later, we evaluate the model by structural equation modeling and PLS software. Based on the localized indices, the model of financial and non-financial environmental reporting is shown in Figure 1.

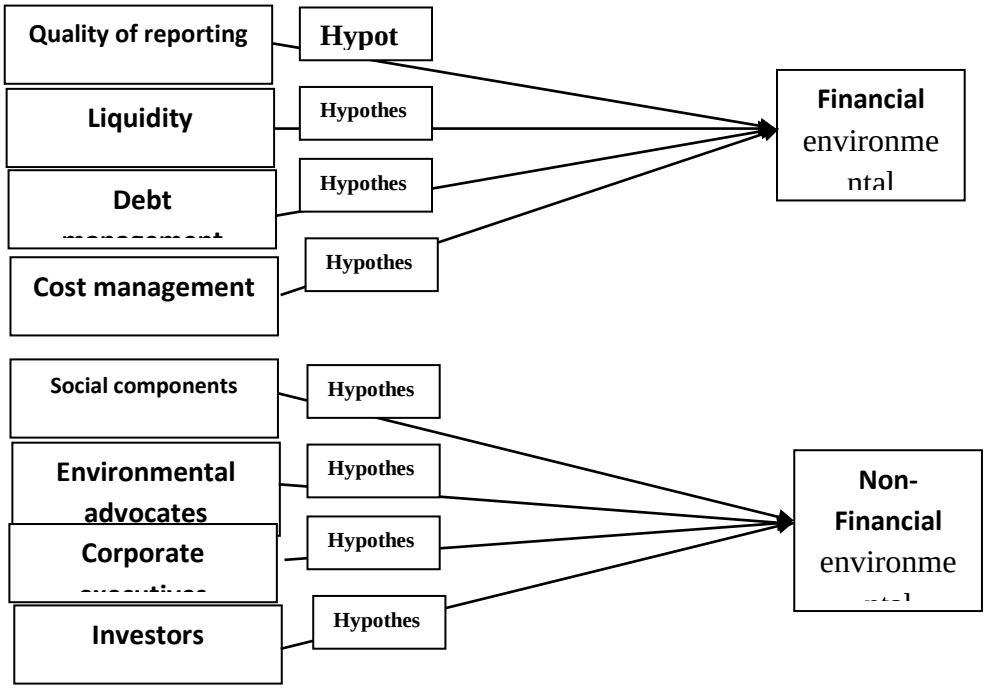

Figure 1-The Conceptual Model of Financial and Non-Financial Environmental Reporting

Second Phase: Structural Equations Modeling

Fit Measuring Model

The first important factor in the evaluation of reflective models is the single dimension of indices, this means that any index in the sum of indices should be loaded with a great factor loading only to one dimension or hidden variable. To do this, factor loading above 60% is acceptable. As shown in Figures 2, 3, the values or coefficients are divided into two groups. The first group is measurement equations as the relationship between the hidden variables (oval) and observing variables (rectangle). These equations are called a loading factor. The second set is the structural equations as the relationship between hidden variables and is used to test the hypotheses and these coefficients are called path coefficients. Based on the model in coefficients estimation, we can estimate the factor loading and path coefficients.

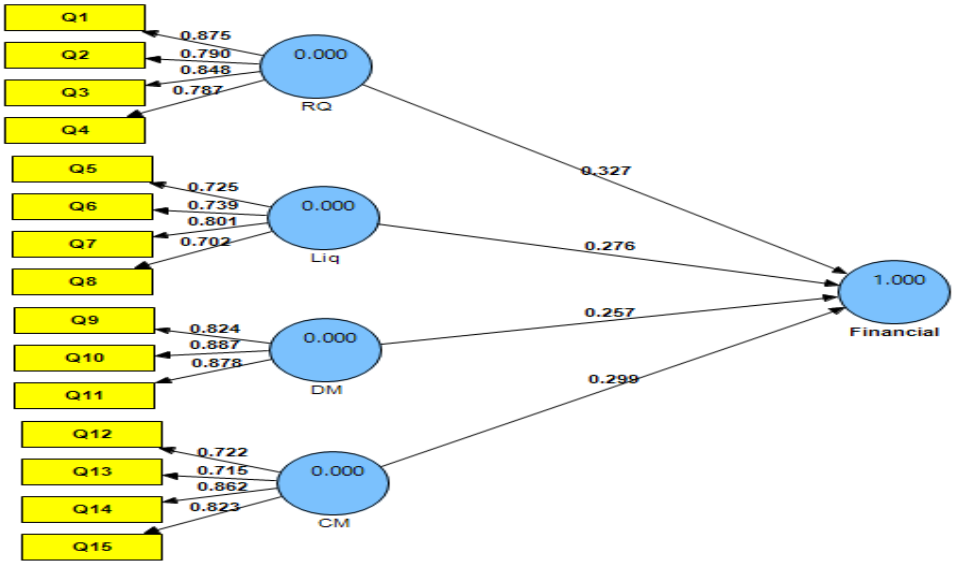

Figure 2- The Output of The Software-Tested Model of Research (Path Coefficients and Factor Loading)

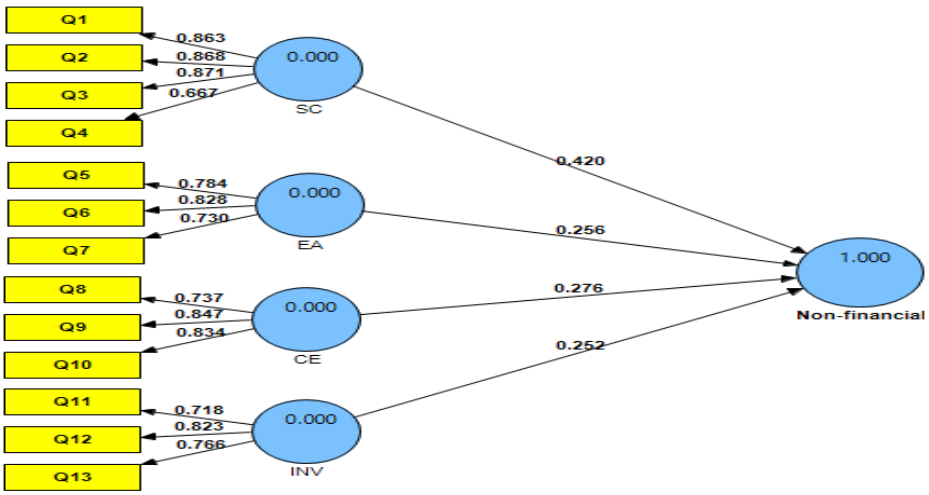

Figure 3- The Research Model at The Estimation of Standardized Coefficients For Non-Financial Environmental Reporting

To evaluate the reliability of the model, we evaluate the composite reliability and Cronbach's alpha. The validity of the questionnaire is evaluated by two convergent and divergent validity criteria as dedicated to structural equation modeling. AVE criterion indicates the mean of shared variance between each construct with its indices as shown in Table 5.

Table 5- The Report Of Cronbach's Alpha, Composite Reliability, And Convergent Validity Of Constructs Of The Model

Title in model	Hidden variables	(AVE)	The composite reliability coefficient (CR) (CR>0/7)	Cronbach's alpha coefficient (Alpha>0/7)
RQ	Reporting quality=	0.5119	0.8794	0.8396
Liq	Liquidity=	0.6034	0.8833	0.8341
DM	Debt management=	0.6102	0.8488	0.9433
CM	Cost Management=	0.5335	0.8494	0.7799
SC	Social components=	0.5943	0.8970	0.8609
EA	Environmental advocates=	0.7397	0.7339	0.9108
CE	Corporate executives=	0.6349	0.8122	0.8841
INV	Investors=	0.8773	0.8661	0.9522

As shown in Table 5, all variables have high reliability in the model. The composite reliability and Cronbach's alpha coefficient in all variables are above 0.7 and the good fit of the model is supported. AVE of all constructs is above 0.5 and the convergent validity of the model and suitability of fit of measurement models are supported.

Hypotheses Testing and Model

To evaluate the studied model, Smart PLS software is used, and to test the hypotheses, the significance of path coefficients is applied (Rezayi, 2015). To achieve statistical T, a bootstrap test with 5000 replications is used. The output of software to investigate the hypotheses is shown in Figures 4, 5. As shown in Chart 2, t coefficients among all constructs of study are greater than 1.96 and all hypotheses are supported.

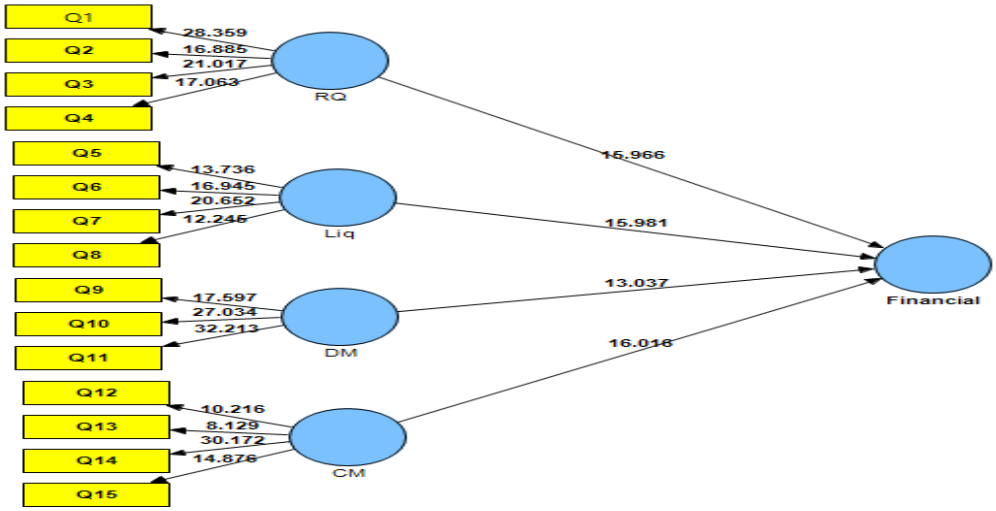

Figure 4- The Significance Coefficients Of Hypotheses In A Model For Financial Reporting Of Environment

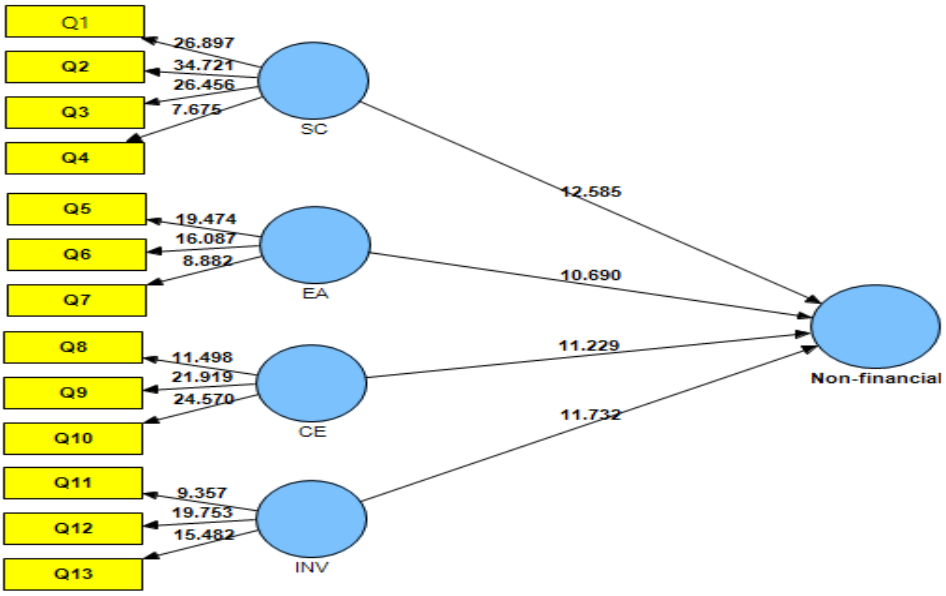

Figure 5- The Significance Coefficients of Hypotheses in Non-Financial Environmental Reporting

In the following table, we can show the results of all hypotheses of study:

Table 4-The General Results of Study Hypotheses

Hypotheses	**T statistics**	**Standardized path coefficient β**	**Support or reject the hypothesis**	**Significance**

Reporting quality ←Financial environmental reporting	15.966	0.327	Supported	Sig<0.05
Liquidity component ← Financial reporting of environment	15.981	0.276	Supported	Sig<0.05
Debt management ← Financial environmental reporting	13.037	0.257	Supported	Sig<0.05
Cost management ←Financial environmental reporting	16.016	0.299	Supported	Sig<0.05
Social component ←Non-Financial environmental reporting	12.585	0.420	Supported	Sig<0.05
Environmental advocates ←Non-Financial environmental reporting	10.690	0.256	Supported	Sig<0.05
Corporate executives ← Non-Financial environmental reporting	11.229	0.276	Supported	Sig<0.05

Investors ←Non-Financial environmental reporting	11.732	0.252	Supported	Sig<0.05

DISCUSSION AND CONCLUSION

By examining the research literature, the researcher examined the factors affecting the financial and non-financial reporting of the environment. As it turned out in the findings section, the studied indicators had a significant relationship with financial and non-financial environmental reporting. Among these, the quality of accounting information, liquidity, debt management, cost management respectively had the most relationship with financial reporting and social component, environmental advocates, company managers, and investors, respectively, had the greatest impact on non-financial reporting. The quality of accounting information as an indicator affecting its financial reporting includes relevance and reliability(Meshki & Moghadam 2011). The index of qualitative characteristics of accounting information had a greater impact on environmental financial holding. This finding was significantly correlated with the findings of Samara Sandi , and Ebadi, Jabbari's studies in 2016, which showed in their study that there is a significant relationship between accounting information quality and financial reporting quality (Samareh Sandi, Javad and Ebadi, & Farah Dokht and Jabbari, 2015). In the above explanation, we can mention the following: The higher the quality of the information provided (more comprehensible, comparable, relevant, and reliable), according to the environmental report of users' information needs (internal or external) And therefore one of the main factors in environmental reporting. Liquidity and debt management and cost management are the next factors affecting financial reporting in the environment. This finding is consistent with the findings of the study of Masoumi, Saleh Nezad, and Zarrin Kalaei in 2019(Masoumi, Salehnejad, & and Zabihi Zarrin Kalaei, 2019). In their study, they concluded that liquidity affects sustainable reporting

Based on the results of the research, the following recommendations are presented to the managers and financial authorities of the oil and gas Operation Company of Gachsaran.

The ratifications of management about the operation time of environmental plans are considered and it is assumed that the need for management is considered at the required time.

Economic nature of environmental activities and using existing and new techniques in it
Considering management policy about performing environmental activities as to whether the project is performed by the contractor based on key factors or it is delegated to any other person.

The ratifications of management about safety issues, firefighting and saving the life of people, and environmental protection can be considered in environmental activities.

Considering the inflation factor and increase of prices as recommended by planning by the valid authorities and are approved by the management.

Considering social components in planning strategies, policies, and planning of the company to make the processes of financial and non-financial reporting as systematic.

The company makes efforts to achieve environmental information in relevant important issues with society and sharing it among the managers and experts.

Use of environmental information collected in similar companies for acceptable effects on society and the environment of the company.

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