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Presentation of the model of financial behavior of accounting department employees of non-governmental public institutions based on data analytical skills (case example: Housing Foundation of Islamic Revolution)

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Abstract

The current research was conducted with the aim of presenting the financial behavior pattern of accounting department employees of non-governmental public institutions based on data analytical skills. The statistical population of the current research was all employees of the accounting department of the Islamic Revolution Housing Foundation, which was determined by the Cochran formula to have a sample size of 294. The information collected by questionnaires was analyzed by SPSS24 and Smart PLS3 software using structural equation modeling. The findings show that data analytical skills have a significant effect on the accountability of accounting department employees of non-governmental public institutions. Data analytical skills have a positive and significant effect on the participation of accounting department employees of non-governmental public institutions. Data analytical skills have a significant impact on compliance with the principles of corporate governance of accounting department employees of non-governmental public institutions. Analytical data skills have a positive and significant effect on compliance with the law of accounting department employees of non-governmental public institutions. Data analytical skills have a positive and significant effect on participation in other departments by accounting department employees of non-governmental public institutions. Data analytical skills have a positive and significant effect on the structuralism of accounting department employees of non-governmental public institutions. Data analytical skills have a positive and significant effect on the reporting quality of accounting department employees of non-governmental public institutions. Data analytical skills have a positive and significant impact on budgeting and budgetary expectations of accounting department employees of non-governmental public institutions. Finally, the results of the main hypothesis showed that data analytical skills have a positive and significant effect on the financial behavior of accounting department employees of non-governmental public institutions.

Keywords: accounting department, employees' financial behavior, data analytical skills, public institutions
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1 Introduction

In today's era, the provision of data-based products and services has caused the emergence of large economic and financial data at the level of organizations and companies, which increase in volume on a daily basis, therefore, for data management and analysis, obtaining Data analysis skills have become necessary [26]. The skill and analysis of economic and financial data show the complexities of the business environment, it is very important in order to increase its capacities, and it can show and warn managers of management risks [13]. In other words, it is possible to identify the risks facing organizations by analyzing the data and taking steps in the process of improving the organization's financial situation [5]. More than 50% of organizations consider big data as a way to improve and plan a strategic workforce and believe that it can be effective in creating efficient and targeted marketing, increasing profitability and customer satisfaction and productivity. Data analysis skills include technical skills, management skills, information technology skills and intellectual skills. Technical skills are the ability to use the knowledge, methods, techniques and equipment needed to perform a specialized task, which is obtained through experience, education and training [28]. Management skills are related to the ability to work with others, which includes communication ability, understanding motivational needs and applying leadership. Information technology skills are said to be a theoretical understanding of distributed systems, parallel programming, concurrency control, transfer process, and databases, in addition to which, in the field of building systems, they must manage and process a large amount of information, and develop multi-server components and subsystems. Structures based on the cloud system have complete mastery. Intellectual skill also refers to the use of reason and wisdom to recognize and analyze concepts [4].

Financial behavior refers to how people interpret information to make informed investment decisions, and in other words, financial behavior follows the influence of the psychological process in decision-making [23]. It examines how employees collect, interpret and process data so that they can identify deviations, mistakes and lack of answers and try to solve them [24].

Human capital analytics holds promise by providing strategic and predictive analytics to solve problems and assess progress by exploring the many variables that influence human performance. This promise has attracted the attention of HR researchers since the 1960s and has generated continued enthusiasm among HR professionals. This enthusiasm for analytics has been fueled by the possibilities it provides and the development of strategic performance measurement and reporting tools that link "intangible capabilities" (i.e., people, information, and organizational capital) to strategy implementation and performance [22]. In fact, the way human capital is managed and organized significantly affects the performance of most businesses. The power of human capital analysis is an important part of the measurement system and strategic management of the organization's performance in guiding and managing human capital. Strategic performance measurement and management systems help managers to confirm and sometimes construct mental models about how the organization is performing. Human capital is at the heart of organizations and is related to the knowledge, skills, competence, innovation and analytical ability of employees [17]. In addition, employees generate intellectual capital through competence, attitude and agility of their intellectual analysis power. Competence includes skills and training. Human capital consists of the financial knowledge, experience and talent of employees and is the main source of added value [2].

In an attempt to find a solution to the inefficiency of individual financial behavior, several studies have investigated the determinants of individual financial decision-making. The primary economic literature tends to focus research on the relationship between objective financial knowledge imparted by financial education and individual financial behavior [9, 16]. On the other hand, separate fields of research by psychological economists highlight the importance of considering psychological antecedents to explain financial behavior, and it is said that a large number of psychological characteristics are related to financial behaviors [25].

It is very important to present the model of financial behavior of employees of the accounting department of non-government public institutions based on data analysis skills. In the field of accounting, data and financial information are very important, and if the employees of the accounting department of non-governmental public institutions do not have data analysis skills, they may face problems, and face serious mistakes. Considering that non-governmental public institutions should pay attention to their financial reporting accurately and correctly, the responsibility of these institutions is to provide training to their employees. Provide the necessary in the field of financial data analysis. These trainings can include different data analysis software, financial analysis methods and financial reporting methods. By presenting the model of financial behavior of accounting department employees of non-governmental public institutions based on data analysis skills, it is possible to significantly improve the quality of financial reporting and reduce errors. Also, this model can be used as a practical guide for new employees in the management department of public non-governmental organizations and help them to quickly adapt to the process. Get familiar with financial reporting.

2 Literature and empirical background of the research

One of the issues that have a great impact on the output of economic and financial data analysis is the behavior of human resources and employees of organizations in the face of financial and economic data [19]. Financial behavior models and interprets a wide range of human resource behavior, including the development of skills and knowledge related to data creation, sharing, data analysis, data mining, data reporting, and storage within and across organizations [6]. Financial behavior includes components such as; Loss aversion, overconfidence, collective performance, risk perception, economic forecasts and information seeking. Avoidance of loss" refers to the tendency of people to avoid losses even in the hope of possible gain [27].

Overconfidence in individual abilities can lead to continuous change in investment portfolio composition and, as a result, lower investment return [21]. Collective performance behavior is an emotional behavior that occurs due to a situation or an incident of a person or persons and is transferred to others due to social contagion, and as a result, a more or less homogeneous group is created. Financial risk refers to the risks that can lead to the loss of capital in the beneficiaries. Economic forecasting is the process of estimating unknown financial situations that provides a prediction about future financial and economic events and can turn past experiences into predictions of future events [8]. Searching for information is the process of analyzing and understanding the application of concepts, synonyms and algorithms of natural language (the same conversational language of humans), the best and most useful information from sites, databases and any other source on the Internet. It is said that it is presented to the user in the search results [6].

Samson and Bhanugopan [22] in research entitled Analysis and analysis of strategic human capital and organization performance: mediating effects of managerial decision-making to the original study of Ben Some effects of strategic human capital analysis on the performance of the organization and the market and mediation with managerial decision-making based on the perspective They discussed resources, human resource accounting and persuasive theory. Our analysis, from a sample of 383 senior and middle managers, shows that managerial decision-making determines the extent to which analysis of strategic human capital, as part of a strategic performance management and measurement system, improves organizational and market performance.

Andiola et al. in [4] have been done descriptively and analytically, and the results show that accounting is a profession in which data, information processing, analysis and reporting are important components and accountants play an important role in big data analysis.

Alsabban and Alarfaj [3] have examined the empirical analysis of financial behavior in the Saudi stock market: evidence of overconfidence behavior. This research aims to empirically examine the irrational behavior of investors, especially excessive behavior in the Saudi stock market. To test for excessive market behavior, a model is designed to investigate the lag relationship between market returns and turnover. The results obtained in this research show that the financial behavior of the market has an effect on the decision of investors in the Saudi Arabian stock market.

Kandpal and Mehrotra [15] have examined the role of behavioral finance in investment decision-making, investigating behavior in India. In this research, an attempt has been made to analyze the behavior of investors regarding the investment model and the factors that an investor pays attention to when making investment decisions. The results show that when deciding on a wise investment, factors such as spending habits, expenses, income, understanding towards investment, lifestyle change, time period, thought process, natural habits, individual's financial study, risk tolerance Capacity, liquidity and expected return have an important impact.

Roohani and Markelevich [20] have examined the use of analysis and analysis of accounting data in the accounting curriculum. In this research, the breakdown and analysis of accounting data in the accounting curriculum and improving the skills and analytical thinking of students have been studied in different accounting courses. This article reports some of the experiences of accounting professors using analysis in accounting.

Noorbakhsh et al. in [18] investigate the effect of behavioral financial knowledge such as the attitude of investment fund managers towards the market, the behavior of other managers towards the behavior themselves, as well as the information sources used and investment strategies adopted by the attitude of investment fund managers. The data collected from the questionnaires were analyzed using Eviews and Spss software and the logit regression model was used to check the existing relationships between the variables. The results show that when a manager shows a behavior that is influenced by his emotions and feelings and not based on rationality, such as dynamic range, belief bias, reflection effect and native dependence bias, this behavior has a negative and inverse relationship with the manager's knowledge of Financial knowledge is behavioral and the only factor that affects behavioral financial knowledge from the manager's point of view is the error of diagnosis.

Afkhami Ardakani et al. in [1] investigated the effect of data analytical skills on the financial behavior of employees

of the accounting department of non-governmental public institutions (case example: Foundation Islamic Revolution Housing). The methods of collecting information in this research are library and field. In this research, the Islamic Revolution Housing Foundation and all the employees of its accounting and support department are considered as the territory, the sample size is 234. The data has been analyzed using the structural equation model and especially the path analysis technique using SmartPLS software. The findings show that data analysis skills have a significant impact on the financial behavior of the employees of the accounting department of non-governmental public institutions. The effect of data analysis skills on the financial behavior of female employees of the accounting department of non-governmental public institutions is the same compared to men and also experienced data analysis skills are the same on loss aversion, overconfidence, collective performance, risk perception, economic forecasts and information search have a significant impact.

2.1 Group behavior of the financial market model of Chang, Cheng and Khurana

To examine group behavior in financial markets, the Chang, Cheng and Khorana (CCK) [10] model is used, based on which when there is group behavior in the market, the return of companies is similar to the market return. Regarding the deviations of companies' returns from returns, The market will decrease forever. Before the BIN Chang model, Cheng and Khorana are two other common models Namely, the model of Christie and Huang (CH) [11] and the model of Hwang and Salmon (HS) [14] are introduced. The Christie and Huang [11] model for discovering group behavior in the capital market is based on Returns and has focused on stocks and the whole market. Christie and Huang proposed that behavior the group can separate itself Revealing stock returns d. According to them, it is because it is cold for investors to make capital decisions Transfer following the consensus of the whole market has a tendency, we can expect the deviation of companies' stock returns from the return of the total market to be low. They used Van Zeer's regression equation to test the behavior of the group. The level of deviation of the return of each share from the total return of the market has decreased recently. Therefore, they used two allowed variables, which are related to recession and prosperity. In other words, the level of deviations changes depending on the time of market turbulence.

$$CSSD_t = \alpha + \beta_L D_t^L + \beta_U D_t^U + \varepsilon_t \tag{2.1}$$

$CSSD_t$: deviations of the return of each share from the return of the entire market on day t.

D_t^L: allowed variable to consider the abnormal fluctuations of the market yield reduction. If yield on day t, located at the lower limit of the normal distribution, the return is equal to k and otherwise equal to is zero

D_t^U: the allowed variable to take into account the abnormal fluctuations of the increase in market returns. If yield on day t, located at the upper limit of the normal distribution of returns, it is equal to k, and otherwise it is equal to is zero

α: average deviation from the market return.

The presence of β_L negative meaning (about the declining market) and the existence β_U is negative meaningful (about the growth market) indicates the formation of the group's behavior by participation market participants, because of the negative relationship between the level of market deviations and fluctuations. It means that during market turbulence, the level of deviation decreases. Christie and Huang calculate stock return deviations from the cross-sectional standard deviation Companies' stock returns used market returns. Huang and Salmon presented the following relationship for group behavior:

$$H_{mt}^* = \frac{1}{N_t} \sum_{i=1}^{N_t} \left(\frac{b_{imt}^s - 1}{\frac{\hat{\sigma}_{\varepsilon it}}{\hat{\sigma}_{mt}}} \right)^2 \tag{2.2}$$

H_{mt}^*: standardized value of group behavior at time t

$\sigma_{\varepsilon it}$: deviation of the residual Regression equations for share i

σ_{mt}: standard deviation of monthly market returns

N: the number of portfolio companies

In this relationship b_{imt}^s The group beta estimator is calculated as follows:

$$b_{imt}^s = \frac{\hat{\sigma}_{imt}^2}{\hat{\sigma}_{mt}^2} = \frac{cov(r_{it}, r_{mt})}{var(r_{mt})} \tag{2.3}$$

$$var(b_{imt}^s) = \frac{\hat{\sigma}_{\varepsilon it}^2}{\hat{\sigma}_{mt}^2} \tag{2.4}$$

In this regard $\hat{\sigma}^2_{imt}$ *cov* r_{it} it and r is mt and $\hat{\sigma}_{mt}$ is the difference between r_{mt} and it $\hat{\sigma}_{\varepsilon}$ The variance is the sample residuals calculated based on regression.

r_{it} and r_{mt} are the return of stock i at time t and the market return for the same period, respectively.

In this model, if the variance (H^*_{mt}) in Eq above is equal to zero, the beta of different shares of the same market has changed, which indicates complete group behavior, and the greater the amount of variance (H^*_{mt}) to increase, it has been deducted from the amount of group behavior. However, the Chang, Cheng and Khorana (CCK) model [10], which is used in this research, is based on the premise that the lower the deviations of stock returns from market returns, the lower the capital's desire Investors follow the market more. In other words, the stock returns of companies do not have dispersion and are like market returns. In this model, deviations of companies' returns are dependent variables and from the following relationship to hand come

$$CSAD_t = \frac{1}{N}\sum_{i=1}^{N}|R_{i,t} - R_{m,t}| \tag{2.5}$$

In this relationship, CSAD is the absolute value of the cross-sectional deviation of companies' stock returns from market returns on day t. $R_{i,t}$ is the return of company i's share on day t and $R_{m,t}$ is the average return of N shares in the total market portfolio on day t. N The number of companies in the market portfolio.

In order to obtain the deviations of the companies' stock returns from the market returns, we need to obtain the stock returns in the market portfolio as well as the market returns during the research period. At the same time, the market return and the stock return in the portfolio on a daily basis are calculated.

$$R_{i,t} = \frac{P_{i,t} - P_{i,t-1}}{P_{i,t-1}} \tag{2.6}$$

$P_{i,t}$ is the current share price and $P_{i,t-1}$ is the previous day's share price of the company.

If the company has a profit distribution and capital change, the previous day's price will be adjusted. The value of $R_{m,t}$ is obtained from the average of the daily returns of N companies in the market portfolio It comes and its relationship is as follows:

$$R_{m,t} = \frac{1}{N}\sum_{i=1}^{N}R_{i,t} \tag{2.7}$$

CCK model predicts a positive relationship between market returns and company return deviations, when the market is not in an abnormal state, which means that the positive market return coefficient indicates the increase in company return deviations from the market return. The negative and significant coefficient of the square of the market return shows the decrease in the deviations of the company's return from the market return, and It confirms the existence of group behavior in the market.

In this research, the following model is used to investigate group behavior in the distribution of the entire market.

$$CSAD_t = \gamma_0 + \gamma_1 |R_{m,t}| + \gamma_2 R^2_{m,t} + \varepsilon_t \tag{2.8}$$

In this model, γ_0 indicates the average level of stock return deviations from the market return, in market B, it is turbulence, that is, when $R_{m,t}$ is equal to zero. γ_1 is the coefficient of market return and γ_2 is the square coefficient of market return.

The following model is used to compare the increasing and decreasing market, which in fact is the same as the previous model, but by means of a virtual variable, the rising and falling markets are separated have became.

$$CSAD_t = \gamma_0 + \gamma_1(1-D)R_{m,t} + \gamma_2 D R_{m,t} + \gamma_3(1-D)R^2_{m,t} + \gamma_4 D R^2_{m,t} + \varepsilon_t \tag{2.9}$$

$$\begin{aligned} D &= 1 \quad if \quad R_{m,t} < 0 \\ D &= 0 \quad if \quad R_{m,t} \geq 0 \end{aligned} \tag{2.10}$$

In this regard, γ_1 is the market return coefficient in the incremental market, γ_2 is the market return coefficient in the market decreasing, γ_3 is the square coefficient of the market return in the increasing market and γ_4 is the market return coefficient in the decreasing market. D is the dummy variable that separates bullish and bearish markets and how to calculate it has already been explained. Considering that the distribution of the dependent variable of this research (CSAD) was not normal and was not normalised by normalisation methods, instead of using a simple linear regression in this model, a robust Van regression was used to estimate the coefficients.

2.2 Research hypotheses

Based on the stated principles and the main purpose of the current research, the research hypotheses are:

1. Data analytical skills have a significant impact on the accountability of accounting department employees of non-governmental public institutions
2. Data analytical skills have a significant impact on the participation of accounting department employees of non-governmental public institutions.
3. Data analytical skills have a significant impact on compliance with the principles of corporate governance of accounting department employees of non-governmental public institutions.
4. Data analytical skills have a significant impact on compliance with the law of accounting department employees of non-governmental public institutions.
5. Data analytical skills have a significant impact on participation in other departments by accounting department employees of non-governmental public institutions.
6. Data analytical skills have a significant impact on the structuralism of accounting department employees of non-governmental public institutions.
7. Data analytical skills on reporting quality, the staff of the accounting department of non-governmental public institutions has a significant impact.
8. Data analytical skills have a significant impact on budgeting and budgetary expectations of accounting department employees of non-governmental public institutions.

Based on the research literature and the basics of the research, the concept model was designed in the form of 1:

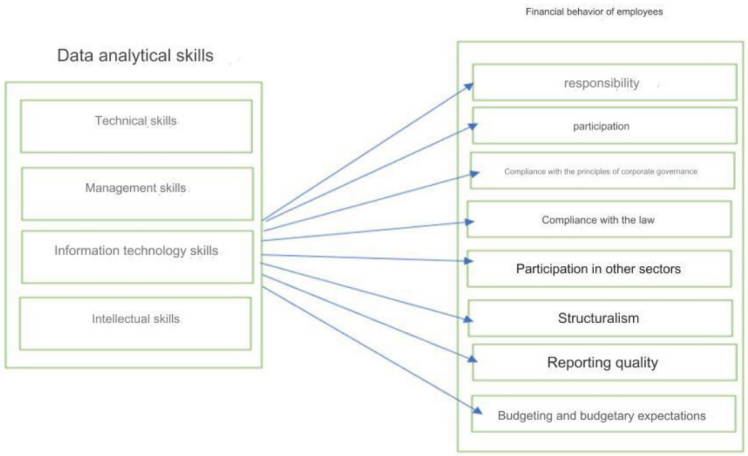

Figure 1: Conceptual model of the research

3 Research methodology

In general, research methods can be divided according to two criteria: first, the goal of the research and second, the method of data collection. Based on this, the current research is descriptive research from the point of view of the purpose of application and the method of collecting information. The goal of applied research is to develop applied knowledge in a specific field, in other words, applied research is directed towards the scientific application of knowledge. Survey research is considered a branch of descriptive research, in this type of research, a sample is selected from the study population, and the need to study the sample is because it is difficult to study the entire society, and the sample can give an accurate picture. The studied statistics will show that One of its most important advantages is the ability to generalize the results.

Therefore, from the point of view of the nature and purpose of this research, and the point of view of the data collection method, it is a descriptive survey. Also, from the point of view of the way of collecting information, this research is cross-sectional, which was carried out between 2020 and 2023, and in this regard, it is a type of field research.

According to the statistics and information obtained, about 650 employees of the accounting and support department in the housing foundation are working in the whole country, according to Cochran's formula, the sample size is

242 people, which is enough to ensure bread. Most of the 310 questionnaires were distributed and collected among the employees of the foundation's accounting and support department, of which only 294 questionnaires were completely completed and completed. There was statistical analysis. Also, the return rate of the questionnaire was 94%.

In this research, a researcher-made questionnaire was used to collect data. For each question, several options and answers are selected, and the respondent must choose one of them as the answer. Each of the answers is organized in a way that, while being logical for that question, it is separate from the answers related to other questions. Therefore, the questionnaire is as described in Table 1:

Table 1: Questionnaire items

Dimensions	**Variable name**	**Number of questions**
Data analytical skills	Technical skills	1–3
	Management skills	4–6
	Information technology skills	7–9
	Intellectual skills	10–11
Financial behavior	responsibility	12–15
	participation	16–18
	Compliance with the principles of corporate governance	19–22
	Compliance with the law	23–25
	Participation in other departments	26–28
	Structuralism	29–32
	Reporting quality	33–35
	Budgeting and budgetary expectations	36–38

In order to calculate the base Questionnaire in this research from Cronbach's alpha coefficient and Composite reliability (CR) were used, which are shown in Table 2.

Table 2: Reliability coefficient of the questionnaire

Variables	**Code**	**Cronbach's alpha**	**CR**
Budgeting and budgetary expectations	RBA	0.781	0.873
Compliance with the principles of corporate governance	RRA	0.838	0.892
Compliance with the law	RRK	0.761	0.862
Structuralism	RSG	0.841	0.894
Responsibility	RMP	0.799	0.869
Participation	RMT	0.761	0.862
Participation in other sectors	RMS	0.769	0.867
Data analytical skills	MTD	0.935	0.945
Information technology skills	MT	0.795	0.880
Technical skills	MF	0.798	0.881
Intellectual skills	MK	0.738	0.884
Management skills	MM	0.791	0.878
Reporting quality	RKG	0.774	0.869

According to the values of Cronbach's alpha, the composite reliability reported in table 2. As can be seen, all hidden variables have Cronbach's alpha value and composite reliability above 0.7, which indicates that the model has reliability (either Cronbach's alpha opinion and what from in terms of combined reliability) is suitable.

To check the validity of the questionnaire, two criteria of convergent validity and divergent validity have been used. The results of the convergent validity coefficient (AVE) are in Table 3.

Table 3 shows the results of exiting the model for the AVE index. As can be seen, the result shows the appropriateness of the convergent validity criterion (AVE). In order to check the validity and divergence of the measurement model, Fronel and Locker criteria are used. The results of this measure are expressed in Table 4.

Root of AVE on the diameter of the table 4 placed can be. It confirmed the divergent validity of the model at the structure level in terms of Fronel's and Locker 's criteria.

Table 3: Convergent Validity Index (AVE) coefficients of each variable

Variables	**Code**	**AVE**
Budgeting and budgetary expectations	RBA	0.696
Compliance with the principles of corporate governance	RRA	0.673
Compliance with the law	RRK	0.676
Structuralism	RSG	0.678
Responsibility	RMP	0.624
Participation	RMT	0.676
Participation in other sectors	RMS	0.684
Data analytical skills	MTD	0.609
Information technology skills	MT	0.709
Technical skills	MF	0.713
Intellectual skills	MK	0.792
Management skills	MM	0.705
Reporting quality	RKG	0.688

Table 4: Divergent validity

Variables	**Budgeting and budgetary expectations**	**Compliance with the principles of corporate governance**	**Compliance with the law**	**Structuralism**	**Responsibility**	**Participation**	**Participation in other sectors**	**Data analytical skills**	**Information technology skills**	**Technical skills**	**Intellectual skills**	**Management skills**	**Reporting quality**
Budgeting and budgetary expectations	0.9												
Compliance with the principles of corporate governance	0.8	0.7											
Compliance with the law	0.7	0.7	0.8										
Structuralism	0.7	0.8	0.7	0.8									
responsibility	0.7	0.8	0.7	0.8	0.8								
participation	0.7	0.8	0.7	0.8	0.7	0.8							
Participation in other sectors	0.7	0.7	0.7	0.8	0.7	0.7	0.9						
Data analytical skills	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.9					
Information technology skills	0.7	0.8	0.7	0.8	0.7	0.8	0.7	0.8	0.8				
Technical skills	0.7	0.8	0.7	0.8	0.7	0.8	0.8	0.9	0.8	0.9			
Intellectual skills	0.7	0.7	0.6	0.7	0.7	0.7	0.7	0.8	0.7	0.7	0.8		
Management skills	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.8	
Reporting quality	0.7	0.8	0.7	0.8	0.8	0.7	0.7	0.8	0.7	0.7	0.7	0.8	0.9

4 Data analysis

In this part of the research, descriptive statistics and inferential statistics methods have been used to analyze the information extracted from the questionnaire. First by using SPSS software, each variable is described in the form of tables and statistical indicators, and then for data analysis and analysis, hypothesis testing and overall. The generalization of the results from the sample to the statistical population was done using the structural equation modeling method using Smart PLS software. In this section, the descriptive statistics of the main independent variable of the research were examined. Table 5 shows the descriptive statistics of the variables used in the research.

Table 5: Descriptive statistics

Variables	Average	standard deviation	crookedness	Elongation
Technical skills	3.189	1.327	-0.347	-1.402
Management skills	3.260	1.402	-0.319	-1.420
Information technology skills	3.252	1.419	-0.290	-1.462
Intellectual skills	3.318	1.483	-0.331	-1.416
Data analytical skills	3.249	1.282	-0.418	-1.595
responsibility	3.315	1.318	-0.400	-1.264
participation	3.280	1.392	-0.304	-1.436
Compliance with the principles of corporate governance	3.329	1.365	-0.420	-1.340
Compliance with the law	3.290	1.338	-0.348	-1.272
Participation in other sectors	3.311	1.366	-0.350	-1.336
Structuralism	3.318	1.362	-0.408	-1.405
Reporting quality	3.315	1.397	-0.395	-1.383
Budgeting and budgetary expectations	3.339	1.385	-0.366	-1.338

In Table 5, the descriptive statistics including the mean concentration criteria and also the dispersion criterion of the standard deviation for the independent variable of the investigated questionnaires are given.

The first and most primary criteria for measuring the relationship between structures in the model (structure section), significant numbers T-values. If the value of these numbers exceeds 1.96, it indicates the correctness of the relationship between the constructs, and as a result, the research hypotheses are confirmed at the confidence level of 95%. In the figures 2 and 3, the model related to the amount of R T-values are provided.

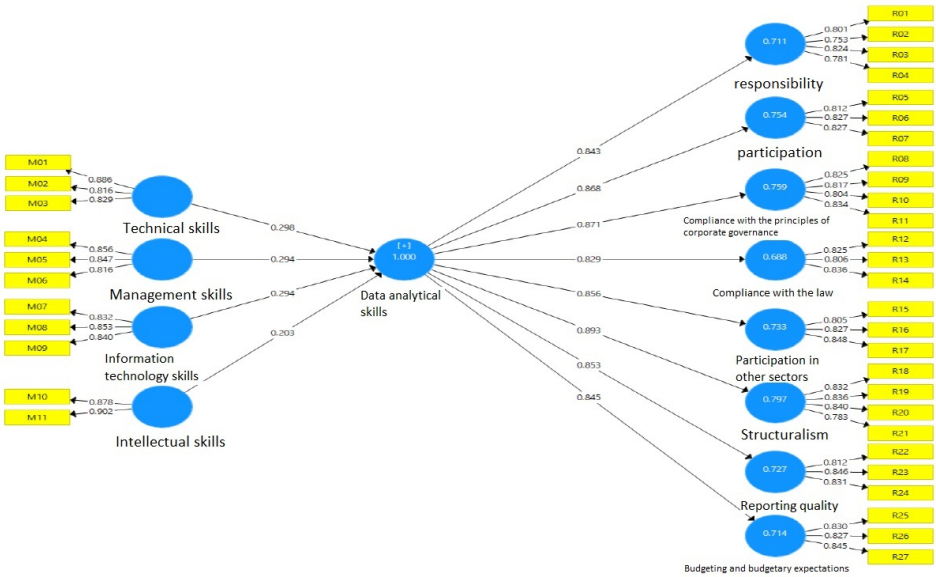

Figure 2: The model of the structure in the egg state of standard B cells

According to table 6, it is clear that the model has strong predictive power. Because the predictive power of most of the structures has an intensity close to 0.35.

After checking the fit of the measurement models, structural model and general model, according to the data analysis algorithm in the PLS method, the researcher is allowed to investigate and test the relationships between his variables. In this section, standardized path coefficients related to hypotheses and t values are examined. To confirm the hypotheses, the absolute value of t value should be greater than or equal to 1.96. The values between these two values indicate that there is no significant difference in the value calculated for the -regression weights with zero value at the 95% level. The results related to the first research hypothesis are shown in Table 7.

Examining the effect coefficient of data analytical skills on accountability in the above table shows that this path

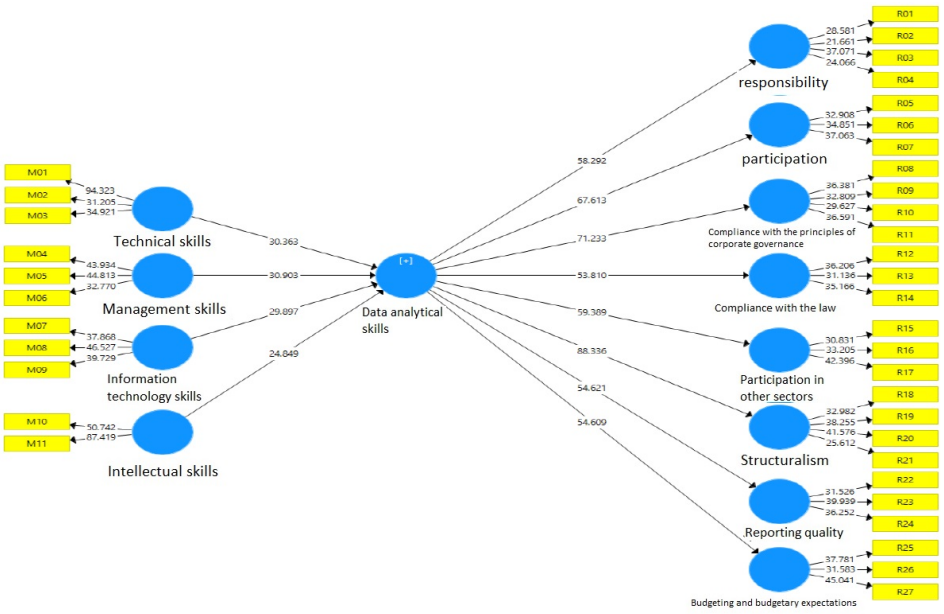

Figure 3: The significance coefficient (T-values) of the relationships of each of the main factors with the coder.

Table 6: Path coefficient and significant coefficient t for the relationships between research constructs

The path of relationship between hidden structures	**Path coefficients**	**t-value**	**Result**
RMP←MTD	0.843	58.292	It is meaningful
RMT←MTD	0.868	67.613	It is meaningful
RRA←MTD	0.871	71.233	It is meaningful
RRK←MTD	0.829	53.810	It is meaningful
RMS←MTD	0.856	59.389	It is meaningful
RSG←MTD	0.893	88.336	It is meaningful
RKG←MTD	0.835	54.621	It is meaningful
RBA←MTD	0.845	54.609	It is meaningful

Table 7: The results of estimating the significance coefficients of t and the standardized path coefficient of the first hypothesis

The first hypothesis	**path coefficient (β)**	**t-value**	**Significance level**	**Result**
Data analytical skills→ accountability	0.843	58.292	0.001	confirmation

coefficient is estimated at 0.843. Considering that the significance value (t-value) is equal to 58.292 and is greater than 1.96 and the significance level is less than 0.05; It can be concluded that this path coefficient is significant at the error level of 0.05; That is, data analytical skills have a positive and significant effect on accountability. With an increase of one standard deviation in the scores of data analytical skills, we will see an increase in the scores of responsibility as much as 0.843 standard deviations. Therefore, data analytical skills will increase accountability. Therefore, according to the collected data, it can be said that the first hypothesis of the research that there is an effect of data analytical skills on accountability is confirmed with a probability of 95%. The results related to the second research hypothesis are shown in Table 8.

Table 8: The results of estimating the significance coefficients of t and the standardized path coefficient of the second hypothesis

The second hypothesis	**path coefficient (β)**	**t-value**	**Significance level**	**Result**
Participation→ data analytical skills	0.868	67.613	0.001	confirmation

Examining the effect coefficient of data analytical skills on participation in the above table shows that this path coefficient is estimated at 0.868. Considering that the significance value (t-value) equal to 67.613 is greater than 1.96 and the significance level is less than 0.05; It can be concluded that this path coefficient is significant at the error level of 0.05; That is, data analytical skills have a positive and significant effect on participation. With an increase of one

standard deviation in the data analysis skills scores, we will see an increase in participation scores of 0.868 standard deviations. Therefore, data analysis skills will increase participation. Therefore, according to the collected data, it can be said that the second hypothesis of the research that there is an effect of data analytical skills on participation is confirmed with a probability of 95%. The results related to the third research hypothesis are shown in Table 9.

Table 9: The results of estimating the significance coefficients of t and the standardized path coefficient of the third hypothesis

The third hypothesis	**path coefficient (β)**	**t-value**	**Significance level**	**Result**
Analytical skills of data→ compliance with the principles of corporate governance	0.871	71.233	0.001	confirmation

Examining the effect coefficient of data analytical skills on compliance with corporate governance principles in the above table shows that this path coefficient is estimated at 0.871. Considering that the significance value (t-value) equal to 71.233 is greater than 1.96 and the significance level is less than 0.05; It can be concluded that this path coefficient is significant at the error level of 0.05; That is, data analytical skills have a positive and significant effect on compliance with the principles of corporate governance. With an increase of one standard deviation in the scores of data analytical skills, we will see an increase in the scores of compliance with the principles of corporate governance by as much as 0.871 standard deviations. Therefore, data analytical skills will increase compliance with the principles of corporate governance. Therefore, according to the collected data, it can be said that the third hypothesis of the research that there is an effect of data analytical skills on compliance with the principles of corporate governance is confirmed with a probability of 95%. The results related to the fourth research hypothesis are shown in Table 10.

Table 10: The results of estimating the significance coefficients of t and the standardized path coefficient of the fourth hypothesis

The fourth hypothesis	**path coefficient (β)**	**t-value**	**Significance level**	**Result**
Analytical skills of data→compliance with the law	0.829	53.810	0.001	confirmation

Examining the effect coefficient of data analytical skills on compliance with the law in the above table shows that this path coefficient is estimated at 0.829. Considering that the significance value (t-value) equal to 53.810 is greater than 1.96 and the significance level is less than 0.05; It can be concluded that this path coefficient is significant at the error level of 0.05; That is, data analytical skills have a positive and significant effect on compliance with the law. With an increase of one standard deviation in the data analysis skills scores, we will see an increase in the law enforcement scores by 0.829 standard deviations. Therefore, data analytical skills will increase compliance with the law. Therefore, according to the collected data, it can be said that the fourth hypothesis of the research that there is an effect of data analysis skills on compliance with the law is confirmed with a probability of 95%. The results related to the fifth research hypothesis are shown in Table 11.

Table 11: The results of estimating the significance coefficients of t and the standardized path coefficient of the fifth hypothesis

The fifth hypothesis	**path coefficient (β)**	**t-value**	**Significance level**	**Result**
Data analytical skills.Participation→in other departments	0.856	59.389	0.001	confirmation

Examining the effect coefficient of data analytical skills on participation in other sectors in the above table shows that this path coefficient is estimated at 0.856. Considering that the significance value (t-value) equal to 59.389 is greater than 1.96 and the significance level is less than 0.05; It can be concluded that this path coefficient is significant at the error level of 0.05; That is, data analytical skills have a positive and significant effect on participation in other sectors. With an increase of one standard deviation in the scores of data analysis skills, we will see an increase in the scores of participation in other sectors by as much as 0.856 standard deviations. Therefore, data analysis skills will increase participation in other sectors. Therefore, according to the collected data, it can be said that the fifth hypothesis of the research that there is an effect of data analytical skills on participation in other departments is confirmed with a probability of 95%. The results related to the sixth research hypothesis are shown in Table 12.

Examining the effect coefficient of data analytical skills on structuralism in the above table shows that this path coefficient is estimated at 0.893. Considering that the significance value (t-value) equal to 88.336 is greater than 1.96 and the significance level is less than 0.05; It can be concluded that this path coefficient is significant at the error level of 0.05; That is, data analytical skills have a positive and significant effect on structuralism. With an increase of one

Table 12: The results of estimating the significance coefficients of t and the standardized path coefficient of the sixth hypothesis

The sixth hypothesis	**path coefficient (β)**	**t-value**	**Significance level**	**Result**
Data analysis skills→structuralism	0.893	88.336	0.001	confirmation

standard deviation in the scores of data analytical skills, we will see an increase in the scores of structuralism as much as 0.893 standard deviations. Therefore, data analytical skills will increase structuralism. Therefore, according to the collected data, it can be said that the sixth hypothesis of the research, that there is an effect of data analytical skills on structuralism, is confirmed with a probability of 95%. The results related to the seventh research hypothesis are shown in Table 13.

Table 13: The results of estimating the significance coefficients of t and the standardized path coefficient of the seventh hypothesis

The seventh hypothesis	**path coefficient (β)**	**t-value**	**Significance level**	**Result**
Data analytical skills→reporting quality	0.853	54.621	0.001	confirmation

Examining the effect coefficient of data analytical skills on reporting quality in the above table shows that this path coefficient is estimated at 0.853. Considering that the significance value (t-value) equal to 54.621 is greater than 1.96 and the significance level is less than 0.05; It can be concluded that this path coefficient is significant at the error level of 0.05; That is, data analytical skills have a positive and significant effect on the quality of reporting. With an increase of one standard deviation in the data analytical skills scores, we will see an increase in the reporting quality scores as much as 0.853 standard deviations. Therefore, data analytical skills will increase the quality of reporting. Therefore, according to the collected data, it can be said that the seventh hypothesis of the research that there is an effect of data analytical skills on the quality of reporting is confirmed with a probability of 95%. The results of the eighth research hypothesis are shown in Table 14.

Table 14: The results of estimating the significance coefficients of t and the standardized path coefficient of the eighth hypothesis

The eighth hypothesis	**path coefficient (β)**	**t-value**	**Significance level**	**Result**
Data analysis skills→budgeting and budget expectations	0.845	54.609	0.001	confirmation

Examining the effect coefficient of data analytical skills on budgeting and budgetary expectations in the above table shows that this path coefficient is estimated at 0.845. Considering that the significance value (t-value) equal to 54.609 is greater than 1.96 and the significance level is less than 0.05; It can be concluded that this path coefficient is significant at the error level of 0.05; That is, data analytical skills have a positive and significant effect on budgeting and budgetary expectations. With a one-standard-deviation increase in data analysis skills scores, we will see an increase in budgeting scores and budget expectations by 0.845 standard deviations. Therefore, data analytical skills will increase budgeting and budgetary expectations. Therefore, according to the collected data, it can be said that the eighth hypothesis of the research that there is an effect of data analytical skills on budgeting and budgetary expectations is confirmed with a probability of 95%.

5 Conclusion

Based on the results, it can be concluded that data analysis skills can have a positive and meaningful effect on the responsibility of accounting department employees of other public institutions to have red By using these skills, accounting department employees can accurately and completely analyze financial and accounting data and ensure their accuracy. These skills also help employees to identify the necessary improvements in accounting processes and prevent the possibility of financial errors. In general, the use of data analysis skills can lead to a significant improvement in the accounting practice of non-government public institutions. The results of the research with the research; Salmani Mojaveri and Khosravian [21], Etemad and Payami [12] and Andiola et al. [4] Data analysis skills led to an increase in the participation of the accounting department employees of non-governmental organizations because by using these skills, accounting department employees will be able to analyze the financial and accounting data accurately and completely and to identify the necessary improvements in the accounting processes. This causes the employees to implement the necessary improvements and prevent the occurrence of financial errors. Also, by increasing the accuracy and accuracy of data, public trust in non-governmental public institutions will also increase.

forever As a result, data analysis skills can lead to significant improvement in the accounting performance of non-government public entities. The results of the research hypothesis are in some ways aligned with the research of Salmani Mojaveri and Khosravian [21] and Alsabban and Alarfaj [3]. Data analysis skills increase the legitimacy of the corporate governance principles of the accounting department staff of non-governmental public institutions because by using these skills, employees will be able to accurately and completely analyze financial and accounting data and identify necessary improvements in accounting processes. This makes financial and accounting information available to managers and other shareholders clearly and accurately, and the principles of corporate governance are respected. Also, by increasing the accuracy and accuracy of data, public trust in non-governmental public institutions will increase. This will also improve corporate governance. As a result, data analysis skills can lead to significant improvement in compliance with corporate governance principles of non-governmental public institutions. The results of the research with the research; Salmani Mojaveri and Khosravian [21], Etemad and Payami [12] and Andiola et al. [4]. The skills of data analysis will increase the legitimacy of the employees of the accounting department of non-government institutions because by using these skills, the employees will be able to accurately and completely analyze the financial and accounting data and ensure compliance with the law. By having accurate and correct data, employees can adhere to financial and accounting laws and regulations, and if there is any violation, they can quickly identify it and fix This causes non-governmental public institutions to adhere to the rule of law in all their activities and prevent the consequences of violating the law. As a result, data analysis skills can lead to a significant improvement in the compliance of accounting department employees of non-government public institutions. The results of the research with the research; Andiola et al. [4] have taken a different path. Data analysis skills increase participation in other departments by employees of the accounting department of non-governmental public institutions. With these skills, employees can accurately and completely analyze financial and accounting data and provide useful information to other departments. This causes other departments to use accurate and correct data for decision-making, and as a result, the overall performance of the public institution, not the eternal improvement. In addition, with the increase in cooperation and communication between departments, the possibility of any violations or errors in the data decreases. Forever and avoids the consequences arising from it. Therefore, data analysis skills can lead to a significant improvement in the participation of employees in the accounting department of non-government public institutions with other departments. The results of the research hypothesis are in some ways aligned with the research of Salmani Mojaveri and Khosravian [21] and Alsabban and Alarfaj [3]. Data analysis skills have a positive and meaningful effect on the structuring of employees in the accounting department of non-governmental organizations, because with these skills, employees will be able to Analyze financial and accounting in an orderly and organized manner. This causes the employees of the accounting department of non-government public institutions to look at and work with the data in structured and accurate ways. This causes the employees of the accounting department to act more effectively in the analysis of financial and accounting data and information, and hence, the structure orientation in the accounting department improves, forever. Also, with data analysis skills, the employees of the accounting department can accurately and correctly provide financial and accounting information to other departments and as a result, interaction and cooperation between departments improve forever This causes the employees of the accounting department to find more awareness of their importance and role in the organization and act in structural ways. Therefore, data analysis skills can lead to a significant improvement in the structural orientation of accounting department employees of non-government public institutions. The result of the hypothesis The research is in line with the research of Salmani Mojaveri and Khosravian [21] and Alsabban and Alarfaj [3]. Data analysis skills have a positive and meaningful effect on the reporting quality of accounting department employees of non-governmental organizations because with these skills, employees. They will be able to analyze financial and accounting data accurately and correctly, and useful and useful information for other departments. This makes the accounting reports produced by the accounting department to be better and more accurate. Also, with data analysis skills, accounting department employees can accurately and correctly provide financial and accounting information to managers and make decisions to provide organizational support and as a result, better decisions can be made. This causes the employees of the accounting department, one of the most important departments of the organization, to have a significant improvement in the reporting quality and a professional manner, and act with high precision. Therefore, data analysis skills can lead to a significant improvement in the reporting quality of accounting department staff of non-governmental public institutions. The results of this research hypothesis are consistent with the research of Ashraf et al. [7] and Kandpal and Mehrotra [15]. Data analysis skills have a positive and significant impact on budgeting and budget expectations of accounting department employees of non - governmental public institutions, because having these skills Employees will be able to accurately and accurately analyze financial and accounting data and provide useful and applicable information for budgeting and budget expectations. By accurately analyzing the data, employees can identify the best budgeting solutions and, as a result, benefit from better information for estimating the organization's expenses and revenues. Also, with data analysis skills, accounting department employees can accurately and correctly provide budget expectations for managers and decision-makers provide organization and as a result, a better decision can be made.

This causes the employees of the accounting department, one of the most important departments of the organization, to have a noticeable improvement in budgeting and budgetary expectations, and professional methods, and act with high precision. Therefore, data analysis skills can be significantly improved In the budgeting and budgetary expectations of the employees of the accounting department of non-government public institutions, they should be followed.

It is suggested that to increase the participation of the employees of the accounting department of non-governmental public institutions, the skills of data analysis should be taught to the employees. With this work, employees will be able to analyze and analyze financial and accounting information with more precision and accuracy, thus the performance and efficiency of the organization do not improve. In addition, by providing training related to data analysis, employees will have a significant improvement in their decision-making processes. They will be able to make better decisions about financial and accounting issues and increase productivity. organization to help. As a result, training data analysis skills in the employees of the accounting department of non-governmental public institutions can create a significant improvement in the performance and efficiency of the organization and help the participation of employees in decision-making processes. It is suggested that managers and those in charge of this matter pay due attention to the skill of data analysis and its components by holding classes, workshops and specialized workshops. In improving the skills of data analysis to improve the quality of the housing foundation's accounting work, to improve and eliminate negative behaviors while strengthening the positive financial results. to pay One of the application proposals in this field is training accounting department employees on the use of analytical data for forecasting and budget planning. By doing this, employees can determine the budget more accurately using reliable data and improve budget expectations. In addition to training in this field, the use of data analysis software can also significantly improve budgeting and budget expectations. By using this software, employees can quickly and accurately analyze financial data and management sense and improve budget planning. to forgive Considering that budgeting and budget expectations are very important in non-governmental public institutions, training data analysis skills to accounting department employees can. There should be a significant improvement in this field and as a result, it will help to improve the performance and efficiency of the organization. Since the emphasis of this research has been on data analysis skills, it is suggested that the way of collecting and organizing information is also discussed in the next research. According to the fact that the sample of this research was the employees of the accounting department, it is suggested that in the future research among all employees as well as managers and officials. to be done It is also suggested to use the role of psychological components in data analysis in future research. It is suggested that the researchers carry out similar research in other executive institutions affiliated with the government.

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