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Research Article

Qualitative Solutions for Enhancing Accounting Management Via Econometric Model - A Case in Food Processing Industry in Vietnam

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Abstract

Food processing industry in Vietnam has contributed much to GDP growth in general and agriculture sector in specific. Therefore we select LongAn Food Processing exporting company to build qualitative solutions for financial accounting management via an econometric model.

We mainly use combination of quantitative methods (statistics, calculation formulas) and qualitative methods including synthesis, inductive and explanatory methods and dialectical materialism methods.

The research findings tell us that due to negative correlation between administrative expense, sale cost and COGS and accounting net profit of LAF company, it would suggest that management need to control cost better, COGS better and reduce administrative cost to increase net profit.

Besides, this study also give out recommendations for enhancing accounting mangement policies at LongAn food processing exporting company in Vietnam.

Keywords: *Accounting management, solutions, LAF, food processing, vietnam.*

JEL: M21, G30, G32, G38.

Introduction

Food processing and exporting has been becoming one of major industries in Vietnam, starting from as an initial country in agriculture.

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Long An Export Processing Joint Stock Company was formerly known as Long An Export Processing Enterprise - a State-owned enterprise established in 1986 and directly under the People's Committee of Long An Province. July 1, 1995 Long An Export Processing Enterprise was approved by the People's Committee of Long An Province to officially transform its ownership form with a new legal entity up to now: Export Processing Joint Stock Company Long An (LAFOOCO).

Looking at below charts we make some qualitative analysis:

- Although there is small ratio of foreign investors in LAF company, it shows a diversed structure of ownership.
- Ratio of COGS/income increased in year 2018 and reduced in 2019-2020.
- Sale cost decreased but admin costs increased slightly from 2019 to 2020.

We see Ownership Structure of LongAn Food (LAF) as below until 2020:

Shareholders	Share	% Ratio
• Internal staffs	11,860,041	80.53
• Domestic individuals	2,236,880	15.19
• Domestic institutions	280,854	1.91
• Foreign individuals	236,042	1.6
• Foreign institutions	114,202	0.78

(Source: www.mbs.com.vn, access date 3/6/2021)

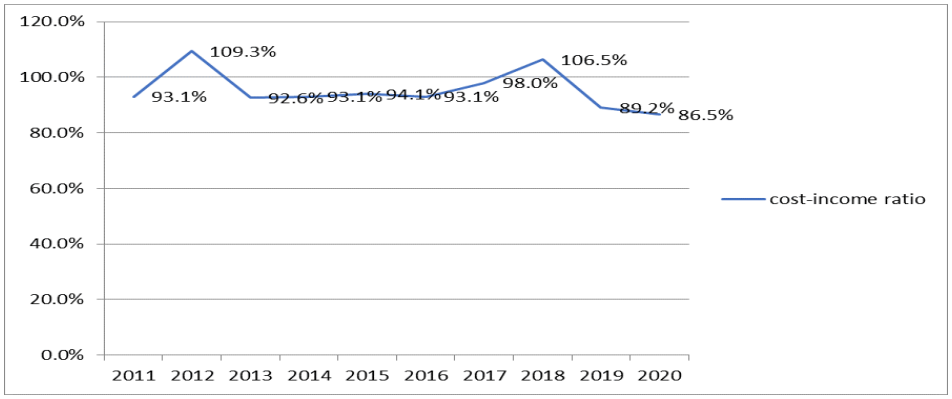

Chart 1. Ratio of Cost/Income

(Source: stock exchange, financial reports and author calculation)

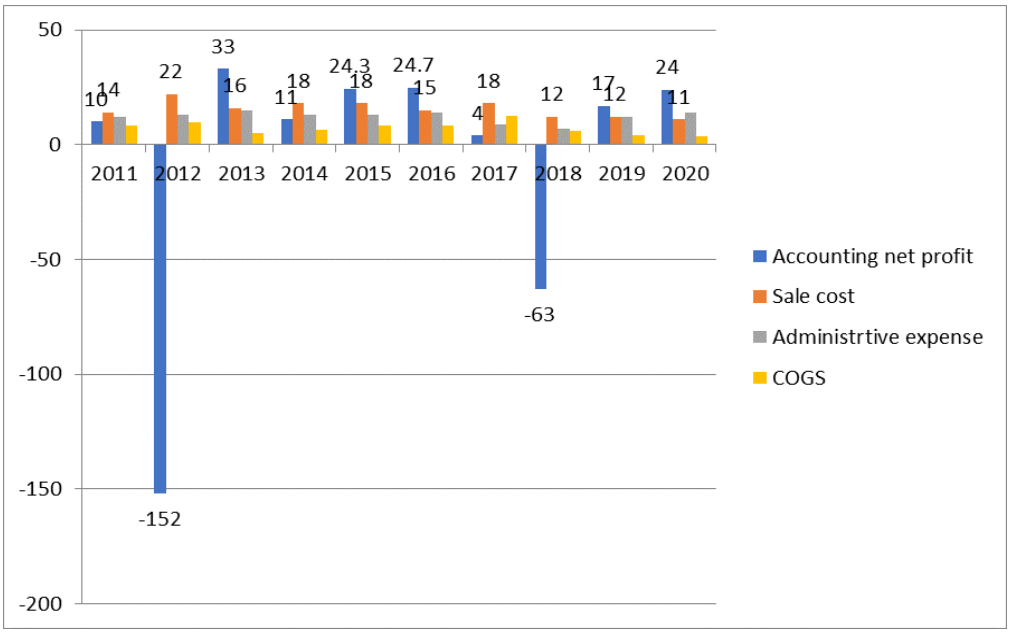

Chart 2. Net Profit, COGS and Sale Cost of LAF

(Source: Stock exchange, financial reports and author calculation)

All internet data such as lending rate, cost and revenue factors we take from reliable internet data sources, esp. from website of company, annual reports from stock exchange, Bureau of Statistics, banks, etc.

We organize our study with introduction, literature review, method, main results, discussion and conclusion.

Research Questions

Question 1: What are effects from cost and revenue factors on accounting profit of LAF?

Question 2: What are qualiattive analysis and solutions for accounting management in lAF?

Literature Review

First, Trivelas and Satouridis (2013) stated that in Greece a) the externally focused Management Information System (MIS) effectiveness archetypes (OS, RM) reflecting innovation, creativity, goal setting and planning enhance task productivity b) the Internal process (IP) model of MIS effectiveness influences negatively task productivity.

Then Haliti et al (2016) stated data with SPSS 21 version, and the hypotheses were tested by means of correlation and linear regression. The findings of the study proved that commercial banks in Kosovo could enlarge their profitability by increasing the level of bank loaning and other investments, except for managing risk and liquidity properly.

Last but not least, Huy, D.T.N et al (2020) measure effects of external factors on bank stock price in case of a big listed bank in Vietnam - Vietcombank which left the direction for further researches on internal factors effects measuring.

Moreover, Gupta (2019) specified that Information system (IS) is important in almost all the functional areas of any bank i.e., HR, Marketing, Finance, etc. It also helps in risk management and cash management along with maintaining long run customer relationship.

And last but not least, Sibanda et al (2020) mentioned digital technology has transformed banking from classical model to innovative Fintech collaborative model.

Methodology

Method and Data

This study mainly use combination of quantitative methods and qualitative methods including synthesis, inductive and explanatory methods.

We derive qualitative analysis and solutions from regression model.

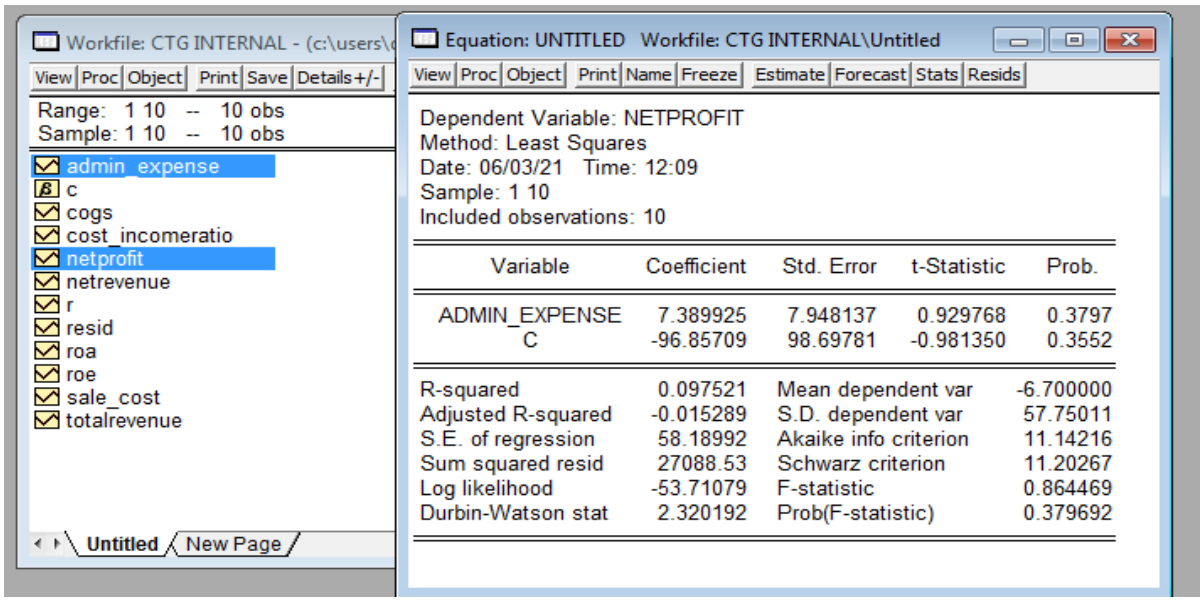

Figure 1. Model of OLS regression

(Source: Stock exchange, financial reports and author calculation)

Data is collected from reliable internet sources and websites.

Looking at descriptive statistics below, we see that:

	NETPROFIT	ADMIN_EX...	COGS	R	SALE_COST
Mean	-6.700000	12.20000	729.5000	0.115260	15.60000
Median	14.00000	13.00000	733.5000	0.100000	15.50000
Maximum	33.00000	15.00000	1278.000	0.190000	22.00000
Minimum	-152.0000	7.000000	353.0000	0.080000	11.00000
Std. Dev.	57.75011	2.440401	281.9445	0.039225	3.470511
Skewness	-1.866298	-1.114003	0.466630	1.138882	0.304625
Kurtosis	5.122863	3.201270	2.505180	2.705184	2.185115
Jarque-Bera	7.682842	2.085218	0.464926	2.197970	0.431343
Probability	0.021463	0.352534	0.792579	0.333209	0.806000
Sum	-67.00000	122.0000	7295.000	1.152600	156.0000
Sum Sq. Dev.	30015.68	53.60000	715434.5	0.013847	108.4000

Figure 2. Descriptive Statistics of Cost Factors

Correlation Matrix					
	NETPROFIT	ADMIN_EX...	COGS	R	SALE_COST
NETPROFIT	1.000000	0.312283	-0.324704	-0.523795	-0.466182
ADMIN_EX...	0.312283	1.000000	-0.327169	0.259635	0.167924
COGS	-0.324704	-0.327169	1.000000	0.318689	0.682116
R	-0.523795	0.259635	0.318689	1.000000	0.491556
SALE_COST	-0.466182	0.167924	0.682116	0.491556	1.000000

Figure 3. Cost Factors Correlation Matrix

	NETPROFIT	COST_INC...	NETREVE...	ROA	ROE	TOTALREV...
Mean	-6.700000	0.955500	753.6000	-0.036400	-0.140000	756.9000
Median	14.00000	0.931000	783.0000	0.056500	0.107000	788.0000
Maximum	33.00000	1.093000	1300.000	0.176000	0.287000	1304.000
Minimum	-152.0000	0.865000	405.0000	-0.647000	-1.877000	408.0000
Std. Dev.	57.75011	0.071957	271.1229	0.248491	0.649725	272.0390
Skewness	-1.866298	0.898144	0.539212	-1.735184	-2.183328	0.533914
Kurtosis	5.122863	2.702121	2.636048	4.747114	6.369568	2.617645
Jarque-Bera	7.682842	1.381410	0.539774	6.289942	12.67570	0.536021
Probability	0.021463	0.501223	0.763466	0.043068	0.001768	0.764900
Sum	-67.00000	9.555000	7536.000	-0.364000	-1.400000	7569.000
Sum Sq. Dev.	30015.68	0.046600	661568.4	0.555730	3.799284	666046.9

Figure 4. Descriptive Statistics of Revenue Factors

	NETPROFIT	COST_INC...	NETREVE...	ROA	ROE	TOTALREV...
NETPROFIT	1.000000	-0.892986	-0.162672	0.996209	0.989890	-0.162359
COST_INC...	-0.892986	1.000000	0.361248	-0.903941	-0.846702	0.359620
NETREVE...	-0.162672	0.361248	1.000000	-0.196643	-0.180951	0.999982
ROA	0.996209	-0.903941	-0.196643	1.000000	0.983122	-0.196367
ROE	0.989890	-0.846702	-0.180951	0.983122	1.000000	-0.181264
TOTALREV...	-0.162359	0.359620	0.999982	-0.196367	-0.181264	1.000000

Figure 5. Revenue Factors Correlation Matrix

(Source: Stock exchange, financial reports and author calculation)

We also find out that:

- Correlation between net profit and ROA and ROE (0.99 and 0.98) is higher than that of between net profit and net revenue (-0.16) (figure 5)
- Correlation between net profit and COGS (-0.3) is higher than that between net profit and sale cost (-0.4) (figure 3).

Main Results

Overall Results

As shown in below figure:

- Between net profit and administrative expenses, sale cost, COGS and cost-income ratio there is negative correlation.
- Between net profit and ROA, ROE there is positive correlation.

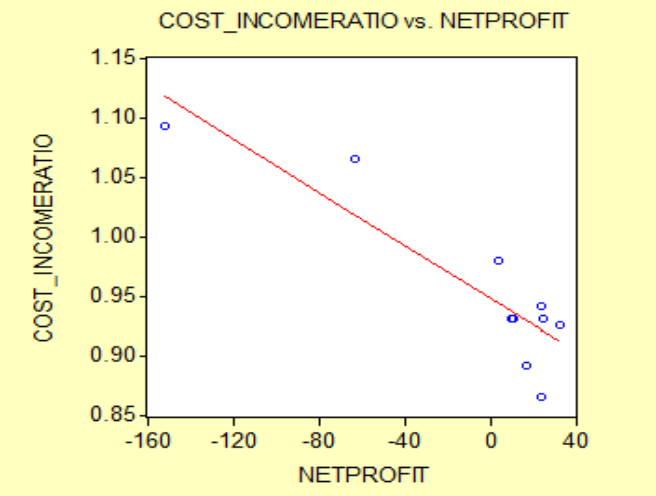

Figure 6. Cost/Income Ratio and Net Profit

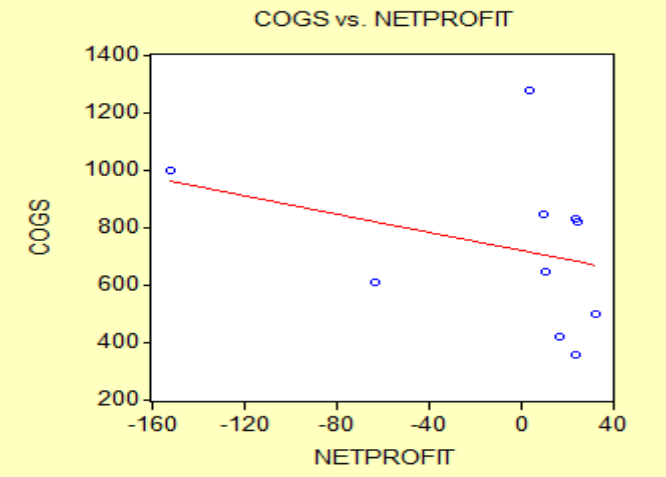

Figure 7. COGS and Net Profit

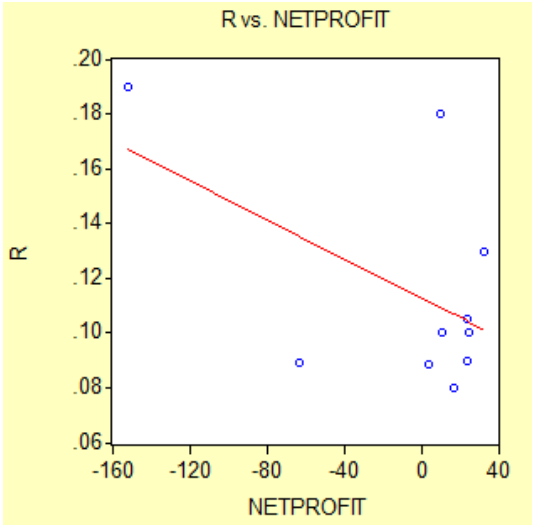

Figure 8. R and Net Profit

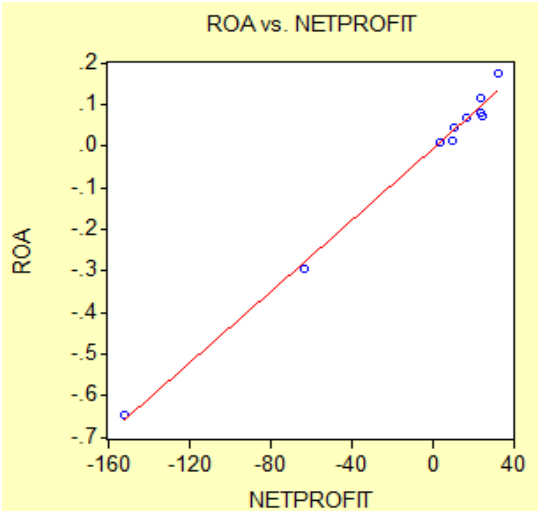

Figure 9. ROA and Net Profit

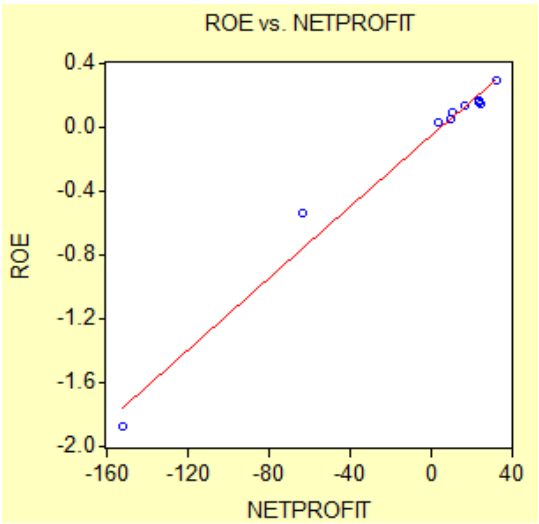

Figure 10. ROE and Net Profit

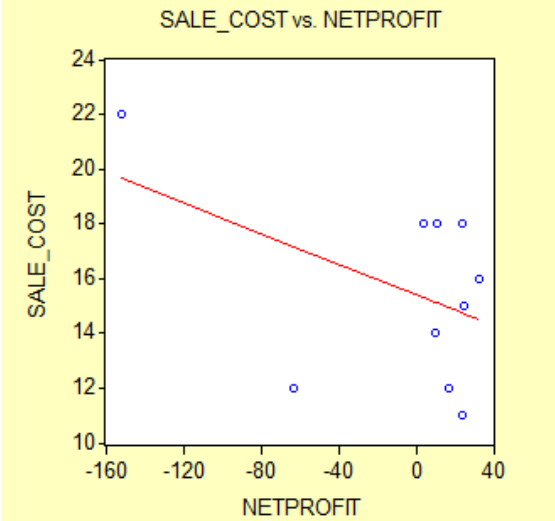

Figure 11. Sale Cost and Net Profit

(Source: Stock exchange, financial reports and author calculation)

OLS Regression Results

Run OLS regression with Eviews gives below results:

- First, because coefficient is of 7.3, there is positive correlation between admin expense and accounting net profit (figure 12) whereas negative correlation b.t COGS, sale cost and net profit (Figure 13 and 14).
- It means that the firm (LAF) need to increase increase admin expense while reduce COGS.

Dependent Variable: NETPROFIT
Method: Least Squares
Date: 06/03/21 Time: 12:09
Sample: 1 10
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ADMIN_EXPENSE	7.389925	7.948137	0.929768	0.3797
C	-96.85709	98.69781	-0.981350	0.3552

R-squared	0.097521	Mean dependent var	-6.700000
Adjusted R-squared	-0.015289	S.D. dependent var	57.75011
S.E. of regression	58.18992	Akaike info criterion	11.14216
Sum squared resid	27088.53	Schwarz criterion	11.20267
Log likelihood	-53.71079	F-statistic	0.864469
Durbin-Watson stat	2.320192	Prob(F-statistic)	0.379692

Figure 12. Regression Results for Single Factor Admin Expense

(Source: stock exchange, financial reports and author calculation)

Dependent Variable: NETPROFIT
Method: Least Squares
Date: 06/03/21 Time: 12:11
Sample: 1 10
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
COGS	-0.066509	0.068494	-0.971017	0.3600
C	41.81798	53.21893	0.785773	0.4546

R-squared	0.105433	Mean dependent var	-6.700000
Adjusted R-squared	-0.006388	S.D. dependent var	57.75011
S.E. of regression	57.93427	Akaike info criterion	11.13335
Sum squared resid	26851.04	Schwarz criterion	11.19387
Log likelihood	-53.66676	F-statistic	0.942874
Durbin-Watson stat	2.386242	Prob(F-statistic)	0.359979

Figure 13. Regression Results for Single Factor COGS

Dependent Variable: NETPROFIT
Method: Least Squares
Date: 06/03/21 Time: 12:11
Sample: 1 10
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SALE_COST	-7.757380	5.204811	-1.490425	0.1744
C	114.3151	82.98369	1.377561	0.2056

R-squared	0.217326	Mean dependent var	-6.700000
Adjusted R-squared	0.119491	S.D. dependent var	57.75011
S.E. of regression	54.19006	Akaike info criterion	10.99973
Sum squared resid	23492.50	Schwarz criterion	11.06025
Log likelihood	-52.99864	F-statistic	2.221366
Durbin-Watson stat	2.094275	Prob(F-statistic)	0.174446

Figure 14. Regression Results for Single Factor Sale Cost

(Source: Stock exchange, financial reports and author calculation)

Next we see regression table with 4-5 factors

- We see, there are negative relationship between net profit and lending rate.

Table 1.

Regression 4-5 Factors Effects on Accounting Profit

	Coefficient	
	4 factors	**5 factors**

Admin expense	**18.5**	**-0.4**
COGS	**0.12**	**-1.1**
R	**-821**	**-260**
Sale cost	**-12.4**	**1.3**
Net revenue		**1.09**
R -squared	**0.68**	**0.96**
Akaike info criterion	**10.6**	**8.6**

(Source: Stock exchange, financial reports and author calculation)

And we see regression table with 6-7 factors:

- We see, there are positive relationship between net profit and admin expense and net revenue.

Table 2.

Regression 6-7 Factors Effects on Accounting Profit

	Coefficient	
	6 factors	**7 factors**
Admin expense	**1.3**	**0.8**
COGS	**-1.2**	**-0.4**
R	**-304**	**-81.7**
Sale cost	**0.7**	**-0.6**
Net revenue	**1.2**	**0.4**
Cost - income ratio	**191**	**144**
ROA		**179**
R -squared	**0.96**	**0.99**
Akaike info criterion	**8.8**	**4.4**

(Source: Stock exchange, financial reports and author calculation)

Next we see regression table with 8 factors:

Table 3.

Regression 8 Factors Effects on Accounting Profit

	Coefficient	
	8 factors	**8 factors**
Admin expense	**-3.9**	**-2.3**
COGS	**-0.05**	**-1.02**
R	**208**	**-160**

Sale cost	**-1**	**-0.9**
Net revenue	**-5.9**	**1**
Cost - income ratio	**146.7**	**462**
ROA	**280**	**433**
Total revenue	**5.9**	
ROE		**-112**
R -squared	**1**	**0.99**
Akaike info criterion	**-1.9**	**4.2**

(Source: Stock exchange, financial reports and author calculation)

Discussion

In cost factors: Admin expense has higher coefficient and negative correlation with net profit, compared to sale cost.

In revenue factors: total revenue and net revenue and ROA, ROE they all have positive correlation with net profit.

Suggestions for a better management information system:

- When LAF company can build system of accounting information and financial data, they can proved better pictures of accounting factors (internal and external) to net profit and then, they can help company management and director to make sound business decision.
- Accounting information system also contribute to support planing and controlling and other functions of management better.

Conclusion

Accounting Management Implications

Because administrative expense, sale cost and COGS all have negative relationship with accounting net profit of LAF company, it would suggest that management need to control cost better, COGS better and reduce administrative cost to increase net profit.

Moreover, cost-income ratio also have positive correlation with net profit, so we suggest that firms need to in crease COGS/income ratio to be in favor of net profit.

Limitation of Research

We can expand our research model for other industries and other markets.

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