The Status of Computerized Accounting Software in Small American Businesses

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ABSTRACT

A telephone survey of 123 companies in the Cincinnati SMSA with 30 or less employees was taken for the purpose of determining the extent of computerization, the level of interest in accounting software, and the type of computerized accounting system selected for use. We were also interested in the method of selection and level of utilization of computerized accounting software. The types of accounting software are classified as the off-the-shelf non-modifiable, off-the-shelf modifiable, and custom designed.

This paper will examine how the companies chose their present system, how their employees were trained on that system, and the extent to which the accounting function of smaller companies is now computerized. The reality of the system vs. expectations and the level of utilization of the system will also be examined. The data will be tabulated so that trends can be identified. The result is that our body of knowledge about accounting software usage of small companies will be increased.

INTRODUCTION

According to a 1986 article in PC Magazine, more than half of the businesses with fewer than 100 employees owned a PC or planned to buy one within the next three years (1). The first software bought by a smaller business was most often an accounting package. A recent survey of Ohio CPAs revealed that 50% of their clients bought their accounting software without first performing an adequate analysis of the business owner's needs (2). This survey also found that nearly 40% of these software packages will remain unused by the purchaser; that they will be set aside after the first attempt to implement them (3).

Little research has been done dealing with how businesses choose their accounting software. Relatively few published reports investigate the small business. Few published reports indicate how small firms orchestrate the change from a manual to a computerized bookkeeping/accounting system. Finding how the small firms attempt to implement this changeover is also of interest. This paper will deal with how small firms are handling the computerization of the accounting area. Our sample consists of companies of 30 or fewer employees located in the Cincinnati SMSA (4). A serial sample with a random starting point was selected from a directory of all but the most recent companies in this geographical area.

BACKGROUND

For a small business, the purchase of a computer and software is a major capital expenditure. Failure to use that system, or ineffective use of that system results in a costly waste of the company's time and resources. An ineffective or unused system can also lead to high levels of frustration among owners, managers, and involved employees.

A small business needs to be informed of the potential advantages as well as the potential pitfalls in choosing an accounting system. The small companies do not have the benefit of a management information systems department, nor do they have a consulting relationship that could lead to the purchase of or design of a system tailored specifically to their needs. Consequently, they often "make do" with off-the-shelf software.

Some smaller size firms have a bookkeeper. The duties of the bookkeeper included invoicing, timecards, and payments to vendors. The bookkeeper usually generated the routine general ledger and general journal entries. The activities of the bookkeeper are usually converted from manual to computer entry. Most often an outside accountant or accounting firm was hired on a periodic basis to deal with the areas of tax including state tax and worker's compensation, inventory costing, fixed asset depreciation, and preparation of income statements and/or balance sheets. The outside accountants had software to help them serve their small business clients, but these outside accountants and their job-related software was not the focus of this study. Twenty-one of 63 (33%) ccompanies report having an in-house accountant, while 62 of 68 (91%) report having an in-house bookkeeper.

For the purpose of this study, the term "accounting software" will apply to all systems that allow computerization of the bookkeeping function. Accounting software packages for small businesses can be purchased for under $30. The lower price range packages are nonmodifiable. At higher prices, modifiable packages are available. Both types offer a large number of features. Choosing software is extremely difficult. Each vendor tries to sell packages he carries. Since most small businessmen are without expertise in this area, the purchaser is, in many ways, at the mercy of the vendor.

Small business owners have difficulty knowing what type of package he needs. One visible attribute that the software has is price. A small businessman may have a dollar figure in mind before buying his software. In fact, two of three vendors interviewed, Baldwin and Donner, stated that price was the most important factor to small businessmen. Parker added that service was another important factor. All three agreed that the availability of training was also a consideration (5).

Accountants who use a software package sometimes make recommendations to their clients or friends about accounting software. No evidence exists that these accounting firms are knowledgeable about a wide variety of packages, nor that they know of good packages matching the software's functions to the small business' needs. Generally speaking, an accounting firm should not be used as a consultant to the small businessperson seeking a software package. Accounting firms need software that is effective in the consolidation of records into balance sheets and income statements. In these functions the compilation process itself is paramount. However, the small business need might be for an accounts receivable module that would handle a certain volume of receivables and/or they might need an inventory module that could effectively handle frequent inventory changes. A manufacturing firm would use many inputs (accounts payable) to generate a relatively small number of finished products (accounts receivable) and would, therefore, want to put emphasis on accounts payable and vendor information portions of a package.

An idea that has merit is to seek information from similar companies that have made a successful implemntation of an accounting software package. If a company is able to receive "network" information of this type, decision making becomes much easier. In fact, studies of small business incubators show that the exchange of information among fledgling companies is the single most important factor in the eventual success of a company. The chance of similar firms exchanging information is unlikely unless the industry has frequent seminars and conferences, so that similar (and noncompetitive) companies can interact.

Unlike spreadsheet and word processing programs, low to moderately priced off-the-shelf accounting packages often have no supporting training classes available. A manual is provided for each software module. An often confusing tutorial is also included. Some vendors offer training on selected packages, either from one of the vendor's employees or from an accountant familiar with their package. The small business' accountant is sometimes familiar with the package. In this case the accountant may assist in the training.

SURVEY METHODS

POPULATION: Our survey sample was selected from companies reported to have 30 or less employees according to a virtually complete directory of companies in the Cincinnati SMSA. Companies with more reported employees were not included in the sample. The sample was chosen by serial selection within this directory. The group included retail, wholesale, manufacturing, and service companies.

METHODOLOGY

Each member of the sample was sent a letter explaining the study, and informing them that they would soon receive a telephone call from a member of the research team. The survey was conducted by telephone with the business owner or with a subordinate delegated by the owner to talk with us. As stated, 101 of 123 companies provided the requested information.

The telephone survey was chosen rather than a mailing because we were seeking to accumulate opinions and ideas as well as "facts." A telephone interview allows the interviewer to motivate the respondent to answer open-ended questions. Rewording can be used if the question is not completely understood by the respondent. Likewise, the respondent can ask the interviewer to clarify a question. Also, we felt certain that a mailed interview form, while reaching a larger sample, would have resulted in a much higher non-response rate.

THE RESULTS

Twenty-two of the firms did not respond. Of the remainder, 23 had no computer, and 23 additional had a computer but did not have computerized accounting software. Among those who had computerized accounting software, 14 had their software custom designed, 10 had off-the-shelf but modifiable, and 14 had purchased off-the-shelf nonmodifiable. The others could not identify the type of accounting software they owned. Of 23 firms without a computer, nine had plans for the acquisition of a computer and accounting software. Fourteen of 23 owners of companies that had a computer but no accounting software said that they had firm plans to implement computerized accounting.

Table 1. Data Tabulation

TYPE OF COMPANY	NUMBER	PERCENT
Retail	8	8%
Wholesale	9	9%
Service	32	32%
Manufacturing	41	41%
Other	10	10%
Unidentified	1	1%
	101	

AVERAGE NUMBER OF OFFICE EMPLOYEES BY CATEGORY

	MEAN	RANGE
ALL COMPANIES	6.2	1-25
COMPANIES WITH ACCOUNTING SOFTWARE	6.4	1-25
COMPANIES WITH COMPUTER	6.2	1-25

AVERAGE NUMBER OF TOTAL EMPLOYEES BY CATEGORY

	MEAN	RANGE
ALL COMPANIES	19.8	3-50
COMPANIES WITH ACCOUNTING SOFTWARE	21.2	4-45
COMPANIES WITH COMPUTER	19.8	3-50

RESPONSE BY COMPUTER/SOFTWARE AVAILABILITY

	Number	Percentage
Companies With Computer	78	78%
Companies With Accounting Software	56	56%
Companies Planning Purchase of Accounting Software	23	23%

RESPONDENTS BY TYPE OF ACCOUNTING SOFTWARE

	Number	Percentage
Custom designed	13	34%
Modifiable	10	26%
Non-modifiable	14	37%
Lotus	*1	3%

*This firm has subsequently been classified as having a computer but not having accounting software.

The five survey forms were for:

- Firms that had no computer
- Firms that did have a computer, but no accounting package.
- Companies that now own an off-the-shelf package of the nonmodifiable variety.
- Firms who are now using an off-the-shelf modifiable type (the third and fourth were similar).
- Companies that owned a customized accounting or an industry specific package.

Table 1 shows the characteristics of the sample. Note that 78 of the 101 companies reported having a computer available. Fifty-six of the 101 companies claim to having an accounting software package. The average size of the companies was 19.8 employees, with an average of 6.3 "office" employees.

Table 2. Functions Performed by Accounting System
(Companies that owned computerized accounting system)

Responding Affirmative	Number Functions	Percent Performed
Accounts Receivable	46	96%
Accounts Payable	46	93%
General Ledger	46	87%
Inventory	46	46%
Fixed Assets	46	32%
Invoicing	46	52%
Payroll	46	33%
Income Statement/Balance Sheet	46	33%
General Tax Information	46	26%
Job Cost	*16	25%
Office Management Function	*16	6%

*Based on preliminary sample of 29 only

Reported Rate of implementation

100% utilization	8	44%
75%-99% utilization	6	33%
50%-74% utilization	3	17%
Under 50% utilization	1	6%

(Mean Percentage Reported Rate of Implementation: 81%) Companies Planning To Purchase Accounting Software

The sample indicated that small companies are equally divided as to which type of accounting software they purchased. Companies with customized software or custom designed software indicated that they had either surveyed the market for off-the-shelf merchandise without finding a suitable package or they felt that no off-the-shelf software program would meet their needs.

Responses to questions on how the change from a manual to a computerized accounting system affected their jobs were too varied to summarize. The respondents most frequently cited increased accuracy and time savings as the most beneficial outcomes of the conversion. Few companies indicated a reduction in personnel due to a new system. No other generalizations can be made at present.

Among the companies that had a computerized accounting system long enough to have an opinion as to its impact, 19% said that the computerized system exceeded their expectations. The largest group, 73%, said it met their expectations. Only 8% indicated disappointment. We did not attempt to measure expectations prior to the purchase of the accounting package. Expectations could have been low prior to the implementation of the computerized accounting. Owners of companies that did not yet have accounting software, but planned to purchase one, did consider the functions they wished performed. These are summarized in Table 3.

Table 3. Functions Desired by Companies Intending to Buy Software

Function	Number	Percent Affirmative
Accounts Receivable	18	93%
Accounts Payable	18	89%
General Ledger	18	82%
Inventory	18	71%
Fixed Assets	18	36%
Invoicing	18	61%
Payroll	18	64%
Income Statement/Balance Sheet	18	50%
General Tax Information	18	39%
Job Cost	*7	14%

*Based upon preliminary sample only. Table 3 strongly suggests that the expectations of companies planning to buy software is not particularly different than those with working systems. No statistical test was used to support or draw inferential conclusions.

Even with a sample of over 100, which lead to 26 responses, little or no pattern can be seen, except that small business persons do not seem to seek out advice from people at similar companies (possible competitors) and that they do seem to be influenced by the actual software vendors. It seems that virtually every avenue of advice is used by at least some of those who made a recent software decision.

Table 4. Methods of Choosing a System

Reason	Number of Respondents	Percent Affirmative
Advice from a friend	26	8%
Advice from MIS consultant	26	19%
Advice from software vendor	26	35%
Advice from person at similar company	26	0%
Advice from accountant	26	15%
Did own research	26	11%

One question that was not included was whether the software was the same as that used by the decision maker's former position. Some managers and owners seem to buy the same software they know or learned about in their previous position. In future samples, this question will be added.

Business owners anticipating a change to computerized systems expect the system to make more information readily available, to decrease workloads, to increase efficiency, to eliminate some tasks, and to improve accuracy. The objectives seem realistic. A good question to ask owners of firms that are computerized would be "What percentage of your expectations or goals were met after computerization?"

Table 5*. Expected Method of Changeover - Manual to Computerized

Method	Number
Training of present employee only	6
Hire pre-trained employee only	1
Combine present and new employee	1
Extra workload	1
Parallel run	3

* This table based on preliminary sample of 29 companies

Although the sample used in Table 5 is small, it suggests that companies with between 20 and 50 employees have expectations that current employees will "retrain" and will be the users of the new accounting system. We assume that the business owner expects to provide some training. Another follow-up question not asked is "How long does it take to have the software "up and running" compared to the projected or budgeted time?"

CONCLUDING COMMENTS

The study is in many ways preliminary in nature. The sample of slightly over 100 firms shows a rate of computerization and a rate of usage of accounting software somewhat higher than suggested in literature, which indicates that companies are still in the process of becoming computerized. We found that many firms want accounts receivable, accounts payable, and general ledger packages or features; after that the results are a bit variable. Companies that do not yet have computers or companies that have computers but do not yet have accounting software plan to have packages in a similar profile to those companies that have accounting software. In terms of number of employees and in terms of number of office employees, the companies with and without computers match up very well. More research is planned along the line of type of business vs. level of computerization.

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Management Policy in Franchising Operations: A Preliminary Study

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ABSTRACT

During the past few decades franchising has emerged as one of the fastest growing methods of doing business in the world. This article investigates the concept of climate in franchising stores and how that relates to the stores' performance. Work context, participation and workgroup were identified as important climate factors influencing store performance. Proper management of the work climate should enhance franchise store performance.

INTRODUCTION

For years, the relationship between organizational climate and human behavior has been one of the focal areas of management research because human behavior has a strong effect on organizational performance. Glick indicated that the study of organizational climate and its impact on motivation and leadership would influence the development of management theory in the future (4). Obviously, organizational climate is a useful managerial tool to diagnose employees' perceptions of the work environment and its relationship with other organizational variables. However, past research on climate has mainly taken place in large business or public organizations. The concept of climate has rarely been applied in small-scaled business operations.

The major objective of this paper is to explore the concept of climate and its relationship with performance in small-scaled franchising stores. Also, the implications of this relationship for management policy are discussed.

BACKGROUND

The importance of perception of the work environment to organizational behavior and performance has been emphasized in past decades. Generally, the perception of the work environment is referred to as the climate of the work setting. Organizational climate is a global concept. It embraces almost all organizational variables and characteristics of both physical and non-physical nature. Litwin and Stringer defined organizational climate as a set of measurable properties of the work environment, perceived directly or indirectly by the people who work in this environment (10). The perceived situation is considered of greater effect than what is objectively the case (1).

Climate is significantly related to many organizational variables, including motivation (10), communication (11), job satisfaction (7; 9; 14), client satisfaction (13), and performance (6; 7; 14). Also, Dastmalchian suggested that the design of appropriate climate and structure in response to environmental pressures may be considered as complementary strategies in management (2). There are three different levels identified in the measurement of organizational climate. They are based on different units of analysis, namely, individual, group or subunit, and organization. However, it is clear that the construct of climate measurement is intrinsically psychological, i.e., on an individual level (6). Other levels of analysis are merely aggregations of individual scores. Subunit climate is the aggregate result of individuals' climate perceptions within the subunit. Similarly, organizational climate is deemed as the aggregate results of individuals' climate perceptions within the organization. Subunit climate allows researchers to look into the management issues at subunit level while organizational climate is investigated if organizational attributes are of interest (3). That means, the level of aggregation depends on the nature of research.

Aggregate climate is more appropriate than organizational climate in organizational research because multiple climates exist in an organization (3, 15). In other words, people working in different divisions of an organization may experience different climates. This would be due to different settings and/or different perceptions. Therefore, the more divisions an organization has, the more diverse subunit climates may be.

HYPOTHESES

The subjects of this study were outlets of a franchising chain. In general, franchising operations are characterized by a large number of outlets which are operated by different franchisees or store managers. There are, however, centralized policies, standardized training and consistent product quality control. Because there is no past research addressing climate measured at store level, we suggest a proposition:

Multiple climates exist at the store level, i.e., individual stores are not of the same climate.

From the previous discussion on climate, if multiple store climates exist, we hypothesize:

There is a significant relationship between store climates and performance.

Usually, franchisors emphasize franchisee-employee and employee-customer relationships because such relationships are crucial to the success of the business. Justis and Judd highlighted that employees' attitudes are very important to customer satisfaction and the perceived quality of the business (8). Also, they indicated that "from the employee's perspective, the franchisee-employee relationship revolves around sufficient training, pay, and incentives." This encourages us to formulate our second and last hypothesis:

The climate factor concerning rewards and organizational characteristics has more impact on store performance than other climate factors.

METHOD

Sample

Data for this study were collected within outlets or stores of a national fast-food franchising chain. The corporate headquarters classified sales performance of stores into three categories—high, medium and low. Twenty stores of each performance category, i.e., a total of sixty stores, were selected. For each store, ten employees were invited to participate in the

study. Only stores from which more than 4 valid responses were received were included in the analysis. Therefore, the final sample was made up of 270 respondents from 52 stores of which 19 were rated high, 16 medium, and 17 low in performance, respectively.

Measurement of Climate

Major instruments used in past research on organizational climate were reviewed. Litwin and Stringer proposed nine a priori climate scales, namely, structure, responsibiility, reward, risk, warmth, support, standard, conflict and identity (10). Jones and James developed a psychological climate questionnaire consisting of thirty-five a priori composites which could be grouped into four categories, namely, job and role characteristics, characteristics of leadership, workgroup characteristics, and subsystem and organizational characteristics (6). Joyce and Slocum found that there were six climate dimensions by factor analysis (7). These dimensions were rewards, autonomy, motivation to achieve, management insensitivity, closeness of supervision, and peer relations.

After reviewing the aforementioned measures and considering the sample for this study, which was made up of employees in the fast-food industry with limited work space and spare time, a simplified climate questionnaire was designed. There were 16 items, describing the following work environment related variables: structure, rewards, peer relations, decision making, commitment, responsibility, expression of opinion, grievance handling, support, delegation, participation, innovation, work environment, standard, rules and communication hindrance. The detail of each item is shown in Appendix 1. Responses were measured by 7-point Likert scales. Factor analysis with varimax rotation was used and four factors were derived. The explained variance was 52.2%. The score of each climate factor was then calculated by taking the mean of the scores of items comprising the factor. The internal consistency reliability of each factor was estimated by coefficient alpha. The factor structure and the reliabilities of respective factors are shown in Table 1.

The four derived factors are: (1) Work context (5 items): the way in which respondents perceive the structure, the reward system, the work environment, and the expected standard of performance of the organization; (2) Workgroup (4 items): the way in which respondents perceive the attitudes of coworkers; (3) Participation (4 items): the way in which respondents perceive the attitudes of the organization toward their opinion; and (4) Autonomy (3 items): the way in which respondents perceive the opportunity to work independently and the possible problems encountered when working independently.

All factors are of acceptable reliability except the last one. The coefficient alpha of autonomy was only .21. It is too low even for an explored factor (12).

Table 1. Factor Structure of Climate

(Only factor loadings above .40 are shown below)

	Factor 1	Factor 2	Factor 3	Factor 4
Structure		.75		
Rewards	.78			
Peer relations		.59		
Decision making	.46			
Commitment		.81		
Responsibility		.73		
Expression of opinion			.49	
Grievance handling			.78	
Support		.68		
Delegation				.42
Participation	.42		.44	
Innovation			.59	
Work environment	.57	.44		
Standard	.64			
Rules				.57
Communication hindrance				.70
Eigenvalue	4.75	1.28	1.20	1.12
Variance (%)	29.7	8.0	7.5	7.0
Coeff. alpha	.70	.75	.59	.21

RESULTS

Formation of Store Climates

Store climate factors were determined using multivariate and univariate analyses of variance. These analyses help assess the power of differentiation of climates between stores. Only factors of significant differences among stores will be considered for further analysis. These results are shown in Table 2.

Table 2. Verification of Store Climate Factors

Climate Factor	d.f.	F	p
Multivariate:	204,1234	1.747	.000
Univariate:	51,313		
Work context		2.670	.000
Workgroup		2.705	.000
Participation		1.579	.011
Autonomy		1.399	.046

According to the levels of significance found in the analyses of variance, all factors are acceptable for cross-store analysis. This supports our proposition that multiple climates exist at store level. In other words, stores are operated under different climates. However, the factor "autonomy" was dropped from further analysis because of the low reliability (.21).

. Pearson correlation and multiple regression were used to test the hypotheses in the study. The Pearson correlations between store performance and climate factors are shown in Table 3.

Table 3. Pearson Correlations Between Store Performance and Climate Factors

	1	2	3
1. Work context			
2. Workgroup	.68**		
3. Participation	.58**	.45**	
4. Store performance	.30*	.13	.24*

* $p < .05$; ** $p < .01$

There was no evidence to reject the first hypothesis that there is a significant relationship between store climates and performance. Two climate factors were found to be significantly correlated with performance. These two factors are work context and participation. There was no significant correlation between performance and workgroup. This indicates that store performance is associated with how the corporation designs the organization and how management deals with employees' opinions. On the other hand, the attitudes of coworkers do not affect store performance.

In the multiple regression analysis, store performance was taken as the dependent variable and three climate factors as independent variables. The result of the analysis is shown in Table 4.

The result shows that only work context is significant in the regression model. The other two factors, which seem to be more human oriented, were not found significant here. Work context concerns the structure and the reward system of the organization. It is obvious that the second hypothesis cannot be rejected. Climate factor concerning rewards and organizational characteristics, i.e., work context in this study, have more impact on store performance than other climate factors.

Table 4. Multiple Regression of Climate Factors on Store Performance

	Beta
Dependent variable: Store performance	
Independent variable:	
Work context	.303 ($p < .05$)
Workgroup	-.138 (n.s.)
Participation	.098 (n.s.)
R-square = .092	
F = 5.06 ($p < .05$)	

DISCUSSION

This study shows that the concept of climate can be applied to the store level, i.e. the frontier business line, of the franchising operations. Three reliable climate factors were identified. These factors are work context, workgroup and participation. Work context and participation were found correlated with store performance. Moreover, work context was considered to have greater impact on store performance than the other climate factors.

It is understandable that workgroup was not correlated to store performance because franchising operations rely more on process and product quality control than labor. Therefore, peer relations and committed workforce have less impact than structure and system on store performance in this study.

It is suggested that the management of franchising operations establish a clear structure and a fair reward system in the franchise system. But more important is giving employees in the stores a clear explanation of the management practices in the system because employees' perceptions and reactions are very crucial to the success of the business. Franchisees or managers of stores should assume their roles as information conveyors. Failure to convey the information from the system to employees biases employees' perceptions of their work environment. The result can be disastrous. Therefore, franchisees or store managers are not only required to be good quality controllers, but also good coworkers who share information with employees promptly and correctly, and who are willing to accept employees' participation in store management.

The simplified instrument used in this study restricted the involvement of other organizational or psychological variables in the analysis. In future study, consideration of other variables in climate-performance relationship would generate more insights into store management. Also, replication of the present study in other franchising operations for generalization of results is encouraged.

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APPENDIX 1

DESCRIPTION OF CLIMATE ITEMS

1. Structure: The organizational structure is clear and the job is well defined.

2. Rewards: My organization emphasizes capability and performance, and has a fair reward and promotion system.

3. Peer relations: Relationship between people inside my organization is good and the working atmosphere is harmonious.

4. Decision making: My organization prefers making decisions smoothly and quickly to having too many different opinions.

5. Commitment: Employees are loyal to the company, have a sense of belonging and are willing to strive for the organization's objectives.

6. Responsibility: People working inside my organization have a sense of responsibility at their work.

7. Expression of opinion: My organization emphasizes personal feelings and encourages expression of opinion.

8. Grievance handling: Grievances are handled in an unbiased manner by the management.

9. Support: Employees are well developed in their jobs and receive trust and support in their work.

10. Delegation: My organization has a clear delegation and encourages employees to work independently.

11. Participation: Employees are given an opportunity to participate in decisions that affect them.

12. Innovation: My organization is aggressive and willing to take a risk with new ideas.

13. Work environment: The working environment is good and comfortable.

14. Standard: My organization demands a high standard of performance.

15. Rules: There are many regulations and rules, even red-tape, in carrying out a task.

16. Communication hindrance: Communication between superior and subordinates is not encouraged.