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LEVEL OF USE OF ELECTRONIC COMMUNICATIONS
BY
ADMINISTRATIVE OFFICE PROFESSIONALS

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the
Degree Doctor of Philosophy in the Graduate School
of The Ohio State University

By
Bonnie Lee Esson Katona, B.S., M.A.

*****

The Ohio State University
1999

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ABSTRACT

The purpose of the study was to describe the level of use of electronic communications by administrative office professionals and to investigate the relationships between the level of use of electronic communications and selected environmental and personal factors.

The researcher used a descriptive-correlational research design. A questionnaire was developed and mailed to Ohio members of the International Association of Administrative Professionals (n=312) during October and November 1998. Validity and reliability of the instrument were established.

Descriptive research methods were used to describe the environmental and personal factors associated with an administrative office professional's decision to use electronic communications. Correlations were used to reveal the relationships between selected environmental and personal factors and electronic communications use. Multiple regression was used to reveal which selected factors determined the unique variance of electronic communications use.

Ninety percent of the administrative office professionals use electronic communications at work. Most administrative office professionals have access to e-mail, an intranet, and the World Wide Web. Administrative office professionals have a positive perception of participative management and many job responsibilities.
Statistically significant, low associations exist for the level of use of electronic communications and perceived level of participative management, level of electronic communications training, level of proximity to electronic communications, level of formal education, CPS® rating, number of family members using electronic communications at home, and level of family use at home. Data revealed a statistically significant, moderate association exists for level of use of electronic communications and perceived level of job responsibility and perceived level of relative advantage. A statistically significant, substantial association exists for level of use of electronic communications and perceived level of access to electronic communications.

Selected factors explaining the unique variance in electronic communications use were perceived level of access, perceived level of job responsibility, perceived level of relative advantage, and number of employees in organization.

Administrative office professionals are routinely using electronic communications to carry out their job duties and have perceived a relative advantage for using electronic communications at work. However, administrative office professionals are not fully utilizing the resources that electronic communications offers because they may lack the knowledge and skill to use a wider range of electronic communications components. The administrative office professionals who perceive themselves as having access to a greater number of electronic communications components are the administrative office professionals who use the wider range of electronic communications services.

Formal training of administrative office professionals in the use of electronic communications is the key to success in raising level of electronic communications use. Current administrative office professionals need more formal training, both inside and
outside the organization, on the use of electronic communications. Organizations should offer tuition reimbursement for administrative office professionals who pursue formal training about electronic communications outside the organization. The International Association of Administrative Professionals needs to help its members develop proficiency in electronic communications use through meeting programs, workshops, and articles in its publications. Secondary and postsecondary schools need to provide electronic communications training to prepare future administrative office professionals.
Dedicated to the memory of Andrew F. Moran,
my business education teacher at
James Ford Rhodes High School,
Cleveland, Ohio
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CHAPTER 1

INTRODUCTION

Introduction to Diffusion and Adoption Theory

An innovation can be defined as "an idea, practice, or object that is perceived as new by an individual or other unit of adoption" (Rogers, 1995). Diffusion is defined as "the process by which an innovation is communicated through certain channels over time among the members of a social system" (Rogers, 1995).

Electronic communications, an interactive system for sending and receiving messages and information from one user to another via networked computers, is one of many innovations to which administrative office professionals have been exposed during the 20th century. The diffusion of the Internet from military and academic settings expanded into the mainstream in the early 1990s (LaQuey & Ryer, 1993), and electronic communications has reached the critical mass needed for its adoption. Critical mass occurs when enough users have adopted an innovation, such as electronic communications, so that its further rate of adoption is self-sustaining (Rogers, 1995). A number of environmental and personal characteristics may contribute to the diffusion process to establish the communication channels within a social system. The interactive
and interdependent nature of electronic communications requires that a critical mass be reached in order for the innovation to be beneficial to adopters.

Electronic communications may be used at home by anyone with access to a computer, modem, telecommunications software, and either an Internet Service Provider (ISP) or an electronic bulletin board system (BBS). At work, an employee may communicate with others electronically by means of a networked computer system, wiring, and an electronic communications system. If the electronic communications system works internally only within the organization, it is called an intranet. When employees may communicate inside or outside the organization, an Internet connection has been established. Individuals may use electronic communications at home because of their experiences at work, or they may use electronic communications at work (if available) because of their experiences at home.

Internet connections allow the individual to communicate with others globally through e-mail, chat rooms, bulletin boards, and newsgroups. The individual may use the Internet to locate information via the World Wide Web and Telnet and may transfer files between computers using file transfer protocol (FTP). Where intranets have been established, employees may communicate with others in the organization via e-mail and/or may locate information by accessing the organization’s files.

Start-up costs for establishing electronic communications may also affect the critical mass needed for adoption. Advertising from stores selling new personal computers show personal computers that are bundled with modems and software to establish an account with an ISP (OfficeMax Advertisement, 1998; Circuit City Advertisement, 1998). However, there are monthly charges for establishing and
maintaining an account with an ISP. In business settings, the workstations, computer wiring, and a hookup to access electronic communications are provided. The organization's decision-makers, rather than selected individuals, examine advantages to the organization to justify the expense of connecting the entire office to an electronic communications system.

**Problem Statement**

Administrative office professionals use oral and written communication skills to perform their daily job duties. In addition, administrative office professionals often must locate information from a variety of printed materials and other resources to complete their tasks (Ettema, 1984).

Electronic communications may provide alternative sources of information and communication for administrative office professionals to seek information to perform some of their job duties. Examples of these alternatives include using e-mail for communication, searching the World Wide Web for information, and accessing internal organization files that have been made available online for data retrieval.

Figure 1 displays the evolution of four innovations that have impacted business education; namely, computers, typewriters, dictation, and facsimiles-copiers. Typewriters, dictation, and facsimiles-copiers have experienced a long, slow, earlier development process dating back to the 1830s (Smith, 1989; Schmidt & Jennings, 1990). In contrast, the first computer was introduced in 1944 and has undergone numerous changes since its birth. The introduction of the smaller microcomputer in 1977 began the
Figure 1: History of Selected Innovations Affecting Office-Support Occupations
shift from typewriters to computers, and by 1989 virtually every business office was using microcomputers (Smith, 1989; Schmidt & Jennings, 1990).

There is a relationship between business education programs and administrative office professionals through mandated state technical committees and program advisory committees, whose industry members represent local business offices. The purpose of the technical committees is to prepare task lists and inventories of skills needed for employment in office-support positions (Carl D. Perkins Vocational Education Act of 1984). The program advisory committees make recommendations for curriculum textbooks, software, and other learning resources and equipment (Carl D. Perkins Vocational and Applied Technology Education Act Amendments of 1990).

In 1992, Ohio's Competency Analysis Profile (OCAP) for Administrative/Secretarial Services was developed for the Ohio Department of Education, Division of Vocational and Career Education under the direction of the Vocational Instructional Materials Laboratory at The Ohio State University's Center on Education and Training for Employment. The OCAP for Administrative/Secretarial Services was adapted from the PSI Office Occupations Model Curriculum for Secondary Business Education and recognized by Professional Secretaries International (Ohio's Competency Analysis Profile: Administrative/Secretarial Services, 1992). Occupational, academic, and employability skills necessary for entry into the administrative/secretarial services field are identified, along with corresponding units, competencies, and competency builders. Employer panels consisting of members of business communities throughout the state of Ohio verified the content of the OCAP. Business education instructors were directed to use the OCAP lists to develop their vocational courses of
study and to include "futuring" items (knowledge, skills, and attitudes) needed to remain in the administrative/secretarial services field three to four years later (Ohio's Competency Analysis Profile: Administrative/Secretarial Services, 1992). Some of the competencies listed in the OCAP for Administrative/Secretarial Services related to this study are:

- Competency 2.0.7: Apply Telecommunications Functions
- Competency 5.0.8: Research Information
- Competency 7.7.1: Assess the Impact of Technology in the Workplace
- Competency 7.7.2: Use a Variety of Technological Applications (Ohio’s Competency Analysis Profile: Administrative/Secretarial Services, 1992)

Current technology in the area of electronic communications would expand the competency builders listed under the specific competencies above, which may warrant revisions to the OCAP for Administrative/Secretarial Services. Empirical evidence is lacking to validate the currency or correctness of the competency builders in the OCAP for Administrative/Secretarial Services.

Documentation is needed to provide business educators throughout Ohio with some insights as to how electronic communications are used in business offices. Therefore, an outcome of this study was to assist business educators in Ohio in deciding whether skills and knowledge related to electronic communications should be introduced within their curriculum.

This study sought to identify environmental and personal characteristics related to the level of use of electronic communications by administrative office professionals and investigated determining at what level administrative office professionals are using
electronic communications to perform their job duties. In addition, this study sought to
determine differences, if any, in the environmental and personal characteristics associated
with use of electronic communications by administrative office professionals.

**Delimitations of the Study**

The following were the delimitations for the study:

1. The study included only members of the International Association of
   Administrative Professionals (IAAP), formerly Professional Secretaries
   International (PSI), from the state of Ohio who were employed in office-
   support positions.

**Limitations of the Study**

The following were the limitations for the study:

1. The findings of the study were limited in terms of the honesty of the
   participants' responses to the items on the questionnaire.
2. The findings of the study were limited to the knowledge and perceptions of
   the participants.
3. The findings and generalizations were limited to the members of the IAAP
   from the state of Ohio currently employed in office-support positions at the
time of data collection. Therefore, the results may not reflect the level of use
of electronic communications by all administrative office professionals in
Ohio.
Research Questions/Hypotheses

It was hypothesized that several environmental and personal characteristics influence the use of electronic communications by administrative office professionals. Environmental characteristics that may influence an administrative office professional’s use of electronic communications on the job include the number of employees in the organization, perceived level of participative management, level of job responsibility, level of electronic communications training, perceived level of access to electronic communications, and perceived level of relative advantage of using electronic communications. Personal characteristics that may influence an administrative office professional’s use of electronic communications on the job include the individual’s age, level of formal education, CPS® rating, number of household members using electronic communications at home, and level of household use of electronic communications at home.

The research questions and hypotheses addressing environmental characteristics are numbered with a prefix of “E-”, while research questions and hypotheses addressing personal concerns are numbered with a prefix of “P-”.

Environmental Characteristics

The following research questions and hypotheses were analyzed:

**Research Question E-1:** What is the relationship between number of employees in an organization and level of electronic communications use for administrative office professionals?
Hypothesis E-1: A positive relationship exists between number of employees in an organization and level of electronic communications use.

Organization size is positively related to innovativeness (Rogers, 1995). Rogers (1995) states that earlier adopters (e.g., companies) have larger units than later adopters. An organization's size may be defined by various measures, such as number of full-time equivalent employees (Pungitore, 1989). Since size is an easily measured, precise variable, it is one of the best predictors of organizational innovativeness (Rogers, 1995).

Research Question E-2: What is the relationship between perceived level of access to electronic communications by administrative office professionals and level of electronic communications use?

Hypothesis E-2: A positive relationship exists for administrative office professionals who have greater access to electronic communications and level of electronic communications use.

Technology is comprised of a hardware and software component. The physical aspects of the technology are housed in the hardware, and the information base is contained in the software (Rogers, 1995). Electronic communications are established by linking hardware components, including computers and networks, and using telecommunications software to operate the computers (Joseph, 1995). Access to electronic communications includes e-mail, FTP, telnet, and the World Wide Web (Joseph, 1995). Administrative office workers tend to use a variety of resources to locate information and communicate with others; therefore, level of use may increase for individuals who have more components of electronic communications available.
Research Question E-3: What is the relationship between the perceived level of participative management and level of use of electronic communications for administrative office professionals?

Hypothesis E-3: A positive relationship exists between administrative office professionals with a higher perceived level of participative management and level of electronic communications use.

If the power in an organization rests with just a few individuals in a centralized organization, there tends to be less innovation because organization leaders often do not understand problems at the operation level well enough to suggest innovative solutions to meet their needs (Rogers, 1995). In a decentralized organization with a participative approach to management, lower-level employees gain control over their work by participation in problem-solving, change, goal setting, and decision making to complete their tasks (Griffin, 1990). The result of the participative management approach is enhanced motivation, commitment, satisfaction, performance, and productivity, with innovation an important outgrowth (Griffin, 1990). If administrative office professionals are working in organizations where there is a participative management style allowing for autonomy and creativity in performing job tasks, electronic communications may tend to be used to a greater extent than for those individuals working in a more centralized organization.
**Research Question E-4:** What is the relationship between number of job responsibilities for administrative office professionals and level of electronic communications use?

**Hypothesis E-4:** A positive relationship exists between number of job responsibilities and level of electronic communications use.

Internal organization structure characteristics, including structure and technical knowledge of staff, affect an organization’s innovativeness. Complex organizations employ individuals with a broad range of occupations and technical expertise, who are likely to conceive and propose new ideas (Rogers, 1995). Administrative office professionals have undertaken expanded responsibilities, with technology playing a key role. As a result, job titles are changing to reflect the growing duties of administrative office professionals (*Benchmarking the Profession: 1997 PSI Membership Profile, Professional Secretaries International®—The Association for Office Professionals™*). If administrative office professionals have a wide variety of job responsibilities, it is likely these individuals will avail themselves of electronic communications technology to perform their job duties than office workers who have a more narrow range of job responsibilities.

**Research Question E-5:** What is the relationship between level of electronic communications training for administrative office professionals and level of electronic communications use?

**Hypothesis E-5:** A positive relationship exists between level of electronic communications training and level of electronic communications use.
Complexity is the degree of difficulty perceived by the user of an innovation. An innovation's complexity is negatively related to its rate of adoption (Rogers, 1995). Trialability involves experimentation with an innovation on a limited basis. Ideas that can be divided for trial or phased in via installments are more likely to be adopted (Rogers, 1995). Since electronic communications is a complex technology, administrative office professionals may tend to use the technology to a greater or lesser extent based upon the amount and type of training received in its use.

**Research Question E-6:** What is the relationship between level of proximity of the administrative office professional to electronic communications and level of electronic communications use?

**Hypothesis E-6:** A positive relationship exists between administrative office workers who have closer proximity to electronic communications and level of electronic communications use.

Relative advantage takes into consideration such issues as savings in time and effort and is positively related to adoption (Rogers, 1995). If electronic communications are available at the administrative office professional's own workstation, there may be a greater tendency to use the technology than if the individual must travel to an inconvenient location.

**Research Question E-7:** What is the relationship between perceived relative advantage of using electronic communications and level of electronic communications use by administrative office professionals?
Hypothesis E-7: A positive relationship exists for administrative office professionals with more positive perceptions of the relative advantage of using electronic communications and level of electronic communications use.

Relative advantage is the degree to which a new innovation is better than an existing practice and is one of the best predictors of rate of adoption. Relevant areas of interest include economic profitability, savings in time and effort, and benefits associated with the innovation. There is a positive relationship between adoption and relative advantage (Rogers, 1995). Since administrative office professionals spend a portion of their workday locating information and communicating with others, there may be a greater tendency to use electronic communications if there is a perception that the technology will reduce the time, effort, and costs associated with performing related tasks.

Personal Characteristics

The following research questions and hypotheses were analyzed:

Research Question P-1: What is the relationship between the age of the administrative office professional and level of use of electronic communications?

Hypothesis P-1: A negative relationship exists between age of the administrative office professional and level of electronic communications use on the job.
Rogers (1995) states that there is no difference between earlier adopters and later adopters with regard to age. However, Mitchell (1994) reports that “techthusiasts” tend to be younger, with a median age of 38 years. The microcomputer was invented in 1977 (Schmidt & Jennings, 1990) and plays a large role in technology adoption. Younger administrative office professionals may have learned to use computer technology as part of their formal education and be more receptive to learning electronic communications, which may increase the level of use of electronic communications by younger workers.

**Research Question P-2:** What is the relationship between level of formal education of administrative office professionals and level of electronic communications use?

**Hypothesis P-2:** A positive relationship exists between level of the administrative office professional’s formal education and level of electronic communications use on the job.

Rogers (1995) states that early adopters have more years of formal education than late adopters. Mitchell (1994) states that “techthusiasts” tend to be better educated with more than 14 years of school. Technology education is an important component of formal education as it prepares high school and postsecondary students for employment (Kerka, 1994). In order to keep current with changes in office trends and technology, some administrative office workers will pursue additional formal education, making the individuals more venturesome and willing to work with new technology.
Research Question P-3: What is the relationship between holding the CPS® rating and the administrative office professional’s level of electronic communications use?

Hypothesis P-3: A positive relationship exists between administrative office professionals who hold the CPS® rating and level of electronic communications use on the job.

Rogers (1995) states that early adopters are more likely to be literate and have higher aspirations than are late adopters. Administrative office professionals holding the CPS® rating have passed a rigorous three-part examination to earn their rating (IAAP World Wide Web site, 1998). Since demonstrating knowledge of office technology is included in the CPS® examination, administrative office professionals who hold the CPS® rating may use electronic communications to a greater extent than individuals who do not hold the CPS® rating.

Research Question P-4: What is the relationship between number of household members in the administrative office professional’s household using electronic communications at home and level of electronic communications use at work?

Hypothesis P-4: A positive relationship exists between number of household members using electronic communications at home and level of use of electronic communications by administrative office professionals on the job.
In 1994, an industry survey found that 44% of the home computer market were found to be households where married couples with children under the age of 18 lived (Crispell, 1994). If more household members are using electronic communications at home, administrative office professionals may use electronic communications to a greater extent at work because the additional household members may introduce or expose the administrative office professional to new resources or different techniques for using electronic communications.

**Research Question P-5:** What is the relationship between level of household use of electronic communications at home and level of use of electronic communications by administrative office professionals?

**Hypothesis P-5:** A positive relationship exists between level of the administrative office professional’s household use at home and level of use on the job.

Rogers (1995) states that early adopters are more highly interconnected through interpersonal networks in their social system than late adopters. An administrative office professional may establish interconnectedness through interpersonal networks at home as well as at work. Therefore, an administrative office professional may use electronic communications at work to a greater extent if the individual’s household members spend a greater amount of time establishing interpersonal networks online at home.

The environmental and personal characteristics associated with level of use of electronic communications by administrative office professionals are identified in Figure 2.
Figure 2: Characteristics Associated with Use of Electronic Communications
By Administrative Office Professionals
Need for the Study

The business office environment has been impacted by rapid changes in technology since the introduction of the microcomputer in 1977. In order to prepare future administrative office professionals for employment, business teachers need to give their students a competitive advantage by training them for employment in a technology-rich working environment. Business teachers and students need to raise their awareness levels to understand the technology trends currently used in business offices to keep pace with demands for workers with requisite skills.

The results of this study may be of interest to educators, corporate trainers, and others involved in preparing students or retraining administrative office professionals to use technology needed for employment in business offices. The study identified the electronic communications components used by administrative office professionals and the level and types of training associated with electronic communications use.

Instructors and trainers may use the information about electronic components used in business offices to plan their curriculum. Secondary business teachers may use the information to revise their OCAPs to introduce electronic communications terminology and procedures. Corporate trainers may use the information to explore which types of training to implement. Such training may include formal introduction of electronic communications terminology and procedures, subdividing structured training sessions into separate components in a hands-on setting, presenting all electronic communications components together as a whole in a hands-on setting, and/or providing a technical support person to offer assistance on an “as-needed” basis.
Retraining business teachers based on the technological demands for the future is needed. In 1990, the South Carolina Council on Vocational Technical Education reported the necessity for young people to become proficient in the use of computers as preparation for jobs in a high-technology economy (South Carolina Council on Vocational Technical Education, 1990). For students to become comfortable and proficient with computers, the instructors who are preparing them for jobs in business and industry where computers are used should be knowledgeable and proficient in the use of computer operations and related application software (South Carolina Council on Vocational Technical Education, 1990).

Effective computer instruction should be more than teaching isolated skills (Eisenberg & Johnson, 1996). In business education students may learn skills such as computer applications (word processing, spreadsheets, databases, telecommunications, etc.), locating information, problem-solving, and oral and written communications. Eisenberg & Johnson (1996) state that curricula should go beyond the “how” to stress the “when” or “why” of computer use and suggest that students should be given projects where they determine what needs to be accomplished, whether the computer is the best tool to accomplish the objectives, and then to use the computer (if appropriate) as part of the process to accomplish the task. Business teachers may be able to design lesson plans to incorporate uses of electronic communications identified by the administrative office professionals participating in this study to create scenarios whereby students analyze problems and determine the best methods for gathering information and obtaining solutions to problems. For example, word processing and written communication skills could be integrated into a unit on electronic communications by posting messages to
USENET newsgroups to request information about a topic of interest. Students could discuss issues involved with contacting a business located in another time zone, leading to a discussion comparing and contrasting costs and convenience of making a long-distance telephone call between specific hours and sending/receiving an e-mail message at any time of day. In addition, students could research the difference in costs between sending document attachments, as opposed to using the services of a courier service.

Definition of Terms

The researcher has defined the following terms for use in this study.

**Level of Use of Electronic Communications by Administrative Office Professionals**

**Constitutive Definition**—*Level* is defined as a position in a scale or rank; *use* is defined as putting into action or service (*Webster's Ninth New Collegiate Dictionary*, 1984). *Electronic* is defined as “relating to activities or processes mediated or enabled through the use of a computer, frequently by means of telecommunications links. …in general electronic has become a near synonym for computerized. The larger group of new phrases beginning with electronic are linked to networking, and in particular to the Internet" (*The Oxford Dictionary of New Words*, 1997). *Communications* is defined as a “means of sending messages, orders, etc., including telephone, telegraph, radio, and television" (*Random House Compact Unabridged Dictionary*, 1996).

**Operational Definition**—For purposes of this study, *electronic communications* refers to an interactive system for sending and receiving messages and information from one user to another via networked computers.

There are many components of electronic communications that may be accessed by users. Components of electronic communications for the exchange of information
may include electronic mail, USENET newsgroups, the World Wide Web on the Internet, and internal organization files available on an intranet. Individuals engaging in electronic communications use software application programs to send and receive e-mail, browse the World Wide Web to view documents, and locate data from the organization’s internal files online. The following are descriptions of components of the electronic communications identified in this study (LaQuey & Ryer, 1993).

Electronic mail, commonly referred to as e-mail, is the sending and receiving of messages. E-mail users may attach documents to their messages, much like an enclosure in an envelope (LaQuey & Ryer, 1993). Users access e-mail through electronic mail software programs (Joseph, 1995). E-mail messages can be sent outside the organization via the Internet or sent to others within the organization via an intranet.

USENET newsgroups on the Internet are discussion forums related to a specific subject. Access is gained through menu-driven newsgroup readers (LaQuey & Ryer, 1993), or through the World Wide Web. Messages posted to USENET newsgroups are sent in e-mail message form (LaQuey & Ryer, 1993).

The World Wide Web employs hyperlinks to gain access to networked documents, which may include text, graphics, audio, and video files. Hyperlinks are identified by their “mouse-clickable” characteristics, which may include highlighted or underlined text or graphics, and linked to another document or site on the World Wide Web. Access to the World Wide Web is gained through a browser software program, such as Netscape Navigator (Joseph, 1995). Documents may be uploaded to the World Wide Web via FTP (File Transfer Protocol), which transfers files from one computer to another.
Search engines allow the user to locate sources of information on the World Wide Web by entering keywords. Examples of search engines are Yahoo, Excite, Lycos, and Infoseek. The search results provide hyperlinks to selected documents on the World Wide Web.

An intranet is an organization’s internal networked system. Employees of the organization may access an intranet to send and receive e-mail and access internal files of the organization online.

The dependent variable, *Level of Use of Electronic Communications by Administrative Office Professionals*, was operationalized as the total number of days per week an individual administrative office professional who participated in the study used eight different components of electronic communications. The components are: using e-mail to send/receive messages; attaching documents or files to e-mail messages; accessing USENET newsgroups; accessing internal company files via computer to locate information online; accessing the World Wide Web to locate information; using a search engine to locate information on the World Wide Web; authoring, editing, or updating the organization’s World Wide Web site; and authoring, editing, or updating the organization’s intranet site (available to organization employees only). In addition, an open-end item for "Other" allowed the respondent to include a component of electronic communications not specifically listed and its frequency of use. A six-point scale of 0-5 (0 = No days per week to 5 = 5 days per week) was used to measure the level of use of electronic communications. Scores ranged from 0-40. The highest score would be achieved by a score of 5 on all eight components. Data were analyzed as interval data. Higher scores indicated higher levels of use. Means, standard deviations, and ranges
were used to describe the level of use of electronic communications components. A “Not Familiar” column (also equal to 0) was provided on the questionnaire and used by respondents who were unfamiliar with a specific electronic communications component.

**Administrative Office Professional**

*Constitutive definition*—The mission of the International Association of Administrative Professionals (IAAP), formerly known as Professional Secretaries International (PSI) is to “be the acknowledged, recognized leader of office professionals and to enhance their individual collective value, image, competence, and influence” (E-mail communication from IAAP Headquarters, 1998). Some job titles associated with professional-level members of the IAAP are secretary, administrative secretary, executive secretary and variations, administrative assistant, executive assistant, office manager, office coordinator, information specialist, administrator, technician, and associate *(Benchmarking the Profession: 1997 PSI Membership Profile, 1997).*

*Operational Definition*—For purposes of this study, an *administrative office professional* was operationalized as a participant in the study who was a current professional-level member of an Ohio chapter of the IAAP, and currently employed in an office-support position. Professional-level members were not participants in the study if they were currently working as business education teachers, were working in non-office support positions, were retired, or were unemployed. A screening question appeared at the beginning of the Level of Use of Electronic Communications by Administrative Office Professionals questionnaire to determine the employment status of respondents.
Number of Employees in Organization

**Constitutive Definition**—*Number* is defined as a sum of units. An *employee* is one who is employed by another, usually for wages or salary and in a position below the executive level. *Organization* is defined as an administrative and functional structure, such as a business or a political party (*Webster’s Ninth New Collegiate Dictionary*, 1984). Thus, *Number of Employees in Organization* is defined as the total number of individuals who are employed by an entity.

**Operational Definition**—For the purpose of this study, *organization* was operationalized as any entity where an administrative office professional who was a participant in this study was employed. The independent variable, *Number of Employees in Organization*, was operationalized as the numbers of full-time individuals reported to be employed at the administrative office professional’s place of employment. Data were analyzed as ratio data. Frequencies and percentages were used to describe the distribution of the numbers of full-time employees.

Perceived Level of Participative Management

**Constitutive Definition**—*Level* is defined as a position in a scale or rank; *perceived* is synonymous with *observed*; *participative* is synonymous with *shared*; and *management* is “the collective body of those who manage or direct an enterprise” (*Webster’s Ninth New Collegiate Dictionary*, 1984). Griffin (1990) defines *participative management* as “a planned approach to involve lower-level employees in one or more areas of operation previously reserved for management.” Thus, *Perceived Level of*
Participative Management is defined as the ranked observations of an individual about the sharing of responsibilities in directing an entity.

Operational Definition—For purposes of this study, participative management was defined as a management style in which managers and subordinates communicate frequently to exchange information and develop policies to achieve organizational goals, which may determine how and where decisions are made to implement new innovations.

The independent variable, Perceived Level of Participative Management, was operationalized as the total number of management style items from the Level of Use of Electronic Communications questionnaire section on perceived level of participative management selected by participants in the study. Data were analyzed as interval data. Scores ranged from 0-5. Higher scores indicated higher levels of participative management. Means and standard deviations were used to describe the distribution of responses to items about perceptions of participative management.

Perceived Level of Job Responsibility

Constitutive Definition—Level is defined as a position in a scale or rank; job is defined as a specific duty, role, or function; and responsibility refers to accountability in holding a specific office, duty, or trust. Therefore, Level of Job Responsibility is defined as the differing scales of accountability by individuals in carrying out the duties of their employment.

Operational Definition—For purposes of this study, Perceived Level of Job Responsibility was operationalized as the individual’s mean score on the 28 tasks listed in the Level of Use of Electronic Communications by Administrative Office Professionals.
questionnaire section on job responsibilities. A six-point Likert scale of 0-5 (0 = Never to 5 = Very Frequently) was used to measure the level of use of electronic communications with a range of scores from 0-140. Data were summated and analyzed as interval data. Higher scores indicated higher levels of job responsibility. Means, standard deviations, frequencies, percentages, and ranges were used to describe the distribution of frequencies of performing each task.

Level of Electronic Communications Training

Constitutive Definition—*Level* is defined as a position in a scale or rank; *Train* is defined as “to teach so as to make fit, qualified or proficient” (*Webster’s Ninth New Collegiate Dictionary*, 1984). *Level of Electronic Communications Training* is defined as the quantity of instruction an administrative office professional has received with regard to using electronic communications.

Operational Definition—For purposes of this study, *Electronic Communications Training* is operationally defined as any method of instruction a participant in this study has received in the use of electronic communications. Electronic Communications Training may include formal or informal training. Formal training consists of structured classes, workshops, and seminars, and may be provided by the employer/organization shortly after installation of an electronic communications system; or the participant may have attended formal training sessions outside the organization. Informal training is unstructured and may include assistance from a staff technical support person or learning through experimentation by the participant. The independent variable, *Level of Electronic Communications Training* was operationalized as the total number of
electronic communications training methods a participant in the study reports having received when responding to a question on the Level of Use of Electronic Communications by Administrative Office Professionals questionnaire section on level of electronic communications training. Scores ranged from 0-6. Data were analyzed as interval data. A higher score indicated a higher level of training. Means, standard deviations, frequencies, percentages, and ranges were used to describe the distribution of types of electronic communications training.

Level of Proximity to Electronic Communications

Constitutive Definition—Level is defined as a position in a scale or rank; Proximity is synonymous with closeness (Webster's Ninth New Collegiate Dictionary, 1984). Thus, Level of Proximity to Electronic Communications is defined as a scale of closeness of an administrative office professional to a workstation equipped with electronic communications.

Operational Definition—For purposes of this study, proximity was operationally defined as the closest location a participant in the study uses electronic communications at work. The independent variable, Level of Proximity to Electronic Communications, was operationalized as the reported response by a participant in the study on the item in the Level of Use of Electronic Communications by Administrative Office Professionals questionnaire section on proximity to electronic communications. Responses of a = “I use electronic communications at my own workstation,” b = “I use electronic communications at a nearby/convenient location,” c = “I use electronic communications at a remote/inconvenient location,” and d = “Other (please explain)” were used to measure
the level of proximity to electronic communications. Data were analyzed as nominal
data. Frequencies and percentages were used to describe the distribution of responses to
levels of proximity reported by participants.

Perceived Level of Access to Electronic Communications

Constitutive Definition—Level is defined as a position in a scale or rank; Access
is defined as the “ability to obtain or make use of” (Webster’s Ninth New Collegiate
Dictionary, 1984). Therefore, Perceived Level of Access to Electronic Communications
is the scale to which an administrative office professional is able to make use of
electronic communications.

Operational Definition—For purposes of this study, access to electronic
communications was operationally defined as the ability of the administrative office
professional who was a participant in the study to make use of various components of
electronic communications at work. These components include, but are not limited to,
electronic mail, USENET newsgroups, the World Wide Web, and an organization’s
intranet. The independent variable, Perceived Level of Access to Electronic
Communications was operationalized as the total number of electronic communications
components to which a participant in the study reported having access when responding
to a question on the Level of Use of Electronic Communications by Administrative
Office Professionals questionnaire. Data were analyzed as interval data. Scores ranged
from 0-7. A higher number indicated greater access. Means, standard deviations,
frequencies, percentages, and ranges were used to describe the distribution of
components of electronic communications to which participants reported having access.
Perceived Level of Relative Advantage of Using Electronic Communications

Constitutive Definition—Rogers (1995) defines *relative advantage* as "the degree to which an innovation is perceived as being better than the idea it supersedes." Relative advantage considers the benefits and costs from adoption of an innovation and is a good predictor of the innovation's rate of adoption. Aspects of relative advantage may be subdivided to include degree of economic profitability, decrease in discomfort, savings in time and effort, and rapidness of the reward (Rogers, 1995).

Operational Definition—For purposes of this study, *relative advantage of using electronic communications* was operationalized as the degree to which a participant in the study perceived the use of electronic communications provided some benefit over earlier methods of communication or locating information. The independent variable, *Perceived Level of Relative Advantage of Using Electronic Communications* was operationalized as the individual's mean score on the nine Likert-scale items from the Level of Use of Electronic Communications Questionnaire section on perceptions of relative advantage. A six-point scale of 1-6 (1 = Strongly Disagree to 6 = Strongly Agree) was used to measure individual's responses. Scores ranged from 0-54. Data were analyzed as interval data. Higher scores indicated higher levels of perceived relative advantage for using electronic communications. Means, standard deviations, and ranges were used to describe the distribution of responses to the perceptions of relative advantage of using electronic communications items on the questionnaire.
Level of Formal Education

Constitutive Definition—Level is defined as a position in a scale or rank; Formal is synonymous with conventional. Educate is defined as “to train by formal instruction and supervised practice, especially in a skill, trade, or profession” (Webster’s Ninth New Collegiate Dictionary, 1984). Thus, Level of Formal Education is the ranking of administrative office professionals according to total years of conventional education.

Operational Definition—For purposes of this study, the independent variable, Level of Formal Education, was operationalized as the reported highest level of education a participant in the study has completed in a structured course of study leading to a high school diploma or college degree. Data were analyzed as ordinal data. Frequencies and percentages were used to describe the distribution of the years of formal training completed by the participants.

CPS® Rating

Constitutive Definition—CPS® stands for Certified Professional Secretary®. An individual earns the CPS® designation by meeting a combination of work experience and education requirements and passing a rigorous three-part examination. The examination covers three areas: Finance and Business Law, Office Systems and Administration, and Management. The examination is administered twice a year by the Institute for Certification, a Department of the IAAP, formerly PSI. Holders of the CPS® rating often earn more money and carry greater responsibilities than office support professionals without the CPS® rating (Benchmarking the Profession: PSI Membership Profile, 1997).
Operational Definition—For purposes of this study, the independent variable, CPS® Rating, was operationally defined as a participant in the study who has earned the CPS® rating. CPS® Rating was quantified by an item on the Level of Use of Electronic Communications by Administrative Office Professionals questionnaire asking if the participant holds the CPS® rating. The response was either “yes” or “no.” Data were analyzed as nominal data. Frequencies and percentages were used to describe the distribution of CPS® ratings of participants.

Number of Household Members Using Electronic Communications at Home

Constitutive Definition—Number is defined as a sum of units. Household is defined as “a social unit comprised of those living together in the same dwelling.” Member is defined as “one of the individuals composing a group.” Use is defined as “to avail oneself of.” Home is defined as “one’s place of residence” (Webster’s Ninth New Collegiate Dictionary, 1984). Therefore, Number of Household Members Using Electronic Communications is defined as the total sum of all individuals living at the administrative office professional’s residence who avail themselves of electronic communications.

Operational Definition—Household members were operationally defined as all individuals who lived in the same dwelling with a participant in the study, including the participant, who are school age or older. The independent variable, Number of Household Members Using Electronic Communications at Home, was operationalized as the reported total number of household members using electronic communications at home. Participants in the study were asked to identify the number and relationship(s) of
members of the household who use electronic communications at home. Data were analyzed as ratio data. Means, standard deviations, and ranges were used to describe the distribution of household members who use electronic communications at home.

**Level of Household Use of Electronic Communications at Home**

**Constitutive Definition**—*Level* is defined as a position in a scale or rank; *Household* is defined as “a social unit comprised of those living together in the same dwelling.” *Use* is defined as “to avail oneself of.” *Home* is one’s place of residence (Webster’s Ninth New Collegiate Dictionary, 1984). Therefore, the **Level of Household Use of Electronic Communications at Home** is defined as the differing amounts of time all members of the household avail themselves of electronic communications.

**Operational Definition**—*Household* was operationally defined as anyone sharing the residence with a participant in the study, which may include the participant, spouse or significant other, blood relatives who are school-age or older, step-relatives, and roommates. The independent variable, **Level of Household Use of Electronic Communications at Home**, was operationalized as the reported total number of hours per week that any member of the individual’s household spends online connected to an online service, ISP, or BBS. Data were analyzed as ratio data. Higher numbers of hours online indicated higher levels of use. Means, standard deviations, and ranges were used to describe the distribution of the numbers of hours online per week.
CHAPTER 2

REVIEW OF LITERATURE

Introduction

Rogers (1995) defines an innovation as “an idea, practice, or object that is perceived as new by an individual or other unit of adoption.” He defines diffusion as “the process by which an innovation is communicated through certain channels over time among the members of a social system” (Rogers, 1995).

Innovation

Administrative office professionals have been involved in the diffusion of numerous innovations that have affected how they perform their job duties. Some of these innovations have included the following:

- QWERTY typewriters, from manual to electric to electronic models
- Shorthand and transcribing machines
- Full-key adding machines and ten-key electronic calculators
- Mimeograph machines, spirit duplicators, and photocopiers
- Teletype and fax machines
- Magnetic card typewriters and dedicated word processors
• Personal computers and electronic communications

Whenever a new idea is introduced, it will be met with uncertainty. Rogers (1995) defines uncertainty as “the degree to which a number of alternatives are perceived with respect to the occurrence of an event and the relative probability of the alternatives.” Uncertainty is reduced by information, which lays the necessary groundwork for forming structure and predictability.

Technological innovations have two components. The hardware aspect is the physical object that encompasses the tool. For example, personal computer hardware includes the monitor, keyboard, mouse, disk drives, central processing unit, and power supply. The software aspect is the information base for the tool. Personal computer software contains coded instructions that work with the hardware to allow users to perform problem-solving functions (Rogers, 1995).

While technological innovations are usually beneficial to potential adopters, uncertainty about its advantages over previous practices sparks the motivation for information-seeking activities. A decision to adopt or reject an innovation is made after the individual has learned enough about how and why the innovation works, its anticipated consequences, and the advantages and disadvantages of the innovation (Rogers, 1995).

Rogers defines a technology cluster as “one or more distinguishable elements of technology that are perceived as being closely related” (Rogers, 1995). Such technology clusters, when introduced as a package, may lead to faster adoption of an innovation.

Once business offices adopted personal computers, the hardware aspect, a number of technology clusters were introduced incorporating the software aspect. For example,
word processing, database, and spreadsheet programs were combined into integrated software packages, such as Microsoft Office and Corel WordPerfect Suite. More recently, Internet access has been promoted by Internet Service Providers (ISPs) as a package consisting of electronic mail, the World Wide Web, and File Transfer Protocol (FTP). The ISPs provide the software needed to connect to the Internet, process electronic mail, browse the World Wide Web, and transfer files between computers.

Individuals adopt innovations at different rates based on their perceived characteristics of the innovation. Rogers (1995) and Lionberger (1960) discuss the following five characteristics to explain the differing rates of adoption:

1. **Relative advantage.** How much does the individual perceive the innovation as beneficial? Relative advantage takes into consideration improved economics, social prestige, convenience, and satisfaction after adoption of the innovation (Rogers, 1995). If adoption costs are high, more time is needed for adoption (Lionberger, 1960).

2. **Compatibility.** How consistent does the individual perceive the innovation to be with present values, prior experiences, and future needs? Changing values and norms is a time-consuming process (Rogers, 1995). Compatibility with old ideas results in faster adoption time (Lionberger, 1960).

3. **Complexity.** How difficult does the individual perceive the innovation will be to understand and use? The more complicated the innovation, the slower will be the rate of adoption (Rogers, 1995). If the innovation can be segmented and adopted piece by piece, adoption will occur faster (Lionberger, 1960).
4. **Trialability.** Can the individual try out the innovation on a limited basis? If so, these innovations are often adopted more quickly because it reduces uncertainty and can be learned by hands-on experience (Rogers, 1995). Adoption time may be shortened if the individual has the option of reverting back to a prior practice (Lionberger, 1960).

5. **Observability.** How quickly will an individual see the results of the innovation? Greater visibility generates peer discussion, which contributes to adoption (Rogers, 1995). Adopters expect to see superior performance or demonstrated merit from their own experience or the experience of others (Lionberger, 1960).

Innovations are more likely to be adopted rapidly if they are perceived to have greater relative advantage, compatibility, trialability, observability, and less complexity (Rogers, 1995).

**Communication**

At the heart of the diffusion process is the communication process, which involves using a communication channel to link an individual who has knowledge or personal experience with an innovation to an individual who does not have the same level of experience with the innovation. Any variety of communication channels may be used in the diffusion process. These include mass media and interpersonal channels (Rogers, 1995).

Lionberger (1960) identifies five stages in the individual adoption process and the role of different communication channels at each stage.
1. **Awareness.** New ideas are first communicated by mass media. The individual gains only general information at this stage.

2. **Interest.** The individual wishes to know more about the innovation and obtains additional information from mass media, peers, and other sources. The individual wants specific details about what the innovation is, what it will do, and answers to how and why questions.

3. **Evaluation.** The individual begins to weigh the accumulated information to determine if the innovation has merit and is worthy of consideration. Communication shifts from mass media channels to interpersonal channels. The individual seeks the opinions of respected peers with experience using the innovation, followed by outsiders and commercial sources.

4. **Trial.** Once the individual is ready to try the innovation, information from close peers and commercial dealers become important.

5. **Adoption.** Individual and close peer successes are most important. Mass media reinforces prior decisions. Commercial dealers lose their importance at this stage (Lionberger, 1960).

**Time**

The time element during diffusion is involved in three dimensions—first, the innovation-decision process; second, the innovativeness of an individual compared with others in the social system; and third, the innovation's rate of adoption (Rogers, 1995).

Rogers' innovation-decision process is similar to Lionberger's individual adoption process. There are five stages:
1. **Knowledge.** An individual first learns of an innovation's existence and gains general knowledge.

2. **Persuasion.** The individual forms a favorable or unfavorable opinion about the innovation.

3. **Decision.** The individual participates in activities that lead to a decision to adopt or reject the innovation.

4. **Implementation.** The individual tries out the innovation. Re-invention may occur to adapt the innovation to the individual's specific needs.

5. **Confirmation.** The individual seeks reinforcement of a previous decision, which may lead to adoption, rejection, or discontinuance.

These five steps usually occur in a time-ordered sequence, although variations may take place if the decision stage occurs before the persuasion stage. The length of time necessary to progress through all five steps of the innovation-decision process is called the innovation-decision period (Rogers, 1995).

Organizations, rather than individuals, sometimes make innovation decisions, as in the case of the adoption of an electronic mail system by all members of its staff, and the process is more complicated (Rogers, 1995). Rogers identifies the following five stages of the innovation process in organizations:

1. **Agenda-setting.** The organization is involved in an ongoing process of prioritizing needs over an extended period of time. A performance gap may be identified, which is a discrepancy between expectations and actual performance. Performance gaps can launch the innovation process (Rogers, 1995).
2. *Matching.* The organization tries to fit an innovation with a specific problem on the organization’s agenda to see how well they go together. This is the information-gathering stage where feasibility studies take place to determine which problems may be encountered if adoption occurs (Rogers, 1995).

3. *Redefining/Restructuring.* The innovation begins its implementation stage and may be re-invented from its original configuration to accommodate the needs and structure of the organization. The organization’s structure may be modified to accommodate the innovation, and the innovation and organization are both expected to change. In the case of an electronic mail system, all staff members could access the CEO directly (Rogers, 1995). If an innovation champion—a powerful individual in the organization—gets involved, the adoption of an innovation has a greater chance for success (Rogers, 1995).

4. *Clarifying.* As an innovation, such as an electronic mail system, is made available to more people in the organization, its meaning becomes clearer. As more people talk about the innovation, answers to their how, what, and why questions are answered through social construction (Rogers, 1995).

5. *Routinizing.* The innovation process is complete once the innovation has been integrated into daily activities and loses its newness and separate identity (Rogers, 1995).

Another time dimension is innovativeness. Rogers (1995) defines *innovativeness* as “the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than the other members of a system.” The five adopter categories Rogers (1995) uses when categorizing individuals according to their innovativeness are
(1) innovators, (2) early adopters, (3) early majority, (4) late majority, and (5) laggards. The frequency distribution of these adopter categories approaches a normal, bell-shaped curve over time. The frequency distribution is asymmetrical in that there are three categories to the left of the mean and two to the right (Rogers, 1995).

The third time dimension Rogers (1995) identifies is rate of adoption, or the relative speed that members of a social system take to adopt an innovation. To illustrate the rate of adoption, the number of adopters is plotted on a cumulative-frequency basis over time. The distribution appears as an S-shaped curve. The curve begins slowly as only a few individuals adopt the innovation initially. As diffusion takes off, the curve climbs during succeeding time periods until a high percentage of the members of the social system have adopted the innovation. After that time period, the curve begins to level off since there are fewer individuals left who have failed to adopt the innovation (Rogers, 1995).

The rate of adoption varies according to innovations and social systems. If the innovation diffuses rapidly, the S-curve is steep. Slower-diffusing innovations will have a gradual S-curve (Rogers, 1995).

**Social System**

The final element in the diffusion process is the social system. Rogers (1995) defines a social system as “a set of interrelated units that are engaged in joint problem-solving to accomplish a common goal. The members or units of a social system may be individuals, informal groups, organizations, and/or subsystems” (Rogers, 1995).
Structure, or a patterned arrangement of units in a system, exists because the individual units do not display identical behavior. The regularity and stability of the structure allows for somewhat accurate predictability of behavior. Structure serves to reduce uncertainty because it provides information (1995).

Two types of structure within a social system are social structure and communication structure. Social structure is formal and provides a hierarchy of higher- and lower-ranking positions within the social system. Communication structure is informal and makes up the interpersonal networks that allow members of a social system to interact with each other in different situations. The social system’s structure can expedite or hinder an innovation’s diffusion (Rogers, 1995).

Electronic Communications as an Innovation in the Office Environment

Among the more recent innovations introduced to business offices is electronic communications. While many business offices are just beginning to tap their potential, electronic communications have been around for the past three decades.

The U.S. Department of Defense started the Internet, originally named ARPANET, in 1969. Through ARPANET, military researchers were linked to remote computer centers and shared hardware and software resources. In the late 1970s, decentralized networks, such as the UNIX-based UUCP and USENET, evolved and linked universities and, eventually, business organizations. The early 1980s brought more coordinated networks to link academic and research communities. The National Science Foundation Network (NSFNET) was formed in 1986 to link national academic and research communities with five supercomputers. With further expansion and
networking, NSFNET replaced ARPANET, which was dismantled in 1990. Once NSFNET was initiated, the Internet took off in popularity. Humans connected via computers and thousands of networks globally (LaQuey & Ryer, 1993).

Today there are nearly 113 million people online worldwide. Of this figure, 62 million connect from the United States, 20 million connect in Europe, and 14 million connect from Asia or the Middle East (NUA Internet Surveys, March 31, 1998).

There are many potential advantages for using electronic communications in the office environment. Some of these include the following:

- Electronic mail to staff and business contacts, both internally and externally, for no more than the cost of a local telephone call.
- Document transfer, which may be handled faster and less expensive than using a fax machine or courier service.
- Accessing current information from a wide variety of resources through the World Wide Web or internal online files without ever leaving one’s desk.
- Posting and updating an organization’s World Wide Web site to attract business (commercial sites) or as a public service (government, utility, and academic sites).

A majority of business offices are equipped with personal computers, a prerequisite for establishing an electronic communications system. As with other innovations, electronic communications as an office tool is surrounded by uncertainty and skepticism. Some may wonder if there is any relative advantage in using electronic communications over other previous practices.
Characteristics of Electronic Communications as an Innovation

There is a hardware and a software component to electronic communications. The hardware is comprised of the networked computers, modems, and telephone lines or cable lines that allow the computers to communicate with each other. The software is embodied in the hardware and consists of the application software used to dial up the Internet or other electronic communications source, send and receive electronic mail, browse the World Wide Web, create and update World Wide Web sites, transfer data and application files between computers internally or externally, and log into a remote Internet connection from another Internet site.

The rates of adoption of electronic communications will vary from organization to organization and from individual to individual based on how the innovation is perceived. The five categories of characteristics that explain the differing rates of adoption are relative advantage, compatibility, complexity, trialability, and observability (Rogers, 1995; Lionberger, 1960). The following are some of the considerations in the rates of adoption of electronic communications by or within organizations.

1. *Relative advantage.* At the organization level, there must be a perceived benefit to the company in terms of improved economics and social prestige. If start-up costs to install an electronic communications system are high, more time may be needed to adopt. Many companies are using the World Wide Web as another method of advertising and providing an avenue for consumers to contact the company directly with questions about its products and services.

At the individual level, the administrative office professional must perceive electronic communications to be a convenient method of communication or
information retrieval over previous practices. For example, there are numerous World Wide Web sites with travel information available, but an administrative office professional may still find it more convenient to contact a travel agent to make airline, hotel, and car rental reservations (Brady, 1997). If there is limited access to electronic communications, the perceived relative advantage may be diminished.

2. Compatibility. An organization that has a history of promoting technological advances and that values keeping lines of communication open at all levels is more likely to adopt electronic communications as a tool for improving communication, both internally and externally. The most popular uses of electronic communications are electronic mail and browsing the World Wide Web or accessing internal files online.

Administrative office professionals quickly understand how to retrieve and send electronic mail because of their previous knowledge of the interoffice memorandum, which is in the same format as an e-mail message and includes familiar notations, such as cc: for carbon copy and bcc: for blind carbon copy. With little additional training, a document file can be attached to the e-mail message, much like sending an enclosure with traditional mail or stapling a document to an interoffice memorandum.

For some administrative office professionals accustomed to using printed reference materials, the prospect of locating information on the World Wide Web may be met with uncertainty. Using an unorganized, uncataloged
resource such as the World Wide Web may be incompatible with old norms and practices.

3. **Complexity.** Electronic communications may be segmented into technology clusters, learned separately, and integrated to work together. Some of the components of electronic communications that individuals may learn separately and integrate later are electronic mail, accessing internal files online, browsing the World Wide Web, FTP, Telnet, and using Web page authoring software.

Electronic mail may be perceived as a simple operation for administrative office professionals because the format is similar to traditional communications. The amount of training required for accessing the internal files online may be dependent upon the employee’s prior familiarity with the organization’s filing system. Learning to browse the World Wide Web may be perceived as an entertaining encyclopedia of information. The attractive, colorful, interactive nature of Web sites invites users to enter a point-and-click world. With additional training, the administrative office professional can use a special type of Web site called a search engine to establish criteria to enter key words and narrow down a search for specific types of information. Learning to bookmark a Web site will facilitate the user’s return to the same site at a later date without using a search engine or keeping a notebook listing useful World Wide Web locations.

Advanced, more complex Internet applications include using FTP, Telnet, and Web page authoring software application programs. Such
applications may take additional time to master. FTP is particularly useful for the individual charged with the responsibility of updating the organization’s Web site as the process involves transferring files from one computer to another on the Internet. Prior to uploading changes to the organization’s Web site, the administrative office professional would make the changes in a Web authoring software application program. Telnet allows the user to use one Internet connection to log onto a remote Internet connection.

4. **Trialability.** Some organizations provide electronic communications training to give their employees hands-on experience in a supportive setting. This is especially helpful when a decision has been made that the entire organization will use an electronic mail system. At the individual level, many ISPs provide potential users with software and a free trial period. This helps the potential user to reduce uncertainty and is more likely to result in a sale of long-term Internet services to the consumer.

5. **Observability.** The sooner positive results are seen from using an innovation such as electronic communications, the faster will be its rate of adoption. Administrative office professionals who send e-mail messages and receive quick replies may feel encouraged to adopt e-mail as a method of communication. Use of the World Wide Web for information retrieval may be adopted if the administrative office professional experiences success in locating information quickly. However, if the search efforts are time consuming and produce incomplete or unreliable information, adoption may be slow or discontinued. Organizations expect to see benefits within a
reasonable period of time. However, if it appears employees are using electronic communications for personal use and nonproductive reasons, electronic communications may be viewed as a time waster. Such situations may result in nonadoption or redefinition of the employees' job duties with respect to electronic communications.

Communication Channels and Electronic Communications

Lionberger (1960) identified the five stages of the individual adoption process as awareness, interest, evaluation, trial, and adoption. The roles of various communication channels change during the cycle. Mass media begins and ends the process. In between are the opinions of interpersonal channels, such as peers and commercial dealers (Lionberger, 1960). The following illustrates the evolution of electronic communications beyond academic and military communities to individual users and organizations.

1. Awareness. Many individuals and organizations outside of academic and military communities first learned about electronic communications, particularly the Internet, from mass media, such as television, newspapers, and computer magazines. The news media often cast the Internet in a negative light with accounts of unsavory activities taking place by individuals online and government employees spending hours using the Internet for personal reasons during office hours. However, computer magazines printed articles touting the Internet as a new frontier and gave positive accounts of its potential. Serious computer users read these articles and wanted more information.
2. **Interest.** At this stage computer users were able to gather more information about electronic communications through a combination of mass media, such as computer magazines, and interpersonal channels. The interpersonal channels included information disseminated at professional organization meetings, presentations at computer user group meetings by ISPs, and discussions with peers. Through these channels, potential Internet users learned how electronic communications works and what it can do for them, both personally and professionally.

3. **Evaluation.** Interpersonal channels increased in importance as individual computer users began to weigh electronic communications information gathered from the various sources at the interest stage and made a decision about whether to subscribe to an ISP. Decision-makers within organizations may consult other organizations that have adopted electronic communications to learn about their experiences.

4. **Trial.** At this stage, the individual or organization was ready to try electronic communications and may have relied on information from ISPs, computer consultants, members of professional organizations, and other close peers.

5. **Adoption.** Once the individual or organization has adopted electronic communications for use on the job, interpersonal communication about close peer successes are most important. No longer does the individual or organization rely on commercial dealers. Mass media serves to reinforce prior decisions.
Time and the Innovation-Decision Process

Organizations must work through the innovation-decision process, a time-ordered sequence identified by Rogers (1995), prior to making a decision to adopt electronic communications to determine if there is a perceived relative advantage over previous practices in adopting electronic communications, as follows.

1. *Agenda setting.* The organization begins with agenda setting and prioritizing long- and short-term needs. There may be a performance gap between present and desired communication or information retrieval methods. The organization may wish to try another form of advertising—the World Wide Web—to gain prestige and boost profits.

2. *Matching.* The organization then tries matching its goals for improved communication, information retrieval, or advertising efforts and gathers information to see how well electronic communications may potentially achieve the desired goals. The innovation is examined from many angles to predict what problems may be encountered. Implementation costs are also considered to determine if adoption is cost effective.

3. *Redefining/Restructuring.* The organization begins implementation of the innovation at the redefining or restructuring stage, but may have to undergo re-invention to protect the organization. For example, if the organization decides to advertise its products or services on the World Wide Web, it may be necessary to establish a firewall to prevent penetration of its network by outsiders who could gain access to internal data files.
4. **Clarification.** The organization makes electronic communications available to more of its employees, and its meaning is clarified. Seminars or training sessions may be conducted to encourage employees to use the new e-mail system, browse the World Wide Web or access internal online files to retrieve information, or update its information on the organization's Web site. Employees are encouraged to talk about the innovation and ask questions about their concerns.

5. **Routinizing.** Finally, the organization's employees integrate electronic communications into their daily routine, and the innovation loses its newness. Checking e-mail upon arrival at the office and upon return from breaks is now normal activity. Some employees routinely check specific Web sites for information or conduct their own searches for information. Other employees may be charged with the responsibility of updating the organization's Web site on a regular basis.

### Innovativeness of Administrative Office Professionals and Rate of Electronic Communications Adoption

Innovativeness refers to the degree to which an individual or organization is relatively earlier than others in adopting an innovation. Rate of adoption refers to the relative speed with which the members of a social system adopt an innovation.

There are a number of environmental and personal characteristics related to the level of use of electronic communications by administrative office professionals. These characteristics may explain why some administrative office professionals have adopted...
electronic communications and integrated them into their daily office tasks while others are unable or unwilling to adopt electronic communications as part of their normal job duties.

The environmental characteristics are associated with the organizations employing administrative office professionals. These characteristics include the organization’s size, level of participative management, perceived relative advantage, level of training, perceived level of access, and ease of use of electronic communications.

The personal characteristics are associated with the administrative office professional's individual background. These characteristics include the administrative office professional’s age, amount of formal education, household demographics (i.e., marital status and number of children over a certain age living at home), and Internet use at home.

These environmental and personal characteristics, when examined in detail individually or in combination, may be used to determine the innovativeness of an administrative office professional in using electronic communications to perform daily job duties.

**The Office Environment as a Social System**

Most offices have a structured social system made up of a hierarchy of higher-ranking and lower-ranking positions. The higher-ranking positions include the executives, administrators, or professionals upon which the business or organization is founded. The lower-ranking positions are filled by support staff and may include job titles such as secretary, word processor, administrative assistant, receptionist, file clerk,
or bookkeeper. These job titles, for purposes of this study, will be called administrative office professionals.

A social system is made up of interrelated units working together to accomplish a common goal (Rogers, 1995). Administrative office professionals are engaged in an informal communication structure of interpersonal networks to interact with other social system members in various situations, such as adoption of electronic communications. Within the administrative office professional's job site, the interpersonal network may include supervisors and other administrative office professionals.

Once a decision to adopt electronic communications have been made by higher-ranking officials within the organization, administrative office professionals communicate with supervisors to learn how the innovation will be integrated into the office environment, what training may be offered, and where to obtain help. Administrative office professionals may communicate informally with their peers during breaks to discuss how they are using electronic communications to perform their job duties and what problems they have encountered along the way.

Outside of their own office environment, administrative office professionals may communicate with family, friends, and peers at professional organization meetings to solicit opinions and gain insight as to whether electronic communications may help or hinder them in carryout their job duties.

Administrative office professionals are individuals and do not display identical behavior. However, understanding the various interpersonal networks of administrative office professionals will aid in providing a structure to provide information, reduce
uncertainty, and accurately predict behavior as it relates to adoption of electronic communications to perform job duties in the office environment.

**Related Studies**

Davis (1997) sought to describe factors regarding use of the Internet within companies and sent a survey instrument to a representative from each company member of the Information Industry Association (n=519).

The research found that 92.5% of the respondents indicated their companies utilize the Internet. Seventy-five percent of the respondents indicated that primary Internet uses within the company were for research/information searches and marketing and/or advertising, while 66% used the Internet for correspondence. Only 52% of the respondents indicated that all employees had access to the Internet. The specific applications used by the company included Internet browsers (93%), e-mail (88%), newsgroups (51%), and Internet relay chat (10%) (Davis, 1997).

The research by Davis (1997) supports the need for business educators to stay abreast of changing technologies to prepare students with a thorough knowledge of hardware and software requirements and procedures for use of new technologies in business and industry.

Porter (1997) described the level of use of the Internet by Ohio State University Extension educators (n=207) and investigated the relationships between the level of use of the Internet and selected factors after administration of a survey questionnaire. The
study also determined which selected factors explained the unique variance of Internet use by the population.

The research study found that Ohio State University Extension educators rarely or occasionally use the Internet because they lack proficiency in the skills needed for Internet use (Porter, 1997). Most Ohio State University Extension educators have Internet access at work (94%) and about half (47%) have access at home (Porter, 1997). Data revealed significant substantial associations exist between level of use of the Internet and home access, computer literacy and proficiency, and Internet literacy (Porter, 1997). The Ohio State University Extension educators who use the Internet are the educators who are most proficient in the use of the Internet (Porter, 1997).

In addition, very strong associations exist between level of use of the Internet and Internet proficiency and perception of the Internet. The positive perception of the Internet by Ohio State University Extension educators reveals a potential to persuade others within Extension to use the Internet (Porter, 1997; Rogers, 1995).

Internet proficiency, home access, and perception of the Internet explained the greatest unique variance in Internet use in Porter's (1997) study.

Lin (1996) proposed a "need-adaptation adoption process" model and used a survey questionnaire to compare personal computer adopters, likely adopters, and nonadopters with their psychological orientation, attitudinal tendencies, media and technology use, and demographic backgrounds.

The need-adaptation adoption process may identify the psychological nature of individuals who have a need for innovativeness but show contrast in their actual adoption behavior. One set of antecedent variables formulate the need for innovativeness, while
intervening factors influence the decision to complete the need-adaptation adoption process (Lin, 1996). In addition, evaluative criteria related to the adoption of the new technology, e.g., perceived available financial resources, perceived complexity, perceived advantages/usefulness (Rogers, 1995), and need for gratification (Lin, 1993), play a role in determining whether the need for innovativeness will be fulfilled or delayed (Lin, 1996).

The study findings revealed that likely adopters showed more interest in Internet use because the Internet was perceived to be associated with a higher degree of innovativeness than adopters or nonadopters (Lin, 1996). An additional finding was that the diffusion process for a communication technology will be slower and longer if that technology is considered a novelty for an extended period of time (Lin, 1996).


The Web and television have similar properties. For example, Web users sit in front of a screen and click a mouse to move from one site to another, much like using a remote control to change channels on television (Kaye, 1996).
While Rubin (1983) found that the strongest motivation for watching television was to pass time/out of habit, Kaye (1996) found that the three strongest motivations for using the Web were first for entertainment, next for social interaction, and then to pass time. Social and information motivations were strongly correlated with Web attachment (Kaye, 1996) but not highly correlated with television affinity (Rubin, 1981). Ease of use of the Web was most important for users who enter the Web for a specific reason, resulting in more motivation to seek information, entertainment, or visit specific sites. Ease and simplicity of use was less important for users who explore the Web to pass time, escape, or interact with others. Positive associations were found for the amount of weekly use online and overall Web experience with Web use motivations. The Web differs from television, in that it is interactive and requires the user's attention; television is a more passive medium.

A study by Marcinkiewicz (1996) sought to identify level of computer use by practicing teachers and any change from expected to actual levels of use within the preservice-to-novice teachers. In addition, the research sought to identify internal motivation variables to predict teachers' use of computers (Marcinkiewicz, 1996).

The study found teachers' level of use was not high. Preservice educators had very high expectations of computer use, which dropped after teaching for one year. Strong predictors initially were perceived relevance of and self-competence in computer use. However, "Subjective Norms" emerged as the predictor that superseded all other variables once factored into the calculation (Marcinkiewicz, 1996).

Marcinkiewicz (1996) concluded that teachers need to perceive an expectation of computer integration before computer adoption will occur. Administrators, colleagues,
students, and the profession would establish perceptions of computer integration through modeling use of computers. Faculty training and technical support should be available in a work environment equipped with computers.
CHAPTER 3

METHODOLOGY

Purpose of the Study

The purpose of the study was to identify environmental and personal characteristics related to the level of use of electronic communications by administrative office professionals.

This study was concerned with determining at what level administrative office professionals use electronic communications to perform their job duties. In addition, this study sought to determine differences, if any, in the environmental and personal characteristics associated with use of electronic communications by administrative office professionals.

Design of the Study

A descriptive-correlational research design was used to describe the level of use of electronic communications by administrative office professionals. Descriptive statistics were used to identify and report frequency distributions, means, standard deviations, and ranges of the variables related to the environmental characteristics and personal characteristics of administrative office professionals. Correlations were used to
determine relationships between the dependent variable, electronic communications use, and the independent variables, environmental and personal characteristics. In addition, multiple regression analysis was used to determine the greatest variance in each of the statistically significant variables used as factors influencing an administrative office professional's decision to use electronic communications.

**Population of the Study**

The target population for this study was current Ohio professional members of the International Association of Administrative Professionals (IAAP), formerly known as Professional Secretaries International®—The Association for Office Professionals™ (PSI®). The population is the only organization of administrative office professionals in Ohio that represents a wide variety of organizations.

Business education instructors in Central Ohio hold IAAP members in high esteem because they are committed to their profession, are highly skilled, and serve as role models for students entering the profession. A substantial number of IAAP members have passed a three-part examination administered by the Institute for Certification, a department of the IAAP, to earn the rating Certified Professional Secretary®, which is abbreviated CPS and follows the individual’s name. Candidates for the CPS® program must meet a combination of education and work experience requirements. Eligibility in the CPS program is extended to full-time employed secretaries, experienced secretaries, college/university students, and business educators. Office Technology covers 50% of the Office Systems and Administration portion of the examination.
Sampling Procedure

The four levels of membership in the IAAP are as follows:

1. Association memberships—businesses, firms, and educational institutions that sustain the objectives of the PSI.
2. Student memberships—individual full-time students enrolled in business education.
3. Emeritus memberships—individual retired members.
4. Professional memberships—individual members, who are currently working as secretaries or other qualified office professionals, holders of a CPS® rating, or business education instructors. (Application for Membership in Professional Secretaries International®, 1997-98 Membership Year)

The frame for the study included all current professional members of the IAAP in Ohio (N=1,560). An up-to-date list of IAAP members for the 1998 membership year was obtained from the IAAP headquarters in August 1998 to control frame error. The list was checked for duplication of names to control selection error.

For a given population where N=1600, a sample size of 310 was needed (Krejcie & Morgan, 1970). A systematic sampling design was used for the study (n=312). The sample represents 20% of the population. Slips of paper numbered from 1-5 were placed in a hat and a number drawn to determine the starting point on the numbered membership list. Once the starting point was determined, every fifth name was selected for the study.
Instrumentation

The researcher designed a questionnaire relative to current employment status, level of electronic communications use and environmental and personal characteristics to obtain the data for the study. The instrument design was based on the research questions in Chapter 1.

The instrument design was adapted from the Level of Use of the Internet by Ohio State University Extension questionnaire (Porter, 1997) and was divided into five parts. A panel of experts was consulted for assistance with writing questions for each section, as follows:

Part I—General Information. The questions in this section were designed to screen respondents. The first question determined the respondent’s current employment status and provided instructions for completing the remainder of the questionnaire based upon the response. The second section question determined the respondent’s current use of electronic communications at work and provided instructions for completing the questionnaire based upon the response.

Part II—Level of Use of Electronic Communications. The questions in this section determined the number of days per week an administrative office professional used various components of electronic communications and were adapted from the Level of Use of the Internet by Ohio State University Extension questionnaire (Porter, 1997).

Part III—Environmental Characteristics. The questions in this section were designed to identify environmental characteristics that determined the level of use of electronic communications by administrative office professionals. The questions that determined perceived level of access to electronic communications were adapted from
the Level of Use of the Internet by Ohio State University Extension questionnaire (Porter, 1997). The question that determined the number of employees in the organization was based upon the literature related to size and number of full-time equivalent employees (Rogers, 1995; Pungitore, 1989). The questions that determined perceived level of participative management were based upon the literature related to participative management (Griffin, 1990). A member of the panel of experts who was currently employed in a large corporation provided input for the specific questions. The questions that determined perceived level of job responsibility were adapted from the list of tasks identified in the OCAP for Administrative/Secretarial Services (1992). A member of the panel of experts who was currently employed in a secondary business education program provided input for the specific questions. The panel of experts provided input for the questions that determined level of electronic communications training, level of proximity to electronic communications and perceived level of relative advantage.

Part IV—Personal Characteristics. The questions in this section were designed to identify environmental characteristics that determined the level of use of electronic communications by administrative office professionals. The questions that determined age, level of formal education, and CPS® certification were based upon question formats recommended by Fowler (1993). The panel of experts provided input for the questions that determined number of household members at home using electronic communications and level of household use at home.

Part V—Comments. The final question in the instrument provided an opportunity for respondents to provide qualitative data and supplement their answers with information not specifically addressed in the instrument.
The questionnaire was reviewed for content validity prior to administration by a panel of experts consisting of seven individuals who have knowledge of measurement, the content of the study, and the target population. The panel of experts consisted of the following individuals:

- Three members of The Ohio State University in the School of Physical Activity and Educational Services and the Department of Human and Community Resource Development
- The former department chairperson of the Office Administration Department at Columbus State Community College
- A business education instructor from the Columbus Public Schools
- A business education instructor at a women’s correctional facility who was a current member of the IAAP with a CPS® rating
- A member of the business community who was a former member of the IAAP with a CPS® rating.

A list of panel members is located in Appendix B. The panel of experts provided input and made recommendations for improvement of the instrument.

Face validity of the instrument was established by field testing the instrument using a representative sample of IAAP members from the frame who were not part of the study (n = 7). The researcher provided the field test group with an explanation of the instrument’s purpose and instructions for reviewing the instrument, together with a comment sheet (Appendix C) the researcher developed to provide feedback as to the clarity and conciseness of the instrument.
The instrument was pilot tested for reliability using test-retest after administration to a representative sample of administrative office professionals (n=20) selected from the accessible population who were not part of the study. The responses were examined for a perfect match for each administration of the questionnaire. Reliability was established using percent-agreement calculations for five parts of the instrument.

Part I—General Information. There were two questions in this section, which were designed to screen respondents and provide instructions for completing the remainder of the questionnaire. Part I reliability of r=100% was assessed.

Part II—Level of Use of Electronic Communications. Respondents were asked to report the number of days per week they were engaged in any of the eight activities related to the use of electronic communications components. A column was provided to indicate that the respondent was not familiar with a listed component of electronic communications. The responses were summated for a level of use of electronic communications score. A mean reliability of 84% was assessed.

Part III—Environmental Characteristics. The questions in this section were designed to identify environmental characteristics that helped determine the level of use of electronic communications by administrative office professionals.

The perceived level of access section requested the respondent to check all that applied from a list of electronic communications components available at work. Six electronic communications components were listed. If the electronic communications component was not available at work, the respondent was instructed to leave the space blank. The responses were summated for a perceived level of access score. A mean reliability of 94% was assessed.
The number of employees in organization item requested the respondent to report the approximate number of individuals employed full-time at the organization. A mean reliability of 95% was assessed.

The perceived level of participative management section consisted of five statements about administrative office professionals' perceptions of management style. Respondents were asked to indicate their agreement with each statement on a six-point Likert-scale with responses ranging from 1=Strongly Disagree to 6=Strongly Agree. The responses were summated for a perceived level of participative management score. A mean reliability of 67% was assessed.

The perceived level of job responsibility section consisted of 28 job tasks. Respondents were asked to report how frequently they performed each task based on a six-point Likert scale ranging from 0=Never to 5=Very Frequently. The responses were summated for a perceived level of job responsibility score. A mean reliability of 74% was assessed.

The level of electronic communications training section requested the respondent to check all that applied from a list of training methods the administrative office professional received in the use of electronic communications. Six electronic communications training methods were listed. Respondents either checked or left blank the space next to the statement. The responses were summated for a level of electronic communications training score. A mean reliability of 87% was assessed.

The level of proximity of administrative office professionals to electronic communications question directed the respondents to check from a list of three statements the one response that most accurately describes where they use electronic
communications at work. Respondents also had an opportunity to indicate a location other than the three statements. Reliability of 100% was assessed.

The perceived level of relative advantage section consisted of nine statements about perceptions of management style. Respondents were asked to indicate their agreement with each statement on a six-point Likert-scale with responses ranging from 1=Strongly Disagree to 6=Strongly Agree. The responses were summated for a perceived level of participative management score. A mean reliability of 79% was assessed.

Part IV—Personal Characteristics. The questions in this section were designed to identify personal characteristics that determined the level of use of electronic communications by administrative office professionals.

Age was determined by requesting the respondents to indicate the year in which they were born. Reliability of 100% was assessed.

The level of formal education question directed the respondents to check from a list of five education levels the one response that describes the highest level of education completed. Reliability of 100% was assessed.

The CPS® rating question directed the respondents to check whether they hold the CPS® rating. Responses were either "Yes" or "No." Reliability of 100% was assessed.

The number of household members using electronic communications at home section directed the respondents to check from a list of family/household members to identify which family/household members use electronic communications at home, as well as the number of users in each category. Respondents also had an opportunity to
indicate that no one uses electronic communications at home. Reliability of 98% was assessed.

Level of household use at home was determined by requesting the respondents to indicate the number of total hours per week family/household members, including the respondent, spend online at home. Reliability of 50% was assessed.

The researcher constructed the final instrument to address all recommendations, concerns, and comments expressed by the panel of experts, field test members, and pilot test participants. As a result, adjustments were made to three sections of the instrument; namely, number of employees in organization, perceived level of participative management, and perceived level of job responsibility.

The number of employees in organization was amended to include wording to clarify which employees were to be included in the response. In the final instrument, the respondent was instructed to consider only those employed at the respondent's work location and not affiliates or branch offices.

The format of the perceived level of participative management section was amended so that the Likert-scale responses were replaced with instructions to check all statements that applied. A blank space was left next to each question, and the respondent could check or leave blank each item in the final instrument.

The level of perceived level of job responsibility was adjusted after it was noted that the respondents encountered difficulty in matching the responses to the corresponding lines for each task without use of a ruler. The instrument was amended to provide extra spacing after each group of four tasks on page 5 of the instrument.
Data Collection

After the instrument was developed, field-tested, and approved, the following data collection took place from October 24, 1998 to December 22, 1998, as shown in Table 3.1.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Date</th>
</tr>
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<tbody>
<tr>
<td>Advance-Notice Letter</td>
<td>October 24, 1998</td>
</tr>
<tr>
<td>Cover Letter with Questionnaire and Incentive</td>
<td>October 31, 1998</td>
</tr>
<tr>
<td>Follow-up Postcard</td>
<td>November 7, 1998</td>
</tr>
<tr>
<td>New Cover Letter with Replacement Questionnaire</td>
<td>November 21, 1998</td>
</tr>
<tr>
<td>Follow-up Telephone Call to Nonrespondents</td>
<td>December 5-December 22, 1998</td>
</tr>
</tbody>
</table>

Table 3.1: Schedule for Data Collection

1. An advance-notice letter was mailed to a systematic probability sample of professional-level members of the IAAP in Ohio informing them that they had been randomly selected and requesting their participation (Appendix D).

2. One week later, the survey questionnaire was mailed to all participants in the study. (Appendix E).

3. One week after the questionnaire was mailed out, a follow-up postcard was mailed to all participants, thanking those who had responded and requesting the nonrespondents to complete and return the questionnaire. (Appendix F).
4. Three weeks after the original questionnaire was mailed, a replacement survey questionnaire was mailed to all nonrespondents. (Appendix G).

5. After the questionnaire return deadline, nonrespondents were contacted by telephone to obtain personal data.

Each questionnaire was numbered and tracked for early response, late response, and nonresponse. Nonresponse was handled by comparing early to late respondents to determine if there were differences between the two groups. (Miller & Smith, 1983) Dates of response were noted so that the comparison between early and late respondents could be implemented. Nonresponse error was controlled by contacting administrative office professionals who did not return questionnaires by telephone and collecting information on selected environmental and personal characteristics. The data were compared for statistical differences between respondents and nonrespondents.

Data Analysis

Data were analyzed using SPSS for Windows (8.0) and reported using appropriate measures and procedures.

*Descriptive Analysis.* Percentage distribution tables were used to report the frequencies of responses to questions after they had been tabulated and percentages calculated. In addition, measures of central tendency and standard deviations were reported for each item except questions requesting nominal data. The information described the environmental and personal characteristics associated with use of electronic communications by administrative office professionals.
Correlation Analysis. An alpha level of .05 was set a priori. The levels of measurement for each of the variables were as follows:

- Level of Use of Electronic Communications by Administrative Office Professionals—Interval Data
- Number of Employees in Organization—Ratio Data
- Perceived Level of Participative Management—Interval Data
- Perceived level of job responsibility—Interval Data
- Level of Electronic Communications Training—Interval Data
- Level of Proximity to Electronic Communications—Nominal Data
- Perceived Level of Access to Electronic Communications—Interval Data
- Perceived Level of Relative Advantage of Using Electronic Communications—Interval Data
- Age—Ratio Data
- Level of Formal Education—Ordinal Data
- CPS® Rating—Nominal Data
- Number of Household Members Using Electronic Communications at Home—Ratio Data
- Level of Household Use of Electronic Communications at Home—Ratio Data

Relationships were described between the level of use of electronic communications and personal characteristics, perceived level of access, number of employees in organization, perceived level of participative management, perceived level of job responsibility, level of electronic communications training, level of proximity to
electronic communications, and perceived level of relative advantage. Hopkins, Glass & Hopkins (1987, 1978) basic statistics along with Davis' (1971) conventions were used to measure relationships and were reported by Pearson’s Product Moment, point bi-serial, and Eta correlation coefficients.

**Regression Analysis.** Data were analyzed to determine which selected factors explained the greatest amount of unique variance on the level of use of electronic communications. Selected were personal characteristics, perceived level of access, number of employees in organization, perceived level of participative management, perceived level of job responsibility, level of electronic communications training, level of proximity to electronic communications, and perceived level of relative advantage.

Multiple regression was used to determine the greatest variance in each of the statistically significant variables used as factors influencing an administrative office professional’s decision to use electronic communications.

An alpha level of .05 was set *a priori*. Davis' (1971) conventions were used to describe measures of association (relationship) to interpret the magnitude of all relationships reported in the study, as follows:

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Description</th>
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<tr>
<td>.70 or higher</td>
<td>Very strong association (relationship)</td>
</tr>
<tr>
<td>.50 to .69</td>
<td>Substantial association</td>
</tr>
<tr>
<td>.30 to .49</td>
<td>Moderate association</td>
</tr>
<tr>
<td>.10 to .29</td>
<td>Low association</td>
</tr>
<tr>
<td>.01 to .09</td>
<td>Negligible association</td>
</tr>
</tbody>
</table>

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CHAPTER 4

FINDINGS

The findings of the study are presented in this chapter and are organized into seven sections. The first section describes the data sample. The remaining six sections represent data analysis for the following objectives of the study:

1. Describe the level of use of electronic communications by administrative office professionals.
2. Describe administrative office professionals on selected environmental characteristics.
3. Describe administrative office professionals on selected personal characteristics.
4. Describe the relationships between the level of use of electronic communications and selected environmental characteristics.
5. Describe the relationships between the level of use of electronic communications and selected personal characteristics.
6. Determine which selected factors explain the greatest amount of unique variance on the level of use of electronic communications. Selected factors are environmental characteristics and personal characteristics.
Data Sample

Data collection consisted of a survey questionnaire, which was mailed to the sample and followed up with additional mailings and telephone calls to encourage participation. Data collection was conducted from October 24, 1998, through December 6, 1998. The schedule for data collection is as follows:

- **October 24, 1998**—An advance-notice letter was sent to a sample (n=312) of professional-level members of the International Association of Administrative Professionals (IAAP) from the state of Ohio (Appendix D).

- **October 31, 1998**—A second mailing consisting of a cover letter, postage-stamped copy of the questionnaire, and a teabag gift incentive was sent to the sample (Appendix E).

- **November 7, 1998**—A third mailing consisting of a postcard was mailed to the sample. The postcard included a message thanking all respondents for their participation and requesting participation by nonrespondents (Appendix F).

- **November 21, 1998**—A fourth mailing consisting of a cover letter urging the importance of participation in the study and a postage-stamped copy of the questionnaire was mailed to the nonrespondents (n=109). A final return date of December 6, 1998, was established (Appendix G).

The respondents returned 249 of the 312 questionnaires mailed for an 80% return rate. The questionnaire instructed the IAAP members to return their questionnaires without answering the questions if they were employed in non-office support positions. IAAP members who did not meet the criteria of working in office-support positions
returned 21 questionnaires without answering the questions. The remaining 228 questionnaires returned by IAAP members met the criteria for usable responses for an overall 73% usable response rate (Table 4.1).

<table>
<thead>
<tr>
<th>Population</th>
<th>No. in Population</th>
<th>No. in Sample</th>
<th>Did Not Meet Criteria</th>
<th>No. of Usable Responses</th>
<th>% of Usable Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Association of Administrative Professionals</td>
<td>1,560</td>
<td>312</td>
<td>21</td>
<td>228</td>
<td>73%</td>
</tr>
</tbody>
</table>

Table 4.1: Number of Usable Responses by Members of the International Association of Administrative Professionals (n=312)

employed in teaching positions, or were retired/not currently employed. Eight IAAP members indicated they were employed in a non-office support position, three were employed in a teaching position, and eleven were retired/not currently employed.

There were 63 nonrespondents. Attempts were made to contact 25 by telephone. No telephone numbers could be found for the remaining 38 nonrespondents. Of the 25 nonrespondents who could be contacted by telephone, two were retired/not working, one was working in a non-office support position, two were no longer employed at the company, one was on vacation, two were too busy to respond to questions, one chose not to answer questions, one had a disconnected telephone, five could not be reached after repeated attempts, and the remaining ten agreed to answer selected questions on environmental and personal characteristics. Figure 4.1 illustrates the sample population of respondents and nonrespondents.
Sample Population
n=312

Respondents
n=249
(80%)

- Use Electronic Communications at Work
  n=204

- Did Not Use Electronic Communications at Work
  n=24

- Not Administrative Office Professionals
  n=21

Nonrespondents
n=63
(20%)

- Demographics Gathered
  n=10

- Retired/Not Working
  n=2

- Non-Office Support
  n=1

- Left Organization
  n=2

- On Vacation
  n=1

- Too Busy to Respond
  n=2

- Refused to Respond
  n=1

- Phone Disconnected
  n=1

- No Answer After Repeated Attempts
  n=5

- Unable to Contact
  n=38

Figure 4.1: Analysis of Sample Population of Respondents and Nonrespondents

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Statistically significant differences in level of use of electronic communications were found between the respondents and nonrespondents, as presented in Table 4.2. The mean summated level of use score on the five-point scale indicating numbers of days per week eight components of electronic communications were used for respondents was 14.20 (SD=8.30), which was significantly higher than the mean summated level of use score for nonrespondents of 6.70 (SD=5.21). The higher mean score indicated that respondents had a higher level of use of electronic communications than nonrespondents.

<table>
<thead>
<tr>
<th>Group*</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondents</td>
<td>228</td>
<td>14.20</td>
<td>8.30</td>
<td>2.83</td>
<td>.005</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>10</td>
<td>6.70</td>
<td>5.21</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<.05

Table 4.2: Difference Between Mean Level of Use of Electronic Communications Scores of Respondents and Nonrespondents

Statistically significant differences in one of the environmental characteristics were found between the respondents and nonrespondents (Tables 4.3). The mean summated perceived level of access score for respondents was 3.10 components of electronic communications available (SD=1.18), which was significantly higher than the mean summated score of 1.50 components available for nonrespondents (SD=1.18). The higher mean score for respondents indicated that respondents had a greater number of electronic communications components available than nonrespondents.
No statistically significant difference in number of employees in the organization was found between the respondents and nonrespondents (Table 4.4). The mean number of employees was 368 for nonrespondents (SD=454), which was lower than the mean number of employees of 1,362 for respondents (SD=3,861).

Table 4.4: Difference Between Mean Number of Employees in Organization of Respondents and Nonrespondents

No statistically significant differences in personal characteristics were found between the respondents and nonrespondents (Tables 4.5-4.8). The mean age for
nonrespondents was 51.50 years (SD=9.37), which was slightly higher than the mean age of 46.50 years for respondents (SD=10.32), as presented in Table 4.5.

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondents</td>
<td>219</td>
<td>46.50</td>
<td>10.32</td>
<td>-1.50</td>
<td>.14</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>10</td>
<td>51.50</td>
<td>9.37</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.5: Difference Between Mean Age of Respondents and Nonrespondents

No statistically significant difference was found between the level of formal education of respondents and nonrespondents, as presented in Table 4.6. A slightly higher proportion of respondents held a college degree (34%), while 20% of nonrespondents held a college degree.

<table>
<thead>
<tr>
<th>Group</th>
<th>High School Diploma</th>
<th>College Degree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondents</td>
<td>149</td>
<td>78</td>
<td>227</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>8</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>157</td>
<td>80</td>
<td>237</td>
</tr>
</tbody>
</table>

phi=.35

Table 4.6: Difference Between Level of Formal Education of Respondents and Nonrespondents
No statistically significant difference was found between respondents and nonrespondents who hold a CPS® rating, as presented in Table 4.7. A slightly higher proportion of nonrespondents held a CPS® rating (30%), while 28% of nonrespondents held a CPS® rating.

<table>
<thead>
<tr>
<th>Group</th>
<th>CPS® Rating</th>
<th>No CPS® Rating</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondents</td>
<td>63</td>
<td>165</td>
<td>228</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>3</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>66</td>
<td>172</td>
<td>238</td>
</tr>
</tbody>
</table>

$\phi=.87$

Table 4.7: Difference Between CPS® Rating of Respondents and Nonrespondents

No statistically significant difference was found between mean level of household use at home of respondents and nonrespondents, as presented in Table 4.8. The mean number of hours online per week for families of respondents was 6.07 (SD=10.75), while families of nonrespondents spent 5.70 hours per week online (SD=9.45).

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondents</td>
<td>225</td>
<td>6.07</td>
<td>10.75</td>
<td>.11</td>
<td>.92</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>10</td>
<td>5.70</td>
<td>9.45</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.8: Difference Between Mean Level of Household Use at Home—Weekly Hours Online of Respondents and Nonrespondents
The overall return rate for the respondents was 80%. Borg and Gall (1989) and Kerlinger (1979) assert that when more than 20% of the questionnaires are not returned, there is likelihood that the findings of the study could have been altered if the respondents had returned their questionnaires and replied in a considerably different manner than the respondents. Since the return rate for this study was 80%, it is likely that the nonrespondents will not alter the findings of the study. Therefore, the results of the study were generalized to the population of Ohio members of the International Association of Administrative Professionals.

Description of the Level of Use of Electronic Communications

Current Use of Electronic Communications on the Job

Of the 228 members of the IAAP, 90% use electronic communications at work and 10% do not use electronic communications at work, as shown in Figure 4.2.

---

Figure 4.2: Current Use of Electronic Communications on the Job (n=228)
Level of Use of Electronic Communications

An analysis of the level of use of electronic communications is illustrated in Table 4.9. The mean summated rating was 14.20 on the five-point scale indicating numbers of days per week eight components of electronic communications were used. Scores could range from 0-40; the higher the score, the higher an individual's level of use of electronic communications.

<table>
<thead>
<tr>
<th>Population</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>Observed Min.-Max.</th>
<th>Possible Min.-Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Association of Administrative Professionals</td>
<td>228</td>
<td>14.20</td>
<td>8.30</td>
<td>0-34</td>
<td>0-40</td>
</tr>
</tbody>
</table>

Table 4.9: Mean Level of Use of Electronic Communications Score by the International Association of Administrative Professionals

The most frequently used component of electronic communications was e-mail with a mean score of 4.15 days per week, and the least-used component was authoring/editing/updating the organization's World Wide Web site with a mean score of 0.21. Table 4.10 illustrates the level of use of the eight components of electronic communications.

Respondents who indicated they did not use electronic communications at work were requested to omit the environmental characteristics items on the questionnaire and to complete the personal characteristics items. Respondents who use electronic communications at work were directed to complete all items on the questionnaire.
Therefore, 204 members of the IAAP responded to the environmental characteristics items, and 228 IAAP members responded to personal characteristics items.

<table>
<thead>
<tr>
<th>Electronic Communications Activity</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>Min.-Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Send/receive e-mail messages</td>
<td>204</td>
<td>4.15</td>
<td>1.79</td>
<td>0-5</td>
</tr>
<tr>
<td>Attach documents/files to e-mail messages</td>
<td>204</td>
<td>2.81</td>
<td>2.06</td>
<td>0-5</td>
</tr>
<tr>
<td>Retrieve information from organization's internal network</td>
<td>204</td>
<td>2.69</td>
<td>2.15</td>
<td>0-5</td>
</tr>
<tr>
<td>Retrieve information from the World Wide Web</td>
<td>204</td>
<td>2.69</td>
<td>2.15</td>
<td>0-5</td>
</tr>
<tr>
<td>Use a search engine to locate information on the World Wide Web (e.g., Excite, Infoseek, Lycos, AltaVista, Yahoo, etc.)</td>
<td>204</td>
<td>1.91</td>
<td>1.90</td>
<td>0-5</td>
</tr>
<tr>
<td>Read/post to USENET newsgroups</td>
<td>204</td>
<td>0.36</td>
<td>1.09</td>
<td>0-5</td>
</tr>
<tr>
<td>Author/edit/update the organization's intranet site (available to organization employees only)</td>
<td>204</td>
<td>0.34</td>
<td>1.00</td>
<td>0-5</td>
</tr>
<tr>
<td>Author/edit/update the organization's World Wide Web site</td>
<td>204</td>
<td>0.21</td>
<td>0.81</td>
<td>0-5</td>
</tr>
</tbody>
</table>

Note: Mean score based on six-point scale from 0-5 days per week.

Table 4.10: Mean Score of Days Per Week of Electronic Communications Activity by the International Association of Administrative Professionals

Description of the Environmental Characteristics of the International Association of Administrative Professionals

Perceived Level of Access to Electronic Communications

The number of items that were checked from a list of six electronic communications components to which an IAAP member had available at his or her organization determined the perceived level of access to electronic communications.
An analysis of the perceived level of access to electronic communications is illustrated in Table 4.11. The most frequently reported available components of electronic communications were electronic mail (95%), a networked system accessible by organization employees only (89%), and the World Wide Web (76%). The least frequently accessible components were File Transfer Protocol (22%), USENET Newsgroups (17%), and Telnet (12%). A higher percentage indicates a higher perceived level of access to electronic communications.

<table>
<thead>
<tr>
<th>Components of Electronic Communications</th>
<th>Available f</th>
<th>Available %</th>
<th>Not Available f</th>
<th>Not Available %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic mail</td>
<td>193</td>
<td>95</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>Networked system accessible by organization employees only</td>
<td>181</td>
<td>89</td>
<td>23</td>
<td>11</td>
</tr>
<tr>
<td>World Wide Web</td>
<td>156</td>
<td>76</td>
<td>48</td>
<td>24</td>
</tr>
<tr>
<td>File Transfer Protocol (FTP)</td>
<td>44</td>
<td>22</td>
<td>160</td>
<td>78</td>
</tr>
<tr>
<td>USENET Newsgroups</td>
<td>34</td>
<td>17</td>
<td>170</td>
<td>83</td>
</tr>
<tr>
<td>Telnet</td>
<td>24</td>
<td>12</td>
<td>180</td>
<td>88</td>
</tr>
</tbody>
</table>

Table 4.11: Frequency of Perceived Level of Access to Electronic Communications by the International Association of Administrative Professionals (n=204)

Number of Employees in Organization

The number of employees in the organization was the total approximate number of employees an administrative office professional reported was employed at his or her organization. The IAAP member was instructed to consider those employed at his or her organization.
work location only and not affiliates or branch offices. Table 4.12 represents the distribution of the number of employees in organization.

<table>
<thead>
<tr>
<th>International Association of Administrative Professionals</th>
<th>Frequency</th>
<th>Total Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-35 employees</td>
<td>50</td>
<td>25</td>
</tr>
<tr>
<td>36-250 employees</td>
<td>53</td>
<td>26</td>
</tr>
<tr>
<td>251-1,000 employees</td>
<td>51</td>
<td>25</td>
</tr>
<tr>
<td>Over 1,000 employees</td>
<td>48</td>
<td>24</td>
</tr>
</tbody>
</table>

Mean=1,337  SD=3,827  Median=250  Mode=1,000  Min.=1  Max.=40,000

Table 4.12: Frequency of the Number of Employees in Organization (n=202)

The organizations ranged in size from 1-35 employees (25%), from 36-250 employees (26%), from 251-1,000 employees (25%), and from over 1,000 employees (24%).

**Perceived Level of Participative Management**

The number of items checked from a list of five statements about management issues at his or her organization determined the perceived level of participative management by an IAAP member.

An analysis of the perceived level of participative management is illustrated in Table 4.13. The most frequently reported response was that the employer/organization has developed and communicated a mission statement (84%). The least frequently reported response was that the employer/organization provides an environment that
fosters creativity (64%). A higher percentage indicates a higher perceived level of participative management.

<table>
<thead>
<tr>
<th>Perceptions of Leadership Style of Company/Organization</th>
<th>Perceived Level of Participative Management Frequency</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Present f %</td>
<td>Not Present f %</td>
</tr>
<tr>
<td>Developed and communicated its mission statement</td>
<td>172 84</td>
<td>32 16</td>
</tr>
<tr>
<td>Developed and communicated its vision</td>
<td>158 78</td>
<td>46 22</td>
</tr>
<tr>
<td>Values my input/suggestions</td>
<td>149 73</td>
<td>55 27</td>
</tr>
<tr>
<td>Encourages employee participation in decision-making</td>
<td>143 70</td>
<td>61 30</td>
</tr>
<tr>
<td>Provides an environment that fosters creativity</td>
<td>130 64</td>
<td>74 36</td>
</tr>
</tbody>
</table>

Table 4.13: Frequency of Perceived Level of Participative Management by the International Association of Administrative Professionals (n=204)

Perceived Level of Job Responsibility

Perceived level of job responsibility of administrative office professionals was determined by summating the level of frequency in performing office-support tasks on a six-point Likert scale from 0=Never to 5=Very Frequently. As illustrated in Table 4.14, the mean rating was 90.75. Scores could range between 0-140; the higher the score, the higher the perceived level of job responsibility.
An analysis of perceived job responsibilities is illustrated in Table 4.15. The mean ratings of the most frequently performed job responsibilities are Handle Incoming/Outgoing Telephone Calls (4.71), Maintain Records/Files (4.70), and Maintain a Calendar (4.65). The mean ratings of the least frequently performed job responsibilities are Install Software on Computer (1.61), Transcribe Dictation (1.85), and Create a Desktop Publishing Document (1.93).

**Level of Electronic Communications Training**

The number of items that were checked from a list of six statements about how the IAAP member was trained to use electronic communications determined the level of electronic communications training.

An analysis of the level of electronic communications training is illustrated in Table 4.16. The most frequently reported response was that the IAAP member received informal training on electronic communications inside the organization (64%). The least frequently reported response was that the IAAP member received formal training...
<table>
<thead>
<tr>
<th>Task Description</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>Min.-Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handle incoming/outgoing telephone calls</td>
<td>204</td>
<td>4.71</td>
<td>0.76</td>
<td>1-5</td>
</tr>
<tr>
<td>Maintain records/files</td>
<td>204</td>
<td>4.70</td>
<td>0.69</td>
<td>0-5</td>
</tr>
<tr>
<td>Maintain a calendar</td>
<td>204</td>
<td>4.65</td>
<td>0.87</td>
<td>0-5</td>
</tr>
<tr>
<td>Create a word processing document</td>
<td>204</td>
<td>4.63</td>
<td>0.90</td>
<td>0-5</td>
</tr>
<tr>
<td>Process incoming/outgoing mail</td>
<td>204</td>
<td>4.39</td>
<td>1.29</td>
<td>0-5</td>
</tr>
<tr>
<td>Compose correspondence</td>
<td>204</td>
<td>4.18</td>
<td>1.02</td>
<td>0-5</td>
</tr>
<tr>
<td>Requisition/order supplies</td>
<td>204</td>
<td>4.02</td>
<td>1.36</td>
<td>0-5</td>
</tr>
<tr>
<td>Perform tickler follow-up</td>
<td>204</td>
<td>3.93</td>
<td>1.57</td>
<td>0-5</td>
</tr>
<tr>
<td>Schedule meetings</td>
<td>204</td>
<td>3.87</td>
<td>1.36</td>
<td>0-5</td>
</tr>
<tr>
<td>Prepare meeting materials</td>
<td>204</td>
<td>3.71</td>
<td>1.32</td>
<td>0-5</td>
</tr>
<tr>
<td>Maintain office equipment</td>
<td>204</td>
<td>3.65</td>
<td>1.46</td>
<td>0-5</td>
</tr>
<tr>
<td>Create a spreadsheet</td>
<td>204</td>
<td>3.60</td>
<td>1.59</td>
<td>0-5</td>
</tr>
<tr>
<td>Handle travel arrangements</td>
<td>204</td>
<td>3.39</td>
<td>1.81</td>
<td>0-5</td>
</tr>
<tr>
<td>Prepare expense reports</td>
<td>204</td>
<td>3.14</td>
<td>1.67</td>
<td>0-5</td>
</tr>
<tr>
<td>Train others</td>
<td>204</td>
<td>3.13</td>
<td>1.42</td>
<td>0-5</td>
</tr>
<tr>
<td>Perform receptionist duties</td>
<td>204</td>
<td>3.13</td>
<td>1.77</td>
<td>0-5</td>
</tr>
<tr>
<td>Search a database for information</td>
<td>204</td>
<td>3.11</td>
<td>1.62</td>
<td>0-5</td>
</tr>
<tr>
<td>Make equipment purchase recommendations</td>
<td>204</td>
<td>2.93</td>
<td>1.68</td>
<td>0-5</td>
</tr>
<tr>
<td>Import clip art into documents</td>
<td>204</td>
<td>2.83</td>
<td>1.66</td>
<td>0-5</td>
</tr>
<tr>
<td>Take notes at meetings</td>
<td>204</td>
<td>2.62</td>
<td>2.15</td>
<td>0-5</td>
</tr>
<tr>
<td>Write a formula in a spreadsheet</td>
<td>204</td>
<td>2.53</td>
<td>1.74</td>
<td>0-5</td>
</tr>
<tr>
<td>Create a database</td>
<td>204</td>
<td>2.36</td>
<td>1.68</td>
<td>0-5</td>
</tr>
<tr>
<td>Supervise others</td>
<td>204</td>
<td>2.15</td>
<td>1.89</td>
<td>0-5</td>
</tr>
<tr>
<td>Troubleshoot computer problems</td>
<td>204</td>
<td>2.03</td>
<td>1.71</td>
<td>0-5</td>
</tr>
<tr>
<td>Create a desktop presentation slide show</td>
<td>204</td>
<td>1.98</td>
<td>1.71</td>
<td>0-5</td>
</tr>
<tr>
<td>Create a desktop publishing document</td>
<td>204</td>
<td>1.93</td>
<td>1.71</td>
<td>0-5</td>
</tr>
<tr>
<td>Transcribe dictation</td>
<td>204</td>
<td>1.85</td>
<td>1.89</td>
<td>0-5</td>
</tr>
<tr>
<td>Install software on computer</td>
<td>204</td>
<td>1.61</td>
<td>1.68</td>
<td>0-5</td>
</tr>
</tbody>
</table>

Note: Mean score based on six-point Likert scale (0=Never, 1=Very Rarely, 2=Rarely, 3=Occasionally, 4=Frequently, 5=Very Frequently).

Table 4.15: Mean Ratings of Perceived Level of Individual Job Responsibilities by the International Association of Administrative Professionals

87
sessions on the use of electronic communications outside the organization (31%). A higher percentage indicates a higher perceived level of electronic communications training.

**Level of Proximity to Electronic Communications**

Of the 204 members of the IAAP who use electronic communications at work, 97% use electronic communications at their own workstations, and 3% use electronic communications at a nearby/convenient workstation, as shown in Figure 4.3.

<table>
<thead>
<tr>
<th>Type of Electronic Communications Training</th>
<th>Training Received</th>
<th>No Training Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Informal training inside organization</td>
<td>130  64</td>
<td>74     36</td>
</tr>
<tr>
<td>Formal training inside organization</td>
<td>121  59</td>
<td>83     41</td>
</tr>
<tr>
<td>Informal training with a technical support person inside organization</td>
<td>112  55</td>
<td>92     45</td>
</tr>
<tr>
<td>Formal training inside organization segmented by topic (e.g., using e-mail, the World Wide Web, etc.)</td>
<td>104  51</td>
<td>100   49</td>
</tr>
<tr>
<td>Learned by oneself</td>
<td>97   48</td>
<td>107    52</td>
</tr>
<tr>
<td>Formal training outside organization</td>
<td>63   31</td>
<td>141    69</td>
</tr>
</tbody>
</table>

Table 4.16: Frequency of Level of Electronic Communications Training by the International Association of Administrative Professionals (n=204)
Perceived Level of Relative Advantage

Perceived level of relative advantage was determined by summing the scores of nine items using a seven-point Likert-scale about the IAAP's perceptions of the relative advantage of using electronic communications at work. As illustrated in Table 4.17, the mean rating was 43.43. Scores could range between 0-54; the higher the score, the higher the perceived level of relative advantage.

<table>
<thead>
<tr>
<th>Population</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>Min.-Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Association of Administrative Professionals</td>
<td>196</td>
<td>43.43</td>
<td>7.43</td>
<td>4-54</td>
</tr>
</tbody>
</table>

Note: Mean score of nine items based on a 7-point Likert scale.

Table 4.17: Mean Perceived Level of Relative Advantage Score of the International Association of Administrative Professionals
The most highly rated perceived relative advantage was that using electronic communications allows the IAAP member to disseminate information quickly, with a mean of 5.23; the lowest rated perceived relative advantage was that locating files on the World Wide Web is easy, with a mean of 3.70. Table 4.18 presents the perceived level of relative advantage of the nine items related to using electronic communications at work.

<table>
<thead>
<tr>
<th>Relative Advantage Items</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>Min.-Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using electronic communications allows me to disseminate information quickly.</td>
<td>202</td>
<td>5.23</td>
<td>0.91</td>
<td>0-6</td>
</tr>
<tr>
<td>Using electronic communications provides labor-saving benefits over earlier methods.</td>
<td>200</td>
<td>5.18</td>
<td>0.90</td>
<td>0-6</td>
</tr>
<tr>
<td>Using e-mail reduces &quot;phone tag.&quot;</td>
<td>203</td>
<td>5.15</td>
<td>0.98</td>
<td>0-6</td>
</tr>
<tr>
<td>Using electronic communications allows me to disseminate information cost effectively.</td>
<td>202</td>
<td>5.14</td>
<td>1.04</td>
<td>0-6</td>
</tr>
<tr>
<td>Using e-mail to transmit documents is faster than other methods (e.g., fax, regular mail).</td>
<td>203</td>
<td>5.08</td>
<td>1.22</td>
<td>0-6</td>
</tr>
<tr>
<td>Using electronic communications provides more current information than paper resources.</td>
<td>202</td>
<td>5.01</td>
<td>1.07</td>
<td>0-6</td>
</tr>
<tr>
<td>Using electronic communications reduces time zone frustrations.</td>
<td>203</td>
<td>4.82</td>
<td>1.57</td>
<td>0-6</td>
</tr>
<tr>
<td>Locating information in my organization's online files is easy.</td>
<td>203</td>
<td>3.97</td>
<td>1.93</td>
<td>0-6</td>
</tr>
<tr>
<td>Locating information on the World Wide Web is easy.</td>
<td>201</td>
<td>3.70</td>
<td>2.02</td>
<td>0-6</td>
</tr>
</tbody>
</table>

Note: Mean score based on a seven-point Likert scale (6=Strongly Agree, 5=Agree, 4=Somewhat Agree, 3=Somewhat Disagree, 2=Disagree, 1=Strongly Disagree, 0=Do Not Use.

Table 4.18: Mean Level of Perceived Relative Advantage by the International Association of Administrative Professionals
Description of the Personal Characteristics of the International Association of Administrative Professionals

Age

The mean age of the sample population is 46.5 years, as presented in Table 4.19.

<table>
<thead>
<tr>
<th>Population</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>Min.-Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Association of Administrative Professionals</td>
<td>219</td>
<td>46.5</td>
<td>10.32</td>
<td>20-77</td>
</tr>
</tbody>
</table>

Table 4.19: Mean Age of the International Association of Administrative Professionals

Level of Formal Education

Of the 228 members of the IAAP, 66% have a high school diploma or equivalent, and 34% have a college degree, as shown in Figure 4.4.

![Bar Chart](Figure 4.4: Formal Education of the International Association of Administrative Professionals (n=228))
CPS® Rating

Of the 228 members of the IAAP, 28% hold the Certified Professional Secretary (CPS®) rating, and 72% do not hold the CPS® rating, as shown in Figure 4.5.

![Bar chart showing CPS® Rating and No CPS Rating](image)

Figure 4.5: CPS® Rating of the International Association of Administrative Professionals (n=228)

Number of Household Members at Home Using Electronic Communications at Home

Number of household members at home using electronic communications was a two-part question. Respondents were requested to check categories of household members using electronic communications at home. The respondents were also requested to fill in the numbers of school-age children, adult children, and adults other than a spouse or significant other who are home users of electronic communications. A respondent could also check a box indicating that no one uses electronic communications at home. As shown in Table 4.20, 57% of administrative office professionals personally use electronic communications at home. No one uses electronic communications at home in 39% of the households.
<table>
<thead>
<tr>
<th>Household Users at Home*</th>
<th>Use at Home</th>
<th>Do Not Use at Home</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td><strong>Self</strong></td>
<td>129</td>
<td>57</td>
</tr>
<tr>
<td><strong>Spouse/Significant Other</strong></td>
<td>81</td>
<td>36</td>
</tr>
<tr>
<td><strong>School-Age Children</strong></td>
<td>37</td>
<td>16</td>
</tr>
<tr>
<td><strong>Adult Children</strong></td>
<td>36</td>
<td>16</td>
</tr>
<tr>
<td><strong>Other Adults</strong></td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td><strong>No One Uses at Home</strong></td>
<td>87</td>
<td>39</td>
</tr>
</tbody>
</table>

Table 4.20: Frequency of Number of Household Members Using Electronic Communications at Home by the International Association of Administrative Professionals (n=228)

The mean number of electronic communications users in an administrative office professional's household is 1.28, with a median of 1.00, as presented in Table 4.21.

<table>
<thead>
<tr>
<th>Population</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>Min.- Max</th>
<th>Median</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Association of Administrative Professionals</td>
<td>226</td>
<td>1.28</td>
<td>1.24</td>
<td>0-5</td>
<td>1.00</td>
<td>.00</td>
</tr>
</tbody>
</table>

Table 4.21: Mean Number of Users at Home of the International Association of Administrative Professionals
Level of Household Use at Home

Level of household use at home was determined as the total numbers of hours all members of an administrative office professional’s household spends online at home in a week. As shown in Table 4.22, an IAAP member’s household spends a mean of 6.07 hours online each week, with a median of 2.0 hours per week.

<table>
<thead>
<tr>
<th>Population</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>Min.-Max</th>
<th>Median</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Association of Administrative Professionals</td>
<td>225</td>
<td>6.07</td>
<td>10.72</td>
<td>0-84</td>
<td>2.00</td>
<td>.00</td>
</tr>
</tbody>
</table>

Table 4.22: Mean Level of Household Use at Home—Weekly Hours Online of the International Association of Administrative Professionals

Relationships between the Level of Use of Electronic Communications and Environmental Characteristics

Perceived Level of Access

As presented in Table 4.23, a statistically significant positive, substantial association ($r=.54$) was found between perceived level of access and level of use of electronic communications. Administrative office professionals who had a higher mean score for perceived level of access tended to have a higher level of use of electronic communications than those administrative office professionals with a lower mean perceived level of access score.
Number of Employees in Organization

As presented in Table 4.23, a negative, negligible association (r = -.04) was found between number of employees in the organization and level of use of electronic communications. A statistically significant association was not found between number of employees in the organization and level of use of electronic communications.

<table>
<thead>
<tr>
<th>Environmental Characteristics</th>
<th>Level of Use of Electronic Communications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Level of Access</td>
<td>.54**</td>
</tr>
<tr>
<td>Number of Employees in Organization</td>
<td>-.04</td>
</tr>
<tr>
<td>Perceived Level of Participative Management</td>
<td>.19**</td>
</tr>
<tr>
<td>Perceived Level of Job Responsibility</td>
<td>.44**</td>
</tr>
<tr>
<td>Level of Electronic Communications Training</td>
<td>.21**</td>
</tr>
<tr>
<td>Level of Proximity to Electronic Communications</td>
<td>-.24**</td>
</tr>
<tr>
<td>Perceived Level of Relative Advantage</td>
<td>.48**</td>
</tr>
</tbody>
</table>

**p<.01

Table 4.23: Correlations Between Level of Use of Electronic Communications and Environmental Characteristics Associated with an Administrative Office Professional's Decision to Use Electronic Communications

Perceived Level of Participative Management

As presented in Table 4.23, a statistically significant positive, low association (r=.19) was found between perceived level of participative management and level of use of electronic communications. Administrative office professionals who had a higher
mean score for perceived level of participative management tended to have a higher level of use of electronic communications than those administrative office professionals with a lower mean perceived level of participative management score.

**Perceived Level of Job Responsibility**

As presented in Table 4.23, a statistically significant positive, moderate association \( r = .44 \) was found between perceived level of job responsibility and level of use of electronic communications. Administrative office professionals who had a higher mean score for perceived level of job responsibility tended to have a higher level of use of electronic communications than those administrative office professionals with a lower mean perceived level of job responsibility score.

**Level of Electronic Communications Training**

As presented in Table 4.23, a statistically significant positive, low association \( r = .21 \) was found between level of electronic communications training and level of use of electronic communications. Administrative office professionals who had a higher mean score for level of electronic communications training tended to have a higher level of use of electronic communications than those administrative office professionals with a lower mean level of electronic communications training score.

**Level of Proximity to Electronic Communications**

As presented in Table 4.23, a statistically significant negative, low association \( r = -.24 \) was found between level of proximity to electronic communications and level of
use of electronic communications. Administrative office professionals who use electronic communications away from their own workstations tended to have a lower level of use of electronic communications than those administrative office professionals with a closer proximity to electronic communications.

Perceived Level of Relative Advantage

As presented in Table 4.23, a statistically significant positive, moderate association ($r=0.44$) was found between perceived level of relative advantage and level of use of electronic communications. Administrative office professionals who had a higher mean score for perceived level of relative advantage tended to have a higher level of use of electronic communications than those administrative office professionals with a lower mean perceived level of relative advantage score.

Relationships between the Level of Use of Electronic Communications and Personal Characteristics

Age

As presented in Table 4.24, a negative, negligible association ($r=-0.09$) was found between age and level of use of electronic communications. A statistically significant association was not found between age and level of use of electronic communications.

Level of Formal Education

As presented in Table 4.24, a statistically significant, low association ($r=0.18$) was found between level of formal education and level of use of electronic communications.
Table 4.24: Correlations Between Level of Use of Electronic Communications and Personal Characteristics Associated with an Administrative Office Professional's Decision to Use Electronic Communications

<table>
<thead>
<tr>
<th>Personal Characteristics</th>
<th>Level of Use of Electronic Communications r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.09</td>
</tr>
<tr>
<td>Level of Formal Education&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.18**</td>
</tr>
<tr>
<td>CPS® Rating&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.15*</td>
</tr>
<tr>
<td>Number of Household Members Using Electronic Communications at Home</td>
<td>.19**</td>
</tr>
<tr>
<td>Level of Household Use at Home</td>
<td>.15*</td>
</tr>
</tbody>
</table>

<sup>a</sup>Point Biserial  
**p<.01  
*p<.05

Administrative office professionals with a college degree (n=78) had a mean level of use score of 16.21 (S.D.=8.13), while administrative office professionals with a high school diploma or equivalent (n=149) had a mean level of use score of 13.05 (S.D.=8.16). Administrative office professionals who had a higher level formal education tended to have a higher level of use of electronic communications than those administrative office professionals with a lower level of formal education.

**CPS® Rating**

As presented in Table 4.24, a statistically significant, low association (r=.15) was found between holding a CPS® rating and level of use of electronic communications.
Holders of the CPS® rating (n=63) had a mean level of use score of 16.22 (S.D.=6.57), while administrative office professionals without the CPS® rating (n=165) had a mean level of use score of 13.42 (S.D.=8.77). Administrative office professionals who hold a CPS® rating tended to have a higher level of use of electronic communications than those administrative office professionals who do not hold a CPS® rating.

**Number of Household Members Using Electronic Communications at Home**

As presented in Table 4.24, a statistically significant positive, low association (r=.19) was found between number of household members using electronic communications at home and level of use of electronic communications. Figure 4.6 presents the number of household members using electronic communications at home: No Users (n=87), One User (n=41), Two Users (n=54), and Three or More Users (n=44).

![Bar Chart](Image)

Figure 4.6: Number of Household Members Using Electronic Communications at Home

Administrative office professionals who had more household members using electronic communications at home tended to have a higher level of use of electronic
communications than those administrative office professionals who had fewer household members at home using electronic communications.

**Level of Household Use at Home**

As presented in Table 4.24, a statistically significant positive, low association ($r=.15$) was found between household use at home and level of use of electronic communications. Administrative office professionals whose households spent more mean hours online tended to have a higher level of use of electronic communications than those administrative office professionals with a lower mean number of hours online.

**Regression of Level of Use of Electronic Communications on Selected Factors**

Multiple regression was used to determine the variance in the level of use of electronic communications explained by environmental and personal characteristics. After preliminary examination of all variables, ten variables associated with an individual's decision to use electronic communications on the job were entered stepwise. The ten variables are total users at home, perceived level of relative advantage, level of electronic communications training, perceived level of job responsibility, perceived level of access, perceived level of household use at home—hours online, CPS® rating, level of formal education, age, and number of employees in organization. Four of the ten variables were statistically significant; namely, perceived level of access, perceived level of job responsibility, perceived level of relative advantage, and number of employees in organization.
<table>
<thead>
<tr>
<th></th>
<th>$R^2$</th>
<th>$R^2$ change</th>
<th>$b$</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Level of Access</td>
<td>.27</td>
<td>.27</td>
<td>2.16</td>
<td>6.18</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Perceived Level of Job Responsibility</td>
<td>.36</td>
<td>.09</td>
<td>.11</td>
<td>5.17</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Perceived Level of Relative Advantage</td>
<td>.42</td>
<td>.05</td>
<td>.26</td>
<td>4.72</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Number of Employees in Organization</td>
<td>.46</td>
<td>.04</td>
<td>-3.75</td>
<td>-3.77</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Constant</td>
<td></td>
<td></td>
<td>-12.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Standard Error=5.19  
$R^2=.46$  
For Model: $F=39.24; p<.001$  
Adjusted $R^2=.447$

Table 4.25: Regression of Level of Use of Electronic Communications on Perceived Level of Relative Advantage, Perceived Level of Job Responsibility, Perceived Level of Access, and Number of Employees in the Organization (n=189)

As presented in Table 4.25, perceived level of access explained 27% of the variance in the level of use of electronic communications scores. Perceived level of job responsibility explained an additional 9% of the variance in the level of use of electronic communications scores. Perceived level of relative advantage explained an additional 5% of the variance in the level of use of electronic communications scores. Number of employees in the organization explained an additional 4% of the variance in the level of use of electronic communications scores. The four variables explain 45% of the variance in the administrative office professional's use of electronic communications.

**Synthesis of Open-Ended Responses**

The respondents were requested to provide comments on using electronic communications. Of the participants in the study (n=228), 103 (45%) provided
comments. The comments were categorized into six themes; namely, Relative Advantage at Work, Access and Confidentiality Issues, Home or Personal Use, Interpersonal Contact, Education or Training Issues, and Keeping Up or Acknowledging the Future. Some of examples of the respondents' comments are provided under each theme area. Additional comments are located in Appendix G.

Relative Advantage at Work

Some of the responses provided included:

- Since I have been using e-mail at work, I have been more productive and spend less time tracking individuals down. I don't know how we have lived without it.
- I believe that used correctly, effectively, and wisely, electronic communications can, does, and will produce more work of a higher quality in a lesser amount of time.
- Using electronic communications is advantageous only if everyone uses them within the organization; if they do not, the system fails and fosters redundancy.
- It is quick, cost effective, and easy to use.
- It's a way of receiving information more quickly. It helps me to be more efficient.
- I love using electronic communications. It has helped me with my job in many ways. I also find it very helpful to track information by sending documents and tagging them "return receipt requested." That way, I know the
individual received the message/note and I have proof of date and time. All of this is done in a matter of seconds.

- I wouldn't want to work without it now!
- It's convenient, easy to use, and helpful.
- It saves the paper flow—quick and efficient transmittal of information that's needed—or requisitioning documents or brochures for clients of the firm. Saves time and money when video conferencing—lessens travel for interviews.
- It is a great tool. You can provide back up when people claim, "You never told me." I always request a delivery receipt when sending e-mail.
- The greatest advantage to electronic communications is that it saves time in reduced phone and walk-up interruptions. The greatest disadvantage is that formatting is often lost and the recipient receives a jumbled or unprofessional-looking document.
- Saves a tremendous amount of time and lets me read my e-mail when I have the time, versus answering phones all day. Best way to communicate in today's world!
- Wealth of information; easy to obtain.
- It's great when all systems are working, but a lot of "nonsense" is sent, too. I use the delete button frequently.
- Much faster than playing "phone tag."
- It's okay as long as people read their e-mail.
• It is a great way to keep in touch with associates that leave the company. You can always get in touch with them if necessary. Also, it is a great way to document conversation and track meetings. I also find it a great way to keep in touch with friends and family that live all over the world. Helps keep people together and communicating.

• Electronic communications has enabled me to correspond with people around the world in less time than it takes me to go for a cup of coffee! It is great. I correspond with book publishers and receive texts delivered to my office in a couple of days!

• E-mail is effective for me—however, I can't leave e-mail messages about time sensitive issues because not all users retrieve e-mail as frequently as they should.

• We use Microsoft Exchange at work, which I also use at home. Its features, such as Out of Office Assistant, are wonderful. If I am unable to get to work (sick, personal time, etc.), I can turn it on from home, people are notified, and they can either leave a message or contact another person covering that day. It's great! This way they know I'm not ignoring their e-mail.

• I like using electronic (e-mail) communications. I have a lot of success retrieving information from the available Web sites. That helps me in my daily duties—administrative support.

• Very useful—but all should work the same and be compatible. I have trouble downloading attachments from e-mail.
• A necessity in today's world—I love the idea of gradually reducing "papers." Why wasn't this sent by e-mail? I probably would have answered the same day, as e-mail seems to be a priority.

• In some respect I feel it is a great time saver, but some employees forget about their work and look up a lot of non-work information.

• This is a wonderful tool! To quickly find information or to disseminate information to one or a number of people is unbelievably easy.

• It seems that every day we move closer to using e-mail over other communications. We got along without this form for so long and now when something goes wrong and we can't use it, we are lost! It definitely saves time and money. It is very annoying when there are glitches with the service provider.

Access and Confidentiality Issues

Some of the responses provided included:

• Three other people in office have e-mail and Internet. I would like to have e-mail, Internet, and electronic fax.

• Some employees in our organization are using electronic communications, but it has not been installed for the office support staff. I feel the office support staff should have electronic communications.

• Not knowing who has access to your information!

• Regarding email, our system (CC Mail) lists everyone in the company (at our site) as having a mailbox, even though some don't have a computer. So at
times I have to follow up with a phone call and send the material by fax or mail.

- Most people do not know the proper etiquette when sending e-mail and wording can be misunderstood to cause problem/conflict. How "safe" are confidential messages?

**Home or Personal Use**

Some of the responses provided included:

- I think it's great! I wish everyone would use it. It should be as common in a household as peanut butter.

- Great way to keep in touch with family members; quicker than written communications.

- I really like to use it for personal email to family that is long distance and also friends that are too busy to correspond by mail or phone!

- In the process of going online at home and at the office!

- Since I have access to electronic communications at work, I have not connected on-line at home.

- It's great! I'm in the process of purchasing a computer at home with electronic communications.

- Cannot afford on-line service at this time—which I am working on acquiring as I believe the Web's information is essential for success in the future—professionally and personally (for myself and 2 children, 14 & 12).
• Interesting-challenging-speed. Hopefully cost for individual home use will decrease.
• I believe it unfairly excludes elderly folks or those in a moderate-income bracket who can't afford a PC or AOL, etc.
• If and when I retire, I may get into it at home, mainly because it sounds interesting.
• Very good tool. Plan to utilize the Internet in the home in the near future.
• After work I care absolutely nothing about electronic communications.
• Unfortunately, I spend so much time on the computer at work that I have trouble working on it at home.
• I don't use it at home because of all the wrong types of pages children can get into.
• I think it is a wonderful addition to my daily office tools, but do not believe I would ever want or need it in my home environment.

Interpersonal Contact

Some of the responses provided included:

• It is the future but will take a lot of the interpersonal contact out of society.
• When I received e-mail a few years ago, I did not use it very much. Being a secretary, I liked talking directly to the person.
• Having been in the workforce a good number of years now, I still have the desire to communicate person-to-person. I get more interaction from communicating person-to-person than from electronic communications.
Electronic communications serves well in most situations; however, there are times when I want to hear immediate response, experience body language, and observe inflections to better receive another's communication. I fear we will all be more comfortable with a box than with another human being.

Communication is a two-way street. Electronic communication does not promote that.

**Education or Training Issues**

Some of the responses provided included:

- Electronic communications is good as long as all of the users are informed and trained, preferable if the company you work for schedules training sessions or at least pays for a class for you to learn.

- I am not completely comfortable yet with electronic communications, but I feel I am learning more all the time. Having started on a manual typewriter, I've come a long way!

- I have a lot to learn. I just received the Internet at work. I look forward to this fast way to communicate with our customers.

- I strongly believe in educating anyone interested in learning-updating their skills in all areas of technology.

- I am glad kids are learning computer training early in school.

- Electronic communications is great, but don't just rely on electronic means. Faxing documents is usually quicker unless the recipient needs to edit a document on-line. Technology is great if reliable, but teach manual processes
also for those times when it can be more beneficial. Think for yourself—don't rely on a computer for all the answers—it's too easy to have a user error, etc., in a formula.

- I love working with it and very much so want to learn all I can on the use of it.
- I believe belonging to a professional group is a must—such as IAAP. IAAP, CPS, CAM ratings need to be promoted in the schools.

**Keeping Up or Acknowledging the Future**

Some of the responses provided included:

- I do not have it at the present time but know I will be forced to get online in order to keep up.

- Electronic communications are the future! There is no escaping the fact that electronic communications will continue to grow and be a part of everyday life.

- It is the way of the future and critical for all individuals to know and understand.

- Electronic communication, especial e-mail, is so amazing to me. To know you can send a message (and possibly get a response) to anywhere in the world is great. My only negative comment is that it's so hard to keep up with the many changes that occur.

- I enjoy it, but my eyes are worse sometimes. I'm sure it's the FUTURE!

- A must for someone in the workforce today, but we have barely begun to use electronic communications. I see great things coming in the future. A child
cannot begin soon enough to learn because all the future jobs will use
electronic communications in some form.
CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter is organized into six sections: summary of the study, research objectives, methodology, summary of findings, conclusions and recommendations, and need for further study.

Summary

Electronic communications have changed the way administrative office professionals perform their job duties. Previously, administrative office professionals prepared most correspondence on typewriters or word processors; postal workers subsequently delivered the letters to recipients one to many days later, depending on distance. It was necessary to consider the current time when placing long-distance calls to another time zone. Difficulties in reaching a party by telephone often led to an office sport known as "phone tag."

An e-mail message prepared on a computer and sent from an American office via the Internet typically arrives in a matter of minutes in the United States and in less than a day elsewhere in the world (Grimes & Kinkoph, 1997). The U.S. Commerce Department reports that more e-mail than snail mail was sent in 1997 (USA Today, March 17, 1999).
E-mail may allow workers to break the time-zone barrier by communicating with others during their own office hours without frustration and eliminate "phone tag."

Administrative office professionals use a variety of printed resources to locate information. The World Wide Web and organization intranets have the potential to supply up-to-date information with the click of a mouse button.

Rogers (1995) states that the diffusion of an innovation, such as electronic communications, takes place over time by communication among members of a social system. Electronic communications is an interactive technology and must have individuals who are regular users to perpetuate its use (Rogers, 1995).

There are two segments of a technological innovation, such as electronic communications. The hardware segment embodies the physical components; the software segment provides the information base. Technology clusters, or closely related distinguishable elements of technology, may be introduced as a package and lead to faster adoption (Rogers, 1995). Some of the elements of the Internet technology cluster include e-mail, the World Wide Web, USENET newsgroups, File Transfer Protocol, and Telnet (Grimes & Kinkoph, 1997). The Internet technology cluster may be easily segmented into separate components when training administrative office professionals to use electronic communications.

Whenever a new technology is introduced, it will be met with uncertainty about whether the innovation offers any advantages over the one it supersedes. Uncertainty is reduced by information about the perceived characteristics of an innovation, which later leads to a decision to adopt or reject the technology (Rogers, 1995). Administrative office professionals may engage in information-seeking activities and training in the use
of the components of electronic communications to weigh the advantages and
disadvantages of its use before making a decision to adopt or reject the new technology.

Research on diffusion indicates various factors are associated with an individual's
decision to adopt an innovation, including personal characteristics, the organization's
characteristics, access to the innovation, knowledge of the innovation, and perceptions of
relative advantage (Rogers, 1995).

The characteristics that explain differing rates of adoption are relative advantage,
compatibility, complexity, trialability, and observability (Rogers, 1995; Lionberger,
1960). Diffusion researchers indicate that individuals who perceive an innovation to
offer relative advantages over previous methods, compatibility with prior values or
practices, low complexity, an opportunity to try out the innovation on a limited basis, and
observe outcomes of using new technology are most likely to adopt the technology faster.

The purpose of this study was to describe the level of use of electronic
communications by administrative office professionals. In addition, the study sought to
determine differences, if any, in the environmental and personal characteristics associated
with the use of electronic communications by administrative office professionals. A
descriptive-correlational design was used to guide the objectives of the study and predict
an administrative office professional's level of use of electronic communications.

Research Objectives

The objectives of the study were as follows:

1. Describe the level of use of electronic communications by administrative office
   professionals.
2. Describe administrative office professionals on selected environmental characteristics: perceived level of access to electronic communications, number of employees in organization, perceived level of participative management, perceived level of job responsibility, level of electronic communications training, level of proximity to electronic communications, and perceived level of relative advantage.

3. Describe administrative office professionals on selected personal characteristics: age, level of formal education, CPS rating, number of household members using electronic communications at home, and level of household use at home.

4. Describe the relationships between the level of use of electronic communications and selected environmental characteristics: perceived level of access to electronic communications, number of employees in organization, perceived level of participative management, perceived level of job responsibility, level of electronic communications training, level of proximity to electronic communications, and perceived level of relative advantage.

5. Describe the relationships between the level of use of electronic communications and selected personal characteristics: age, level of formal education, CPS rating, number of household members using electronic communications at home, and level of household use at home.

6. Determine which selected factors explain the greatest amount of unique variance on the level of use of electronic communications. Selected factors are environmental characteristics and personal characteristics.
Methodology

The target and accessible population for this study were current Ohio professional members of the International Association of Administrative Professionals (IAAP), formerly known as Professional Secretaries International®—The Association for Office Professionals™ (PSI®). Professional members are identified by the IAAP as individual members, who are currently working as secretaries or other qualified office professionals, holders of a CPS® rating, or business education members.

An up-to-date list of names (N=1,560) was obtained from the international headquarters of the IAAP, located in Kansas City, Missouri, in September 1998 to control frame error. Krejcie and Morgan's (1970) table of sample sizes was used to establish the sample size (n=312). A systematic sampling design was used, and 20% of the population were selected by placing slips of paper numbered from 1-5 in a hat with one number drawn to determine the starting point on the membership list. Once the starting point was determined, every fifth name was selected for the study.

A researcher-designed questionnaire was used to acquire necessary data to address the objectives of the study. Content and face validity of the instrument were established by a panel of experts (n=7) and a field test sample (n=7) of administrative office professionals. The panel of experts assessed the questionnaire during and after development. The questionnaire was pilot tested by a sample of administrative office professionals (n=20) selected purposefully from the accessible population. Test-retest reliability was established using percent agreement calculations for the different sections of the instrument.
Summary of Findings

Objective 1. Describe the level of use of electronic communications by administrative office professionals.

The mean summated rating was 14.20, with a possible high score of 40, on the five-point scale indicating numbers of days per week eight components of electronic communications were used. Scores ranged from 0-34. The higher the score, the higher the level of use of electronic communications. The most frequently used component of electronic communications was e-mail, with a mean score of 4.15 days per week. Retrieving information from the World Wide Web ranked fourth, with a mean score of 1.91 days per week. The least frequently used component was authoring/editing/updating the organization's World Wide Web site, with a mean score of 0.21 days per week.

Objective 2. Describe administrative office professionals on selected environmental characteristics: number of employees in organization, perceived level of participative management, perceived level of job responsibility, level of electronic communications training, level of proximity to electronic communications, and perceived level of relative advantage.

Perceived level of access was high for three out of six components of electronic communications, as determined by the number of items checked from a list of six components. The most frequent responses were access to electronic mail (95%), a networked system accessible by organization employees only (89%), and the World
Wide Web (76%). The least frequent responses were access to Telnet (12%), USENET Newsgroups (17%), and File Transfer Protocol (22%).

Organizations ranged in size from 1-40,000. The mean number of employees was 1,337, the median was 250, and the mode was 1,000.

Perceived level of participative management was determined by the number of items checked from a list of five statements. Eighty-four percent of the respondents reported that the employer/organization had developed and communicated a mission statement. The least frequent response indicated that 64% of the respondents reported that the employer/organization provides an environment that fosters creativity.

The mean summated rating on perceived level of job responsibility was 90.75, with a possible high score of 140, on the six-point Likert scale from 0=Never to 5=Very Frequently indicating the frequency of performing 28 different tasks on the job. The higher the score, the higher the perceived level of job responsibility. Scores ranged from 38-133. The most frequently used component of electronic communications was e-mail, with a mean score of 4.15 days per week. The mean ratings of the most frequently performed job responsibilities are Handle Incoming/Outgoing Telephone Calls (4.71), Maintain Records/Files (4.70), and Create a Word Processing Document (4.63). The mean ratings of the least frequently performed job responsibilities are Install Software on Computer (1.61), Transcribe Dictation (1.85), and Create a Desktop Presentation Slide Show (1.98).

Perceived level of electronic communications training was determined by the number of items checked from a list of six statements. The most frequent response (64%) reported receiving informal training inside the organization. The least frequent response
(31%) reported receiving formal training outside the organization. Of the respondents, 48% indicated that they learned electronic communications on their own.

Level of proximity was determined by the location where administrative office professionals use electronic communications. Of the respondents, 97% use electronic communications at their own workstations, and 3% use electronic communications at a nearby/convenient location.

The mean summated rating on the perceived level of relative advantage for using electronic communications was 43.43, with a possible high score of 54, on the seven-point Likert scale, with scores ranging from 0=Strongly Disagree to 6=Strongly Agree on individual items. Total scores ranged from 4-54. The higher the score, the higher the perceived level of relative advantage for using electronic communications. The highest individual mean item scores indicate that administrative office professionals perceive electronic communications as providing a great degree of relative advantage, especially in the following areas: disseminating information quickly (5.23), providing labor-saving benefits (5.18), reducing "phone tag" (5.15), reducing costs of disseminating information (5.14), speeding transmittal of documents (5.08), and providing more current information (5.01). The lowest perceived relative advantage was found in locating information on the World Wide Web easily (3.70), locating information from the organization's intranet easily (3.97) and reducing time zone frustrations (4.82).

Objective 3. Describe administrative office professionals on selected personal characteristics: age, level of formal education, CPS rating, number of household members using electronic communications at home, and level of household use at home.

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The mean age of respondents was 46.5 years. Respondents ranged in age from 20 to 77 years. Of the respondents, 28% hold the CPS® rating, and 72% do not hold the CPS® rating; 66% have a high school diploma or equivalent, and 34% have a college degree.

Within households, 39% reported that no one at home uses electronic communications, 18% have one user, 24% have two users, and 19% have three or more users. Fifty-seven percent of respondents reported personal use of electronic communications at home. The mean level of household use at home is 6.07 weekly hours online.

**Objective 4.** Describe the relationships between level of use of electronic communications and selected environmental characteristics: number of employees in organization, perceived level of participative management, perceived level of job responsibility, level of electronic communications training, level of proximity to electronic communications, and perceived level of relative advantage.

Pearson product moment and point bi-serial correlation coefficients were used to reveal the statistically significant associations between level of use of electronic communications and selected factors.

The data showed a statistically significant, low association exists for perceived level of participative management, level of electronic communications training, and level of proximity to electronic communications and the level of use of electronic communications. A statistically significant, moderate association exists for perceived level of job responsibility and perceived level of relative advantage and the level of use
of electronic communications. A statistically significant, substantial association exists for perceived level of job responsibility and the level of use of electronic communications.

Objective 5. Describe the relationships between level of use of electronic communications and selected personal characteristics: age, level of formal education, CPS rating, number of household members using electronic communications at home, and level of household use at home.

Pearson product moment and point bi-serial correlation coefficients were used to reveal the statistically significant associations between level of use of electronic communications and selected factors.

The data showed a statistically significant, low association exists for level of formal education, CPS rating, number of household members using electronic communications at home, and level of household use at home and the level of use of electronic communications.

Objective 6. Determine which selected factors explain the greatest amount of unique variance on the level of use of electronic communications. Selected factors are environmental characteristics and personal characteristics.

Selected factors explaining the unique variance in electronic communications use were perceived level of access (27%), perceived level of job responsibility (9%), perceived level of relative advantage (5%), and number of employees in organization (4%).
Conclusions

Conclusions and recommendations of the study may be generalized to the population of the International Association of Administrative Professionals in Ohio. The following conclusions were drawn, based upon the study:

1. Administrative office professionals in Ohio use electronic communications as a routine part of their jobs. The relatively few nonusers are what Rogers (1995) would term as "laggards." The electronic communications use finding is consistent with a study by Davis (1997), which found that over 90% of companies belonging to the Information Industry Association use the Internet. The electronic communications use finding contrasts the study of Porter (1997), which found that Ohio State University Extension educators rarely or occasionally use the Internet on the job.

The Internet is relatively new, with its birth in 1969 as a military tool and in the 1980s as a link for research and academic communities. The Internet did not appear in the mainstream until the early 1990s (LaQuey & Ryer, 1993). The diffusion of electronic communications at work took place in a relatively short period of time and is consistent with the five stages of the innovation process—agenda setting, matching, redefining/restructuring, clarifying, and routinizing—defined by Rogers' (1995).

2. Administrative office professionals in Ohio use electronic communications at work mostly for e-mail, transmitting files/documents, and accessing the organization's internal network. Activities related to using the resources of the World Wide Web and search engines to locate information on the World Wide Web took place less than two days per week. Very few administrative office professionals reported reading/posting to USENET newsgroups or engaging in activities to author/edit/update the organization's...
intranet or World Wide Web site. However, it is possible that responsibilities for maintenance of the organization's intranet site or World Wide Web site rests with an employee hired for those specific duties.

The relatively low level of use findings are in agreement with Rogers (1995) and Lionberger (1960) whose studies identified characteristics of an innovation that explain varying rates of adoption. Administrative office professionals use e-mail almost daily. The format of an e-mail message is similar to an interoffice memorandum, which may be perceived as compatible with prior values. Porter (1997) found that Ohio State University Extension educators were most proficient with e-mail. Davis (1997) found that members of the Information Industry Association were most proficient with research/information searches, advertising, and correspondence.

Using a search engine to locate information on the World Wide Web may be perceived as a more complex operation, resulting in a slower rate of adoption. The faster adoption of some of the electronic communications activities, such as using e-mail, have occurred because it was possible to segment each activity and adopt them one at a time, as suggested by Lionberger (1960).

3. Administrative office professionals in Ohio have access to e-mail, an intranet, and the World Wide Web. The low percentage of reported access to FTP and USENET newsgroups may be misleading, as these components of electronic communications are available through the World Wide Web, although some organizations may block access to USENET. The respondents may have been unaware of their access to these components. The questionnaire did provide an opportunity for the administrative office professional to indicate unfamiliarity with various components of electronic
communications. Knowledge about the existence or use of FTP or USENET newsgroups may increase level of use of electronic communications for administrative office professionals.

4. The number of employees in organizations in which administrative office professionals work is not significantly associated with level of use of electronic communications. The number of employees finding is in contrast to Rogers (1995), who states that organization size is positively related to innovativeness, and earlier adopters have larger units than later adopters. The number of employees finding is consistent with Davis (1997), who found that half of the respondents from member companies of the Information Industry Association employed fewer than 100 individuals.

5. Administrative office professionals perceive themselves as having an important role in management decisions. The perception of participative management finding is consistent with studies by Rogers (1995) and Griffin (1990) relative to decentralized organizations.

6. In Ohio, administrative office professionals have many job responsibilities. Their expanded job responsibilities include electronic communications, which is in agreement with a study by Professional Secretaries International® (Benchmarking the Profession: 1997 PSI Membership Profile). Level of use of electronic communications increases as the perceived level of job responsibility increases, which is consistent with studies by Rogers (1995). Davis (1997) states that "incorporating technology into the workplace broadens the scope of jobs and redefines responsibilities for workers."

7. Administrative office professionals in Ohio do not have a very high level of training in the use of electronic communications. Porter (1997) found that Ohio State
University Extension educators are lacking in skill proficiency to use the Internet. The level of training finding supports Rogers' (1995) research that found that complexity of an innovation is negatively related to its rate of adoption. Davis (1997) states that workers must be educated to meet the changing needs in the workforce.

Half of the administrative office professionals learned electronic communications on their own, which represents a great degree of intrinsic motivation to learn technology and incorporate new technology into their daily tasks. Learning technology on one's own represents trialability on a personal level. The level of electronic communications training finding is consistent with Rogers' (1995) definition of trialability, which is experimenting with an innovation on a limited basis, or dividing the technology into segments that can be phased in over time. Rogers states that trialability leads to adoption.

Administrative office professionals who hold a college degree have a slightly higher level of use of electronic communications than those who hold a high school education or equivalent. The level of formal education finding is consistent with previous studies that found more years of formal education is positively related to early adoption (Rogers, 1995). The finding also supports studies by Mitchell (1994), who identified a "techthusiast" as a person who tended to have at least 14 years of formal education.

Electronic communications is a complex technology, and the level of training in the use of electronic communications findings suggest that administrative office professionals would benefit from more structured, in-depth training. Porter (1997) recommended giving more information and training on the use of the Internet to Ohio State University Extension educators. Increasing the knowledge base for electronic
communications use would likely raise the level of use of electronic communications for administrative office professionals.

Kerka (1994) stated that technology education is a significant part of formal education at the secondary and postsecondary level. Smith (1995) commented that in order to take advantage of the capabilities of electronic communication and interactive instructional technologies in the classroom "will require profound changes in the roles of teachers, students, and schools. Instead of being the repository of knowledge, teachers will be guides who help students navigate through electronically accessible information."

Secondary and postsecondary schools are in a position to provide comprehensive training once the necessary equipment and connections have been established. The results of this study may be of interest to school districts, community colleges, and other postsecondary training facilities; business, technology, and adult education instructors; and the state department of education, all of who may have an interest in preparing future administrative office professionals. The information from this study may help guide decisions about course offerings, curriculum development, equipment and software purchases, and employment of instructional staff.

The International Association of Administrative Professionals may be interested in the results of the study. The IAAP, as a professional organization committed to delivering educational programs to promote professional development, may be in a position to help its members develop proficiency in electronic communications use through meeting programs and workshops. The results of the study may guide the IAAP in developing specific program and workshop topics to offer its members and authoring articles to appear in its publications and on its World Wide Web site.
8. Administrative office professionals in Ohio who use electronic communications at work are using it at their own workstations. The proximity finding is consistent with a study by Porter (1997) that found that most of the Ohio State University Extension educators have Internet access at work. The convenience of direct access to electronic communications results in a higher level of use, which is consistent with previous studies by Rogers (1995). The level of proximity finding was in contrast with a study by Davis (1997), who found that only half had access to the Internet within the company.

9. In Ohio, administrative office professionals have a high level of perceived relative advantage for using electronic communications, especially if its use will cut costs, save labor, increase speed, or provide convenience over other methods. The perceived relative advantage findings are consistent with an earlier study by Porter (1997), which found that Ohio State University Extension educators had a somewhat positive perception of the Internet and may result in persuading others within Extension to use the Internet (Porter, 1997; Rogers, 1995). The perceived relative advantage findings support Rogers' (1995) studies, which identified a number of types of relative advantage that explain varying rates of adoption.

10. Age of administrative office professionals is not significantly associated with level of use of electronic communications in Ohio. Less than one-quarter of the IAAP members in Ohio are under age 40; two-thirds fall in the 40-to-59 age group. Younger and older administrative office professionals use electronic communications to perform their job duties. The age finding confirms Rogers' (1995) studies that found no differences between earlier and later adopters with regard to age. The finding contradicts
Mitchell (1994), who stated that "techthusiasts" tend to have a median age of 38. The administrative office professionals had a median age of 48.

11. In Ohio, administrative office professionals who hold a CPS® rating have a slightly higher level of use of electronic communications than those who do not hold a CPS® rating. The CPS® rating finding supports previous studies that found early adopters have higher aspirations than later adopters (Rogers, 1995). The CPS® examination includes a section on demonstrating office technology (IAAP World Wide Web site, 1998).

12. Administrative office professionals in Ohio tend to have a slightly higher level of use of electronic communications if there is electronic communications use at home by the administrative office professional and/or others in the household. A substantial number of administrative office professionals reported that no one at home uses electronic communications, which indicates that the diffusion process of electronic communications use at home is not complete. Comments by several respondents indicated plans to purchase a computer and/or go online in the near future. Less than half of the administrative office professionals' families have at least two members who use electronic communications at home. Porter (1997) found that 47% of Ohio State University Extension educators access to the Internet at home. The level of household use finding may be related to a 1994 industry survey that found households consisting of married couples with children under age 18 accounted for 44% of the home computer market (Crispell, 1994). The U.S. Commerce Department reports that U.S. consumers purchased more computers than automobiles in 1997 (USA Today, March 17, 1999).
13. The household members of administrative office professionals in Ohio spend almost one hour per day online. The level of household use finding confirms previous studies where early adopters were found to be more highly interconnected through interpersonal networks than later adopters (Rogers, 1995). The level of household use finding is consistent with a study by Kaye (1996), who found a strong positive relationship between amount of time World Wide Web users spend online each week and social interaction motivation associated with Web use. As more families purchase computers and go online, level of use may increase in the future.

14. Level of electronic communications use increases with greater perceived level of access, perceived level of job responsibility, perceived level of relative advantage, and number of employees in the organization. The Ohio administrative office professionals who are characterized as having greater perceived level of access, perceived level of job responsibility, perceived level of relative advantage, and number of employees in the organization will be more likely to have a greater level of use of electronic communications.

15. Level of perceived access to electronic communications explains the greatest amount of variance in the level of use of electronic communications. Ohio administrative office professionals who perceive themselves to have more components of electronic communications available are most likely to use electronic communications.

Recommendations

1. The high use of electronic communications on the job points to the need for secondary and postsecondary schools to equip classrooms to provide students with
adequate training to communicate with others electronically in the workplace. The equipment consists of computers, software, and the connection needed to establish electronic communications, which is consistent with previous studies by Rogers (1995) identifying hardware and software components that are an integral part of technological innovations. The high use of electronic communications in the workplace should be of concern to school districts, community colleges, and other postsecondary training facilities; business, technology, and adult education instructors; and the state department of education, all of whom may have an interest in preparing future administrative office professionals. The information from this study may help guide decisions about course offerings, curriculum development, future equipment and software purchases, and employment of instructional staff so that future administrative office professionals are provided with electronic communications skills.

2. The level of electronic communications training finding indicates a need for more comprehensive training in the use of electronic communications, both in the workplace and prior to entering the workforce. Porter (1997) stated that Internet training services need to be a top priority. Within the workplace, corporate trainers may be interested in the results of this study when making determinations as to the depth and breadth of future in-house electronic communications training for administrative office professionals.

3. The level of use of electronic communications and level of electronic communications training findings indicate a need for the IAAP to provide ongoing services to its members to increase their knowledge base of electronic communications. The information may be conveyed to its members through articles in their publications.
Need for Further Study

Based on the findings of this research study and the literature review relating to the level of use of electronic communications by administrative office professionals, the researcher makes the following recommendations for further study.

1. There is a need to further investigate the reasons for the low use of electronic communications use at home.

In more than one-third of the administrative office professionals' households, no one uses electronic communications at home. It was unclear if the nonuse was a result of not having a computer available at home, no access to electronic communications at home, or no desire to use electronic communications at home. The questionnaire used in this study might be improved by adding some questions to investigate the reasons for the low household level of use of electronic communications at home.

One question should ask the respondents to indicate if they currently have a personal computer at home, if they plan to purchase a computer in the near future, or if they do not plan to purchase a computer. A separate question should ask respondents to indicate if they have access to electronic communications from home, if they plan to go online in the near future, or if they do not plan to go online. WebTV does not require the use of a personal computer, so access to electronic communications may be gained without the purchase of a computer. Another question should explore possible reasons why the administrative office professionals themselves do not use electronic communications.
communications at home. Possible responses could include having no equipment, no electronic communications connection, competition with others in the household for use at home, too busy to use at home, and no desire to use at home. The data would be evaluated to determine whether the low level of use at home by administrative office professionals is a result of economics, personal lifestyle, or perceptions about performing job functions at home.

2. There is a need to compare users and nonusers of electronic communications at work on selected environmental factors: number of employees in organization, perceived level of participative management, and perceived level of job responsibility.

The respondents in this study were directed to omit the environmental characteristics items if they were not using electronic communications at work. The study might be improved by directing the nonusers of electronic communications to respond to the environmental characteristics that do not directly involve the use of electronic communications; namely, number of employees in organization, perceived level of participative management, and perceived level of job responsibility. The data would be used to compare the responses of the users and nonusers of electronic communications on organization size, perceived level of participative management, and perceived level of job responsibility to determine if there is a difference between groups.

3. There is a need to investigate further the level of formal education of administrative office professionals.

Some respondents who completed at least a high school diploma or equivalent but who had not completed a college degree wrote notes next to their responses indicating they had taken some college courses. A fringe benefit for some administrative office
professionals is that the organization will offer tuition reimbursement for courses and workshops that are directly related to their employment.

The IAAP values education that enhances their members' job qualifications. Eligibility to take the CPS® examination is based on a combination of education and work experience. Four years of secretarial experience is required if the administrative office professional has no college degree. The work experience requirement is reduced to three years for candidates who hold an Associate's Degree and two years for candidates who hold a Bachelor's Degree (IAAP Web site, 1998).

The questionnaire might be improved by asking the respondents to indicate if their education levels include some college and whether or not the employer provides financial assistance for college courses. Further investigation may reveal whether the administrative office professionals perceive any intrinsic or extrinsic benefits for furthering their education.

4. There is a need to investigate the perceptions of administrative office professionals about the World Wide Web.

Several items in the questionnaire addressed the use of the World Wide Web. Seventy-six percent of the respondents who use electronic communications at work reported having access to the World Wide Web. However, the World Wide Web was used a mean of 1.91 days per week, and search engines to locate information on the World Wide Web were used a mean of 1.72 days per week. The mean response for the six-point Likert-scale item, "Locating information on the World Wide Web is easy," was 3.70, indicating that the respondents somewhat disagree to somewhat agree with the statement.
Administrative office professionals use many resources to locate information to carry out their daily tasks, and the World Wide Web has the potential to deliver up-to-date information. The findings of this study indicate that the level of use of the World Wide Web is not very high and warrants further investigation.

Kaye (1996) stated that as Web users become more familiar with the Web and experienced in attaining gratifications sought, those users may become more goal-oriented. Research into the administrative office professionals' perceptions about using the World Wide Web as a source of information may reveal possible reasons why the level of use of the World Wide Web is not higher.

5. There is a need to investigate the administrative office professionals' cognition level of electronic communications terminology.

Some of the respondents indicated they were not familiar with various components of electronic communications. Further investigation may reveal whether administrative office professionals are familiar with terms such as the Internet, an intranet, the World Wide Web, USENET newsgroups, File Transfer Protocol (FTP), and Telnet. This results of this study may have been affected by the respondents' unfamiliarity with terminology associated with electronic communications.

6. There is a need to examine adoption and level of use of electronic communications from other perspectives.

This study focused on adoption and diffusion of electronic communications from Rogers' (1995) theories as they related to administrative office professionals working in a business office environment. The investigation especially focused on issues related to the relative advantage for using electronic communications at work.
Another perspective for study of the adoption and level of use of electronic communications may include research into adoption and diffusion theories from the communications position. The body of knowledge related to the communications perspective may provide additional insights as to an administrative office professional's decision to use electronic communications at work.
APPENDIX A

Level of Use of Electronic Communications
By
Administrative Office Professionals Questionnaire
LEVEL OF USE OF ELECTRONIC COMMUNICATIONS BY ADMINISTRATIVE OFFICE PROFESSIONALS

Research sponsored by The Ohio State University College of Education
School of Physical Activity and Educational Services
Workforce Education and Lifelong Learning Programs'
PURPOSE OF THE STUDY

The business office environment has been impacted by rapid changes in technology for the past two to three decades. The emergence of electronic communications and the Internet have caused many educators to question whether they should be teaching such technology to parallel the real world.

The purpose of this study is to identify environmental and personal characteristics related to the level of use of electronic communications by administrative office professionals.

Your responses to the items on this questionnaire are important and will help educators plan their curriculum as they prepare students and employees to use technology in the office.

The questionnaire is divided into five parts. Each part contains specific instructions for answering the questions. Please read each set of instructions carefully before responding to the questions.

Even though your survey questionnaire contains a number, it is for tracking purposes only. All of your responses will remain confidential, and none of your responses will be shared with your employer.

Please go to the next page
### PART I. GENERAL INFORMATION

#### Current Employment Status

**INSTRUCTIONS:** For purposes of this questionnaire, *Employed in an office support position* means your primary job responsibilities involve performing a number of the duties listed in Questions 25-52. Check (√) the appropriate response to the following question that determines your current employment status.

1. What is your current employment status? (Check only one.)
   - a. Employed in an office support position
   - b. Employed in a non-office support position
   - c. Employed in a teaching position
   - d. Retired/Not currently employed
   - e. Other (please explain) ____________________________________________________

If your answer to Question 1 is a, please complete the remainder of the questionnaire.

If your answer to Question 1 is b, c, or d, please return the questionnaire without answering the remainder of the questions.

If your answer to Question 1 is e, please determine if your answer more nearly resembles one of the other choices and follow the instructions for the corresponding letter.

#### Current Use of Electronic Communications on the Job

**INSTRUCTIONS:** For purposes of this questionnaire, the term *electronic communications* refers to the sending and receiving of messages and information via computers. Check (√) one response to the following question that determines your use of electronic communications at work.

2. Do you use electronic communications at work? (Check only one.)
   - a. Yes (Please go to Question 3)
   - b. No (Please go to Question 70)

### PART II. LEVEL OF USE OF ELECTRONIC COMMUNICATIONS

**INSTRUCTIONS:** Circle one number only for each item to represent the number of days per week you use the following electronic communications components to perform your job duties. If you are not familiar with an item, circle NF for *Not Familiar*.

**Level of Use of Electronic Communications**

How many days per week do you use the following electronic communications components to perform your current job duties at your organization?

<table>
<thead>
<tr>
<th>Component</th>
<th>Level of Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Send/receive e-mail messages</td>
<td>0 1 2 3 4 5  NF</td>
</tr>
<tr>
<td>Attach documents/files to e-mail messages</td>
<td>0 1 2 3 4 5  NF</td>
</tr>
<tr>
<td>Read/post to USENET Newsgroups</td>
<td>0 1 2 3 4 5  NF</td>
</tr>
<tr>
<td>Retrieve information from organization’s internal network</td>
<td>0 1 2 3 4 5  NF</td>
</tr>
<tr>
<td>Retrieve information from the World Wide Web</td>
<td>0 1 2 3 4 5  NF</td>
</tr>
<tr>
<td>Use a search engine to locate information on the World Wide Web (e.g., Excite, Infoseek, Lycos, Alta Vista, Yahoo, etc.)</td>
<td>0 1 2 3 4 5  NF</td>
</tr>
<tr>
<td>Author/edit/update the organization’s World Wide Web site</td>
<td>0 1 2 3 4 5  NF</td>
</tr>
<tr>
<td>Author/edit/update the organization’s intranet site (available to organization employees only)</td>
<td>0 1 2 3 4 5  NF</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>0 1 2 3 4 5  NF</td>
</tr>
</tbody>
</table>

Please go to the next page ➔
PART III. ENVIRONMENTAL CHARACTERISTICS

Level of Access (E-1)

INSTRUCTIONS: Check (✓) all applicable responses to the following question that determines your level of access to electronic communications.

Which electronic communications components are available to you at your organization? (Check all that apply.)

12. Networked system accessible by organization employees only
13. Electronic mail
14. USENET Newsgroups
15. World Wide Web
16. File Transfer Protocol (FTP)
17. Telnet
18. Other (please specify) ________________________________________________________

Number of Employees in Organization (E-2)

INSTRUCTIONS: Fill in the approximate numbers to respond to the following question that determines your organization's size.

19. Approximately how many full-time individuals are employed by your organization? (Consider those employed at your work location and not affiliates or branch offices.)
   __________ # of full-time employees

Perceived Level of Participative Management (E-3)

INSTRUCTIONS: Check (✓) all applicable responses to the following question that determines your perceived level of participative management.

Which of the following statements best describe your organization's leadership style? (Check all that apply.)

My employer/organization:

20. Has developed and communicated its vision.
21. Has developed and communicated a mission statement.
22. Encourages employee participation in decision-making.
23. Provides an environment that fosters creativity.
24. Values my input/suggestions.

Level of Job Responsibility (E-4)

INSTRUCTIONS: Circle the number of the response that best describes your level of frequency in performing the following tasks at your job according to the following scale:

0 = Never, 1 = Very Rarely, 2 = Rarely, 3 = Occasionally, 4 = Frequently, 5 = Very Frequently

How frequently do you perform the following tasks at your current job?

<table>
<thead>
<tr>
<th>Task</th>
<th>Never</th>
<th>Rarely</th>
<th>Very Rarely</th>
<th>Occasionally</th>
<th>Frequently</th>
<th>Very Frequently</th>
</tr>
</thead>
</table>
How frequently do you perform the following tasks at your current job?

<table>
<thead>
<tr>
<th>Task</th>
<th>Never</th>
<th>Very Rarely</th>
<th>Rarely</th>
<th>Occasionally</th>
<th>Frequently</th>
<th>Very Frequently</th>
</tr>
</thead>
<tbody>
<tr>
<td>30. Write a formula in a spreadsheet</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>31. Create a database</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>32. Search a database for information</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>33. Create a desktop presentation slide show</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>34. Import clip art into documents</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>35. Create a desktop publishing document</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>36. Maintain office equipment</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>37. Make equipment purchase recommendations</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>38. Install software on computer</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>39. Troubleshoot computer problems</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>40. Prepare expense reports</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>41. Requisition/order supplies</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>42. Handle travel arrangements</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>43. Process incoming/outgoing mail</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>44. Compose correspondence</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>45. Transcribe dictation</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>46. Handle incoming/outgoing telephone calls</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>47. Perform receptionist duties</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>48. Maintain a calendar</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>49. Perform tickler follow-up</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>50. Maintain records/files</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>51. Train others</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>52. Supervise others</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>53. Other (please describe)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Level of Electronic Communications Training (E-5)

INSTRUCTIONS: For purposes of this questionnaire, formal training refers to structured classes, workshops, and seminars; informal training refers to unstructured training, such as referring to a manual or having someone sit with you to demonstrate procedures. Check (✓) all applicable responses to the following questions that determine your level of electronic communications training.

What types of training have you received in the use of electronic communications?

(Check all that apply.)

54. ___ Formal training on electronic communications inside my organization.
55. ___ Formal training inside my organization that was segmented by topic (e.g., one session on e-mail, another about using the World Wide Web, etc.).
56. ___ Formal training sessions on the use of electronic communications outside my organization.
57. ___ Informal training on electronic communications inside my organization.
58. ___ Informal training with a technical support person inside my organization for assistance with using electronic communications.
59. ___ Learned electronic communications on my own.

Please go to the next page ⇒
**Level of Proximity to Electronic Communications (E-6)**

**INSTRUCTIONS:** Check (✓) one response to the following question that determines your proximity to electronic communications at your organization.

60. Which statement most accurately reflects where you usually use electronic communications at work? *(Check only one.)*

   ___ a. I use electronic communications at my own workstation.
   ___ b. I use electronic communications at a nearby/convenient location.
   ___ c. I use electronic communications at a remote/inconvenient location.
   ___ d. Other (please explain) ________________________________

**Perceived Level of Relative Advantage (E-7)**

**INSTRUCTIONS:** Circle the number of the response that best describes your level of agreement with each of the following statements about the relative advantage of using electronic communications according to the following scale:

1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Somewhat Agree, 5 = Agree, 6 = Strongly Agree, N/A = Do Not Use

**What do you perceive as the relative advantages of using electronic communications at work?**

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Somewhat Disagree</th>
<th>Somewhat Agree</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Do Not Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>61. Using e-mail reduces &quot;phone tag.&quot;</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>N/A</td>
</tr>
<tr>
<td>62. Using electronic communications reduces time zone frustrations.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>N/A</td>
</tr>
<tr>
<td>63. Using e-mail to transmit documents is faster than other methods (e.g., fax, regular mail).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>N/A</td>
</tr>
<tr>
<td>64. Using electronic communications allows me to disseminate information quickly</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>N/A</td>
</tr>
<tr>
<td>65. Using electronic communications allows me to disseminate information cost effectively.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>N/A</td>
</tr>
<tr>
<td>66. Using electronic communications provides labor-saving benefits over earlier methods</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>N/A</td>
</tr>
<tr>
<td>67. Using electronic communications provides more current information than paper resources.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>N/A</td>
</tr>
<tr>
<td>68. Locating information in my organization's online internal files is easy.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>N/A</td>
</tr>
<tr>
<td>69. Locating information on the World Wide Web is easy.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**PART IV. PERSONAL CHARACTERISTICS**

**Age (P-1)**

**INSTRUCTIONS:** Fill in the appropriate response to the following question that determines your age.

70. In which year were you born? ________________

*Please go to the next page ➔*
Level of Formal Education (P-2)

INSTRUCTIONS: Check (✓) the appropriate response to the following question about your formal education.

71. What is the highest level of education you have completed? (Check only one.)
   a. ____ Less than a high school diploma
   b. ____ High school diploma or equivalent
   c. ____ Associate's degree
   d. ____ Bachelor's degree
   e. ____ Graduate degree

CPS® Certification (P-3)

INSTRUCTIONS: Check (✓) the appropriate response to the following question about the CPS® rating.

72. Do you hold the CPS® rating? (Check only one.)
   ___ Yes
   ___ No

Number of Family Members at Home Using Electronic Communications (P-4)

INSTRUCTIONS: Check (✓) the appropriate responses to the following item and fill in a number to determine how many family members use electronic communications at home.

73. Please identify the family/household members who use electronic communications at your home (e.g., America Online, CompuServe, any Internet Service Provider, electronic bulletin board system (BBS), etc.). (Check all that apply and fill in the corresponding numbers.)
   a. ____ Self
   b. ____ Spouse/Significant other
   c. ____ School-age children .................................................. Number of users ________
   d. ____ Adult children (over age 18) ................................... Number of users ________
   e. ____ Other adult household members .............................. Number of users ________
   f. ____ No one uses electronic communications at home

Level of Family Use at Home (P-5)

INSTRUCTIONS: Fill in a number to respond to the following question that determines family use of electronic communications at home.

74. How many total hours per week do family/household members, including yourself, spend online at home?
   _______ hours

PART V. COMMENTS

75. What comments do you have regarding electronic communications?

____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

THANK YOU FOR YOUR ASSISTANCE! 😊

Please go to the back page ⇒
INSTRUCTIONS FOR RETURNING SURVEY

Please fold this questionnaire along the dotted line with return address showing.

Staple or tape securely at bottom and mail.

BONNI L. KATONA
2574 ZEBEC STREET
POWELL, OH 43065-9027
APPENDIX B

Panel of Experts
PANEL OF EXPERTS

Marjorie Obrist, Ed.D.
Former Department Chairperson
Office Administration Department
Columbus State Community College
Columbus, Ohio

Donna King, CPCU, CPS, M.A.
Property Casualty Technician
Nationwide Insurance Enterprise
Columbus, Ohio

Gloria Bragg, M.A.
Business Education Instructor
Southeast Career Center
Columbus Public Schools
Columbus, Ohio

Jeanne A. Haynes, CPS, M.A.
Business Education Teacher
Ohio Reformatory for Women
Marysville, Ohio

Ray D. Ryan, Associate Professor
Workforce Education and Lifelong Learning Programs
Physical Activities and Educational Services
College of Education
The Ohio State University
Columbus, Ohio

Janet L. Henderson, Associate Professor
Human and Community Resource Education
Agricultural Education Department
College of Education
The Ohio State University
Columbus, Ohio

Anthony A. Olinzock, Associate Professor
Workforce Education and Lifelong Learning Programs
Physical Activities and Educational Services
College of Education
The Ohio State University
Columbus, Ohio

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APPENDIX C

Field Test Comment Sheet
FIELD TEST COMMENT SHEET

Thank you for taking the time to help establish the validity of a survey instrument. *Validity* is measuring what the instrument or survey says it will measure.

As you complete the questionnaire, consider the following questions and provide some feedback. You may write directly on the instrument.

1. How much time was needed to answer the questionnaire?
   
   Start Time ________________________ Stop Time ______________________

2. The purpose of the study is given on page 2, inside the cover. Were the questions appropriate for the stated purpose?

3. How thorough were the questions in each section?

4. Which questions were the most difficult to answer? Why?
5. Did you experience any difficulty understanding the wording and/or terminology in the questionnaire? Please explain areas of concern.

6. How clear were the instructions in each section? Please explain areas of concern.

7. How was the ease in filling out the questionnaire? Please explain areas of concern.

8. How was the overall appearance of the questionnaire? Was there enough white space? Was the font size large enough to read? Please explain areas of concern.

9. Do you have any other comments or suggestions about the questionnaire not addressed?
APPENDIX D

Advance-Notice Letter to Sample
October 24, 1998

Dear «FName»:

Within the next week you will receive a request to complete a questionnaire. We are mailing it to you to learn how administrative office professionals in Ohio use electronic communications.

This survey is being conducted to help business educators and others who prepare students for jobs in the office environment plan their curriculum.

We would appreciate your taking a few minutes to complete and return the questionnaire. Thank you in advance for your assistance.

Sincerely yours,

Bonni L. Katona
Ph.D. Candidate
APPENDIX E

Cover Letter to Sample
October 31, 1998

Dear [Name]:

As a business education teacher in Ohio, I am interested in learning about changing trends in technology from administrative office professionals such as you. One of the more recent innovations in office technology is the use of electronic communications. You may be in a position to provide input to business educators and others who prepare students for jobs in the office environment.

You have been selected to participate in a study to respond to a questionnaire related to your level of use of electronic communications. Your name was drawn randomly from a list of professional-level members of the International Association of Administrative Professionals in the state of Ohio. In order for the results of the study to most accurately reflect the use of electronic communications by administrative office professionals, it is important that you complete the enclosed questionnaire and mail it back to me by November 14, 1998. The return postage has been provided. Please accept the enclosed teabag as my token of my appreciation for your time and assistance.

The responses to the questions will remain totally confidential. The tracking number on the questionnaire is for mailing purposes only. When the questionnaire is returned, the tracking number will allow me to check your name off the mailing list. Your name will never appear on the questionnaire, and none of your responses will be shared with your employer.

If you have any questions about the study, I will happy to answer them for you. Please call me collect at (614) 792-7933 or e-mail me at katona.3@osu.edu.

Thank you for your time and assistance.

Sincerely yours,

Bonni L. Katona
Ph.D. Candidate

Encl.
APPENDIX F

Follow-up Postcard to Sample
Last week a questionnaire seeking your input about electronic communications use was mailed to you. Your name was drawn randomly from a list of professional-level members of the International Association of Administrative Professionals in the state of Ohio.

If you have already completed and returned the questionnaire, please accept our sincere gratitude. If not, won’t you please take a few minutes to complete and return it today. We are especially grateful for your assistance because your responses will be useful to business education teachers and others who prepare students for jobs in the office environment.

If you did not receive a questionnaire, or if it was misplaced, please call me collect at (614) 792-7933 and we will get another one in the mail to you today.

Sincerely yours,

Bonni L. Katona, Ph.D. Candidate
The Ohio State University, College of Education
School of Physical Activity and Educational Services
Workforce Education and Lifelong Learning Programs
APPENDIX G

Second Cover Letter to Nonrespondents
Dear «FirstName»:

Three weeks ago we wrote to you seeking your input on electronic communications use. As of today, we have not received your completed questionnaire. We realize you may not have had time to complete the questionnaire, and we would sincerely appreciate hearing from you.

This study is being conducted to help business educators and others who prepare students for jobs in the office environment plan their curriculum. We are writing to you again because in order for the study to be truly representative, it is essential that each person in the sample return his or her questionnaire. Your name was drawn through a scientific sampling process in which every professional-level member of the International Association of Administrative Professionals in the state of Ohio had an equal chance of being selected. The usefulness of the study depends on our receiving a questionnaire from each respondent.

A replacement questionnaire with return postage is enclosed for your convenience. We would appreciate your returning the completed questionnaire by December 5, 1998. If you have any questions about the study, I would be happy to answer them. Please call me collect at (614) 792-7933 evenings, or e-mail me at katona.3@osu.edu.

Sincerely yours,

Bonni L. Katona
Ph.D. Candidate

Encl.
APPENDIX H

QUALITATIVE DATA—
Responses to Last Item on Questionnaire
Requesting Comments about Electronic Communications
**QUALITATIVE DATA—**
Responses to Last Item on Questionnaire
Requesting Comments about Electronic Communications

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>I do not have it at the present time but know I will be forced to get online in order to keep up.</td>
</tr>
<tr>
<td>10</td>
<td>Some employees in our organization are using electronic communication, but it has not been installed for the office support staff. I feel the office support staff should have electronic communications.</td>
</tr>
<tr>
<td>20</td>
<td>It is the future but will take a lot of the interpersonal contact out of our society. The area that concerns me is that you can’t be sure how long it will take someone to retrieve your message and reply if it is urgent.</td>
</tr>
<tr>
<td>55</td>
<td>I wouldn’t want to work without it now!</td>
</tr>
</tbody>
</table>
| 75       | Interesting-challenging-speed-
Hopefully cost for individual home use will decrease. |
<p>| 85       | It’s convenient, easy to use, and helpful. |
| 120      | Great way to keep in touch with family members; quicker than written communications. |
| 130      | Lots to learn still! |
| 145      | I am glad kids are learning computer training early in school. This is certainly what the near future is coming to all the time. |
| 185      | I like using the electronic (e-mail) communications. I have a lot of success retrieving information from the available Web sites. That helps me in my daily duties—administrative support. |
| 190      | Very useful—but all should work the same and be compatible. I have trouble downloading attachments from e-mail. |
| 200      | Electronic communications enhances one’s ability to gain knowledge, be more productive, and keep pace with the fast-moving world we live in. |
| 205      | A necessity in today’s world—I love the idea of gradually reducing “papers.” Why wasn’t this sent by e-mail? I probably would have answered the same day as e-mail seems to be a priority. |</p>
<table>
<thead>
<tr>
<th>Code No.</th>
<th>Comments</th>
</tr>
</thead>
</table>
| 210     | It is: often helpful  
sometimes irritating  
many times confusing  
not always timely  
but still helpful (with limitations) to use. |
| 255     | Electronic communications are the future! There is no escaping the fact that electronic communications will continue to grow and be a part of everyday life. |
| 260     | After work I care absolutely nothing about electronic communications. |
| 320     | We are a “remote” office. Our corporate office is in Lansing, MI. To get into our email is a very long process. It sometimes takes 2-3 minutes and then not to have anything in there is very disconcerting. |
| 335     | Most people do not know the proper etiquette when sending e-mail and wording can be misunderstood to cause problems/conflict. How “safe” is confidential messages? Electronic mail cannot replace a hands-on approach most of the time, but is a great time savings device. |
| 360     | It's been the greatest advantage in today's working world—new items are learned daily. |
| 380     | I believe it unfairly excludes elderly folks or those in a moderate-income bracket who can’t afford a PC or AOL, etc. |
| 390     | We are looking into the purchase of a computer at home. It is unbelievable how easy it is to access needed information without having to go to a library to look something up. Since I have been using e-mail at work, I have been more productive and spend less time tracking individuals down. I don’t know how we have lived without it. |
| 405     | Very good tool. Plan to utilize the Internet in the home in the near future. |
| 415     | I believe that used correctly, effectively, and wisely, electronic communications can, does, and will produce more work of a higher quality in a lesser amount of time. |

Thank you for allowing me to participate in this survey. 😊
We have just added Lotus Notes for Internet communications. It is faster, easier and has cut down my use of paper already. I am able to contact most people faster by Lotus Notes than by telephone. Unfortunately, I spend so much time on the computer at work that I have trouble working on it at home.

I think it's great! I wish everyone would use it. It should be as common in a household as peanut butter.

Electronic communication is great, but don't just rely on electronic means. Faxing documents is usually quicker unless the recipient needs to edit a document on-line. Technology is great if reliable, but teach manual processes also for those times when it can be more beneficial. Think for yourself—don't rely on a computer for all the answers—it's too easy to have a user error, etc., in a formula.

Sure hope this survey is helpful!!!

In the process of going on line at home and at the office!

My use of electronic communications is limited to internal e-mail only.

Using electronic communications is advantageous only if everyone uses them within the organization; if they do not, the system fails and fosters redundancy.

I think finding info on the WWW using search engines can be difficult because of the huge amount of info that is available. Also, there can be a problem with artificial tags. For example, adult sites that register under frequently searched words in order to get more hits on their site; it clutters up the search.

Where would we be without it? I refuse to use a typewriter anymore. Need to figure out how to use self-carboning forms with a computer—and I don’t mean scan them.

It is quick, cost effective, and easy to use.

I don’t use it at home because of all the wrong type of pages children can get into.
<table>
<thead>
<tr>
<th>Code No.</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>505</td>
<td>It’s exciting to be able to research any topic you have an interest in and to communicate with friends &amp; relatives all over the country by writing as well as phone.</td>
</tr>
<tr>
<td>520</td>
<td>I think it is a wonderful addition to my daily office tools, but do not believe I would ever want or need it in my home environment.</td>
</tr>
<tr>
<td>540</td>
<td>It’s a way of receiving information more quickly. It helps me to be more efficient.</td>
</tr>
<tr>
<td>545</td>
<td>I love using electronic communications. It has helped me with my job in many ways. In addition to the information listed under (E7), I also find it very helpful to track information by sending documents and tagging them “return receipt requested.” That way, I know the individual received the message/note and I have proof of date and time. All of this is done in a matter of seconds.</td>
</tr>
<tr>
<td>555</td>
<td>When I received e-mail a few years ago, I did not use it very much. Being a secretary, I liked talking direct to the person. I find it does make it easier to schedule meetings and notify employees of upcoming events without the paper waste. I currently work part-time to better raise my daughters; therefore, I stepped down from Executive Secretary to Secretary III, so my responsibilities are not as demanding. Thank you.</td>
</tr>
<tr>
<td>560</td>
<td>In some respect I feel it is a great time saver, but some employees forget about their work and look up a lot of non-work information.</td>
</tr>
<tr>
<td>585</td>
<td>Electronic communication allows me to manage time better and reduce corporate cost. In the next few years, I look forward to seeing additional improvements.</td>
</tr>
<tr>
<td>605</td>
<td>I think they are fascinating, easy to use and a good way to disseminate information very cost effectively. While I do not use the World Wide Web at work, I am looking forward to getting a home computer soon and gathering information via the Internet.</td>
</tr>
<tr>
<td>Code No.</td>
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<tr>
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</tr>
<tr>
<td>620</td>
<td>Regarding email, our system (CC Mail) lists everyone in the company (at our site) as having a mailbox, even though some don't have a computer. So at times I have to follow up with a phone call and send the material by fax or mail.</td>
</tr>
<tr>
<td></td>
<td>[In response to the “thank you” message printed on the questionnaire, the respondent wrote, “You’re welcome!”]</td>
</tr>
<tr>
<td>635</td>
<td>Electronic communications have been a Godsend! It has enabled me to pull information about specific companies, retrieve travel routes, keep in contact with people we generally don’t find the time to call, order merchandise—actually, I don’t know how we ever did without it.</td>
</tr>
<tr>
<td>645</td>
<td>It is an absolute must!</td>
</tr>
<tr>
<td>690</td>
<td>This is a wonderful tool! To quickly find information or to disseminate information to one or a number of people, is unbelievably easy.</td>
</tr>
<tr>
<td>695</td>
<td>Excellent communication tool!</td>
</tr>
<tr>
<td>700</td>
<td>It saves time. Resource material available is valuable. Excel &amp; business applications are useful. Dictionary, thesaurus &amp; medical spell checks useful. Preparation on time speeded up to final document disbursement. Creativity essential for graphics/publication.</td>
</tr>
<tr>
<td>705</td>
<td>I use it often and I would not want to work without it.</td>
</tr>
<tr>
<td>710</td>
<td>It saves the paper flow—quick and efficient transmittal of information that’s needed—or requisitioning documents or brochures for clients of the firm. Saves time and money when video conferencing—lessens travel for interviews. Important tool in communications in the business world!</td>
</tr>
<tr>
<td>715</td>
<td>I love working with it and very much so want to learn all I can on the use of it.</td>
</tr>
<tr>
<td></td>
<td>If I can be of further help, please let me know.</td>
</tr>
<tr>
<td>735</td>
<td>Excellent resource—saves great deal of time and expedites transfer of information.</td>
</tr>
<tr>
<td>Code No.</td>
<td>Comments</td>
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<tr>
<td>---------</td>
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</tr>
<tr>
<td>745</td>
<td>Having been in the workforce a good number of years now, I still have the desire to communicate person-to-person. I get more interaction from communicating person-to-person than from electronic communications.</td>
</tr>
<tr>
<td>750</td>
<td>Not knowing who has access to your information!</td>
</tr>
<tr>
<td>765</td>
<td>Electronic communications are wonderful. Time and money are saved.</td>
</tr>
<tr>
<td>790</td>
<td>It is the way of the future and critical for all individuals to know and understand.</td>
</tr>
<tr>
<td>800</td>
<td>It is a great tool. You can provide back up when people claim, “You never told me.” I always request a delivery receipt when sending e-mail.</td>
</tr>
<tr>
<td>815</td>
<td>It’s fun. I enjoy using it.</td>
</tr>
</tbody>
</table>
| 820     | I frequently use email when  
1) I want written documentation.  
2) I don’t want to speak to the person by phone. |
<p>| 850     | Electronic communications is good as long as all of the users are informed and trained, preferably if the company you work for schedules training sessions or at least pays for a class for you to learn. |
| 870     | I think it is the best, fastest, easiest and most economical way to communicate. Everyone should have it and use it! |
|         | I wouldn’t be without electronic mail! |
| 910     | The greatest advantage to electronic communications is that it saves time in reduced phone and walk-up interruptions. The greatest disadvantage is that formatting is often lost and the recipient receives a jumbled or unprofessional-looking document. |
| 915     | It is a fast, effective way to communicate. |
| 935     | Great! |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>955</td>
<td>Electronic communication, especially e-mail, is so amazing to me. To know you can send a message (and possibly get a response) to anywhere in the world is great. My only negative comment is that it’s so hard to keep up with the many changes that occur. Thank you for choosing me!</td>
</tr>
<tr>
<td>975</td>
<td>Our office has not felt the need. We have Revised Code on CD-ROM and Windows 3.1. If and when I retire I may get into it at home, mainly because it sounds interesting.</td>
</tr>
<tr>
<td>985</td>
<td>I am not completely comfortable yet with electronic communications, but I feel I am learning more all the time. Having started on a manual typewriter, I’ve come a long way!</td>
</tr>
<tr>
<td>1045</td>
<td>I would choose electronic mail over any other way. It is a great way to communicate and to get the work you need ASAP. It is great for sending letters and files, etc.</td>
</tr>
<tr>
<td>1055</td>
<td>It really helps in this “very busy” business world we all work in today. Saves a tremendous amount of time and lets me read my e-mail when I have the time, versus answering phones all day. Best way to communicate in today’s world!</td>
</tr>
<tr>
<td>1065</td>
<td>They are excellent until the network connection goes out. Everything STOPS. I enjoy it, but my eyes are worse sometimes. I’m sure it’s the FUTURE!</td>
</tr>
<tr>
<td>1070</td>
<td>Please let me know the results—I would like to share it. Just as with previous tools, it can be an aid in business and in the home, but it is merely a tool—not the answer to everything. It can be used for good or misuse and harm, depending on the person. As one who uses it as a tool, I am grateful for its addition. P.S. My answers only reflect my new job (3 weeks old) and not my entire scope of experience. Also, my organization has had a transition of new staff members. We are also looking into upgrading our computers and cross-training support staff responsibilities; thus, working toward team work efficiency. I strongly believe in educating anyone interested in learning-updating their skills in all areas of technology. I apologize for the delay in returning this to you!</td>
</tr>
</tbody>
</table>

164
<table>
<thead>
<tr>
<th>Code No.</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1080</td>
<td>Communicating online is more efficient, faster and less costly. You can communicate with family and friends, shop and access job and real estate listings through the USA and Canada.</td>
</tr>
<tr>
<td>1085</td>
<td>Wealth of information; easy to obtain.</td>
</tr>
<tr>
<td>1090</td>
<td>I have a lot to learn. I just received the Internet at work. I look forward to this fast way to communicate with our customers.</td>
</tr>
<tr>
<td>1095</td>
<td>Spouse uses electronic communications at work and thinks it is great.</td>
</tr>
<tr>
<td>1105</td>
<td>This is an area our office hopes to expand into to some degree next year, and the prospect is very interesting to me. I presently feel we are antiquated and out of the mainstream.</td>
</tr>
<tr>
<td>1110</td>
<td>It's great when all systems are working, but a lot of &quot;nonsense&quot; is sent, too. I use the delete button frequently.</td>
</tr>
<tr>
<td>1125</td>
<td>3 other people in office have e-mail and Internet. I would like to have e-mail, Internet, electronic fax. I have some college courses toward Executive Secretarial and intend to go for my CPS. Our office also has EFT. I believe belonging to a professional group is a must—such as IAAP. IAAP, CPS, CAM ratings need to be promoted in the schools.</td>
</tr>
<tr>
<td>1130</td>
<td>Electronic communications, like computers, although very beneficial, have also become overused. As an administrative assistant, my goal is to always &quot;get the job&quot; done correctly and most efficiently! After all—time is money!</td>
</tr>
<tr>
<td>1140</td>
<td>Love it. Previous job, I had ability to not only email in-house, but Internet use only—was really spoiled with it and miss it terribly!! Soon to have the ability in my present position.</td>
</tr>
<tr>
<td>1165</td>
<td>Much faster than playing &quot;phone tag.&quot;</td>
</tr>
<tr>
<td>1170</td>
<td>Would like to learn and use but haven’t had the opportunity.</td>
</tr>
<tr>
<td>1175</td>
<td>At work we will be hooked up in about 2 months.</td>
</tr>
<tr>
<td>Code No.</td>
<td>Comments</td>
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<tr>
<td>---------</td>
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</tr>
<tr>
<td>1185</td>
<td>My husband uses Macintosh—Loves it—Works out of the home. I'm the opposite, so it is hard sometimes that way. I was secretary prior to my present job before my company had a joint venture and 98 were downsized. I presently do data entry, and I am active in their activity preparation; therefore, I have to answer in a different way. I hope this can help in some way for you.</td>
</tr>
<tr>
<td>1205</td>
<td>It's great! I'm in the process of purchasing a computer at home with electronic communications.</td>
</tr>
<tr>
<td>1215</td>
<td>A must for someone in the workforce today, but we have barely begun to use electronic communications. I see great things coming in the future. A child cannot begin soon enough to learn because all the future jobs will use electronic communications in some form.</td>
</tr>
<tr>
<td>1220</td>
<td>Wonderful way to communicate with family members out-of-state (country).</td>
</tr>
<tr>
<td>1265</td>
<td>Cannot afford on-line service at this time—which I am working on acquiring as I believe the Web’s information is essential for success in the future—professionally and personally (for myself and 2 children, 14 &amp; 12).</td>
</tr>
<tr>
<td>1295</td>
<td>Overwhelming.</td>
</tr>
<tr>
<td>1315</td>
<td>Since I have access to electronic communication at work, I have not connected on-line at home.</td>
</tr>
<tr>
<td>1320</td>
<td>I really like to use it for personal email to family that is long distance and also friends that are too busy to correspond by mail or phone!</td>
</tr>
<tr>
<td>1335</td>
<td>We have become obsessed with speed of deluge of information!</td>
</tr>
<tr>
<td>1340</td>
<td>I haven’t had the opportunity to use electronic communications, but I think it would be awesome, time efficient, and a cheaper way to communicate.</td>
</tr>
<tr>
<td>1360</td>
<td>I feel electronic communication is the only way to function in an expeditious, productive and cost-effective manner. The amount of time and manpower saved is unbelievable. As a fairly recent graduate, I heavily rely on the skills and knowledge I gained in this area. Plus push this issue!!!</td>
</tr>
</tbody>
</table>

Thanks for the opportunity to respond!
<table>
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<th>Code No.</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1370</td>
<td>Electronic communications serves well in most situations; however, there are times when I want to hear immediate response, experience body language, [?] inflections to better receive another's communication. I fear we will all be more comfortable with a box than with another human being. Communication is a 2-way street. Electronic communication does not promote that.</td>
</tr>
<tr>
<td>1375</td>
<td>The biggest advantages of electronic communication are: It reduces paper and it's cheaper than long distance phone calls</td>
</tr>
<tr>
<td>1380</td>
<td>It's safe, fast and a constant learning tool that all people should know and have access to.</td>
</tr>
<tr>
<td>1390</td>
<td>Office: More concise way to communicate and save time when you need to &quot;tag&quot; a file along. Downside: If the [?] is not up-to-date with the same software, it will not work or visa/versa. Home: Cool way to keep in touch via email with family &amp; friends.</td>
</tr>
<tr>
<td>1395</td>
<td>It's okay as long as people read their e-mail.</td>
</tr>
<tr>
<td>1440</td>
<td>It is a great way to keep in touch with associates that leave the company. You can always get in touch with them if necessary. Also, it is a great way to document conversation and track meetings. I also find it a great way to keep in touch with friends and family that live all over the world. Helps keep people together and communicating.</td>
</tr>
<tr>
<td>1465</td>
<td>Electronic communications has enabled me to correspond with people around the world in less time than it takes me to go for a cup of coffee! It is great. I correspond with book publishers and receive texts delivered to my office in a couple of days!</td>
</tr>
<tr>
<td>1500</td>
<td>It is great.</td>
</tr>
<tr>
<td>1515</td>
<td>E-mail is effective for me—however, I can’t leave e-mail messages about time sensitive issues because not all users retrieve e-mail as frequently as they should.</td>
</tr>
<tr>
<td>1520</td>
<td>We use Microsoft Exchange at work, which I also use at home. Its features, such as Out of Office Assistant, are wonderful. If I’m unable to get to work (sick, personal time, etc.), I can turn it on from home, people are notified, and they can either leave a message or contact another person covering that day. It’s great! This way they know I’m not ignoring their e-mail.</td>
</tr>
<tr>
<td>Code No.</td>
<td>Comments</td>
</tr>
<tr>
<td>---------</td>
<td>----------</td>
</tr>
<tr>
<td>1530</td>
<td>It seems that every day we move closer to using e-mail over other communications. We got along without this form for so long and now when something goes wrong and we can't use it, we are lost! It definitely saves time and money. It is very annoying when there are glitches with the service provider.</td>
</tr>
<tr>
<td>1550</td>
<td>I like it!</td>
</tr>
</tbody>
</table>
REFERENCES


Smith, P. M. (1995, July 3). Schools' future—interactive learning is a key. The Southern Illinoisan, 7A.


USA Today. (1999, March 17) U.S. now has an information-age economy.