CHAPTER 4

FINDINGS

The purpose of this study was to obtain and analyze the IT competencies required for administrative support staff employed in networked environments and to identify the priority areas for training in IT.

This first section of this chapter outlines the demographic profile of administrative support staff employed in networked organizations. The profile of respondents includes the highest education level attained, nature of business, age, job title, years in current position and years of related work experience. The profile report therefore gives an insight into the education and work experience of administrative support professionals.

The second section presents the findings on usage of computers in the workplace. The report deals with type of computer used and years of computer use in the workplace. Section three reports findings on in-service training in information technologies.

The last section deals with the major part of the Information Technology Competency Questionnaire (ITCQ) that examines the IT competencies of administrative support staff. The 10 competency categories with the associated IT competencies were listed in the ITCQ. This last section reports ratings on frequency of task performance, respondents' perceptions of task importance in the workplace and the respondents' ability to perform the task and related IT competencies.

Profile of Respondents

The first, second and third sections of the questionnaire were designed to provide a profile of administrative support staff employed in networked organizations from the service sector in Klang Valley, Malaysia. The profile reports the highest education level attained by respondents, nature of business respondents are employed in, age group, job title used for administrative support positions, years in current position, years of related work experience, years of computer use, prior training in IT, preference for IT training, preference for method of learning IT and method of acquiring IT competency. Table 4.8 presents the highest level of education achieved by the respondents:

Table 4.8

Percentage of Respondents According to Highest Level of Education

Level	No.	%
MCE/SPM	65	20.19
Certificate	20	6.21
Diploma	210	65.22
College Advanced Diploma	7	2.17
Professional qualification	5	1.55
Bachelor's degree	12	3.73
Others	3	.93
Total	322	100.00

The largest percentage or 65% of respondents had obtained a Diploma, while 20% had attained their highest education in MCE (Malaysian Certificate of Examination which is equivalent to the O-Level Examination), SPM (equivalent of MCE) or SPVM. Approximately 6% of respondents had obtained a Certificate. About 4% of respondents had acquired a Bachelor's degree while 2% had received a College Advanced Diploma. Only three respondents or 1% had obtained the STPM (the Higher School Certificate which is equivalent to the A-Level Examination).

Nature of business

The respondents were requested to indicate the organization's nature of business. Table 4.9 shows that each sector is well represented with slightly more (22%) respondents from the government sector and 18% from the banking/finance and insurance-related sector. About 14% of respondents indicated that they worked in the construction and engineering-related companies. The business and professional services sector employed about 10% of the respondents with another 10% of the respondents employed in the education sector. The smallest number of respondents (2%) indicated that they worked in the health sector. An analysis of the "others" classification (2%) revealed that respondents worked in sectors that include research, broadcasting and media.

Table 4.9

Percentage of Respondents According to Nature of Business

Nature of Business	No.	%
Construction	45	13.98
Petroleum and gas	10	3.10
Telecommunications	23	7.14
Health	8	2.48
Government	70	21.74
Education	32	9.94
Trade – wholesale and retail	12	3.73
Banking/Finance/Insurance	57	17.70
Business and professional services	31	9.63
Transportation	18	5.59
Tourist and leisure services	10	3.11
Others	6	1.86
Total	322	100.00

Job title

Table 4.10 shows that more than half (51%) of the respondents reported that they hold the job title "Secretary". Twelve percent of the respondents hold the job title "Executive Secretary" while another 12% hold the job title "Stenographer". Ten percent of the respondents hold the job title "Administrative Assistant" and the smallest number of respondents (4%) hold the job title "Executive Assistant". Other job titles reported are Personal Assistant, Personal Secretary, Confidential Secretary, Audit Assistant,

Communications Assistant, Secretarial Assistant, Legal Assistant, Junior Secretary and Secretary Cum Administrative Executive.

Table 4.10

Percentage of Respondents According to Job Title

Title	No.	%
Stenographer	39	12.11
Secretary	164	50.93
Executive Secretary	40	12.42
Administrative Assistant	33	10.25
Executive Assistant	11	3.42
Others	35	10.87
Total	322	100.00

"Secretary" is still the job title commonly used by administrative support staff although new job titles are being used. The job title of "Stenographer" appears to be confined to several sectors while the new job titles are found in all sectors as shown in Table 4.11:

Table 4.11

Breakdown of Job Titles According to Business Sectors

Nature of business	Title						Total
	Stenographer	Secretary	Executive Secretary	Administrative Assistant	Executive Assistant	Others	
Construction	3 (6.7%)	23 (51.1%)	9 (20.0%)	5 (11.1%)	2 (4.4%)	3 (6.7%)	45 (100%)
Petroleum and gas	-	4 (40%)	2 (20%)	3 (30%)	-	1 (10%)	10 (100%)
Telecommunications	-	8 (34.8%)	8 (34.8%)	1 (4.4%)	3 (13%)	3 (13%)	23 (100%)
Health	-	6 (75%)	1 (12.5%)	1 (12.5%)	-	-	8 (100%)
Government	29 (41.4%)	32 (45.7%)	1 (1.4%)	2 (2.9%)	-	6 (8.6%)	70 (100%)
Education	5 (15.6%)	21 (65.6%)	2 (6.3%)	3 (9.4%)	-	1 (3.1%)	32 (100%)
Trade – wholesale and retail	-	7 (58.4%)	1 (8.3%)	1 (8.3%)	1 (8.3%)	2 (16.7%)	12 (100%)
Banking/finance/ insurance	-	31 (54.4%)	8 (14%)	7 (12.3%)	2 (3.5%)	9 (15.8%)	57 (100%)
Business & professional services	1 (3.1%)	11 (35.5%)	6 (19.4%)	3 (9.7%)	2 (6.5%)	8 (25.8%)	31 (100%)
Transportation	1 (5.5%)	11 (61.1%)	-	3 (16.7%)	1 (5.6%)	2 (11.1%)	18 (100%)
Tourist and leisure Services	-	4 (40%)	2 (20%)	4 (40%)	-	-	10 (100%)
Others	-	6 (100%)	-	-	-	-	6 (100%)
TOTAL	39	164	40	33	11	35	322

Age group

Table 4.12 presents the percentage of respondents according to age group. A large percentage of respondents (48%) are between the ages of 20 – 30. About 36% of the respondents reported that they belonged in the age group of 31 – 40 while 13% are between the ages of 41 – 50. The smallest percentage (3%) is aged 51 years or more.

Table 4.12

Percentage of Respondents According to Age Group

Age	No.	%
20-30	155	48.14
31-40	116	36.03
41-50	43	13.35
51 or more	8	2.48
Total	322	100.00

Work experience

Table 4.13 shows that a large percent of the respondents (34%) have been employed for more than 10 years. A similar percentage (31%) reported to have work experience between 6 – 10 years. Twenty-nine percent (29%) indicated that they have been employed between 1 – 5 years. The smallest percentage of respondents (6%) has less than one year work experience.

Table 4.13

Percentage of Respondents According to Years of Work Experience

Years	No.	%
Under 1 Year	19	5.90
1 – 5 Years	93	28.88
6 – 10 Years	100	31.06
10 Years or More	110	34.16
Total	322	100.00

Years in current position

Table 4.14 shows that 44% of the respondents have been in their current position for 1 – 5 years. The percentage of respondents who have been employed in their current positions for 6 – 10 years is approximately 23% while about 24% reported that they have been in their current positions for 10 years or more. The smallest percentage (9%) of respondents has been employed in their current positions for less than a year.

Table 4.14

Percentage of Respondents According to Years in Current Position

Years	No.	%
Under 1 Year	30	9.32
1 – 5 Years	143	44.41
6 – 10 Years	73	22.67
10 Years or More	76	23.60
Total	322	100.00

Years of computer use

Table 4.15 shows that 66% of respondents reported that they have used the computer in the workplace for 5 or more years. About 16% of the respondents indicated 1 – 3 years of computer use in the workplace while 15% reported between 3 – 5 years of computer use the in the workplace. The smallest number of respondents (3%) reported less than 1 year of computer use in the workplace.

Table 4.15

Percentage of Respondents According to Years of Computer Use in the Workplace

Years	No.	%
Under 1 Year	9	2.79
1 – 3 Years	51	15.84
3 – 5 Years	47	14.60
5 Years or More	215	66.77
Total	322	100.00

IT training in the past year

Table 4.16 shows that a large percentage of respondents (73%) reported that they did not attend any IT training during the past year.

Table 4.16:

Percentage of Respondents According to IT Training Attended in the Past Year

IT training	No.	%
Yes	86	26.71
No	236	73.29
Total	322	100.00

Prior IT training

The study required respondents to report IT training they had attended in the past five years. Table 4.17 shows that about 42% of respondents reported that they have attended IT training once or twice in the past five years while 27% never attended any IT training in the past five years. About 25% attended 3 – 4 IT training courses and 3% had undergone IT training 5 or 6 times in the past 5 years. The smallest number of respondents (2%) had attended more than six IT training courses in the past five years.

Table 4.17

Percentage of Respondents According to Prior Training in IT

IT training in past 5 years	No.	%
None	87	27.10
1 – 2	135	42.06
3 –4	81	25.23
5 – 6	11	3.43
More than 6	7	2.18
Total	321	100.00

Preference for IT training

The respondents were requested to identify their preference for frequency of IT training (See Table 4.18). More than half of the respondents (54%) specified that IT training be provided every six months. Sixty-five respondents (20%) preferred to attend IT training 3 – 4 times in a year while 5% of respondents preferred IT training once a month.

An analysis of the 13% response to "others" found the following preferences for IT training: whenever necessary, whenever a new software is introduced or once a year.

Table 4.18

Percentage of Respondents According to Preference for IT Training

Preference	No.	%
Once a month	17	5.28
Once every two months	25	7.76
3 – 4 times a year	65	20.19
Every 6 months	173	53.73
Others	42	13.04
Total	322	100.00

Method of learning IT

In addition to preference for IT training, respondents were also requested to state their preferred method of learning IT. Table 4.19 shows that more than 80% of respondents reported that they preferred to learn IT through facilitated learning with an instructor. Approximately 10% preferred self-study computer-based learning and the smallest percentage of respondents (2%) indicated that they preferred learning IT via distance learning through the Internet or corporate Intranet.

Table 4.19

Percentage of Respondents According to Method of Learning IT

Method	No.	%
Self-study computer based learning	31	9.66
Facilitated learning with instructor	282	87.85
Distance learning via the Internet or Intranet	8	2.49
Total	321	100.00

Learned computer skills

The last question requested the respondents to indicate the manner that they have acquired most of their computer skills. Table 4.20 shows that 64% of respondents reported that most of their computer skills were acquired on-the-job while 14% indicated that they acquired most computer skills on their own. About 12% acquired most computer skills through formal education and 9% acquired computer skills through formal training. This finding substantiates the findings of prior studies where computer skills are mostly acquired on-the-job (Erickson, 1996; Moore & Johnson, 1999; Yow, 2000).

Table 4.20

Percentage of Respondents According to Method of Acquiring IT Skills

Method	No.	%
Formal Education	40	12.42
Formal Training	30	9.32
On-the-job	206	63.97
On my own	46	14.29
Total	322	100.00

Task Performance of Competency Categories and Related IT Competencies

This section will answer research question 1:

"What is the frequency of performing tasks using IT?"

Figure 4.14 and Table 4.21 depict the answers to the research question that was designed to determine the frequency of performing a task and its related IT competency. A list of 45 IT competencies were grouped into 10 categories of tasks in Section four of the Information Technology Competency Questionnaire (ITCQ). Respondents were requested to indicate the frequency of task performance on a scale of 1 to 5 where 1 indicated a task that is never performed and 5 as very often performed on the job.

Ranking of overall mean score task performance for competency categories

The overall mean score for the 10 competency categories are presented in Figure 4.14. In order to determine mean score for overall category, each IT competency statement was calculated for mean and prepared for overall category mean.

The tasks/IT competencies often performed by respondents are in the competency category of "Word processing" followed by the competency category of "Communications". The analysis shows that respondents reported the competency categories of "Manage files and records", "Basic computer maintenance, security and troubleshooting", "Perform financial functions", "Monitor activities and events" and "Internet research" as sometimes performed in the workplace. The competency categories of "Presentation" and "Desktop publishing" are rarely performed. The lowest mean is reported for the competency category of "Develop Web page" indicating that respondents never perform this task and its related IT competencies.

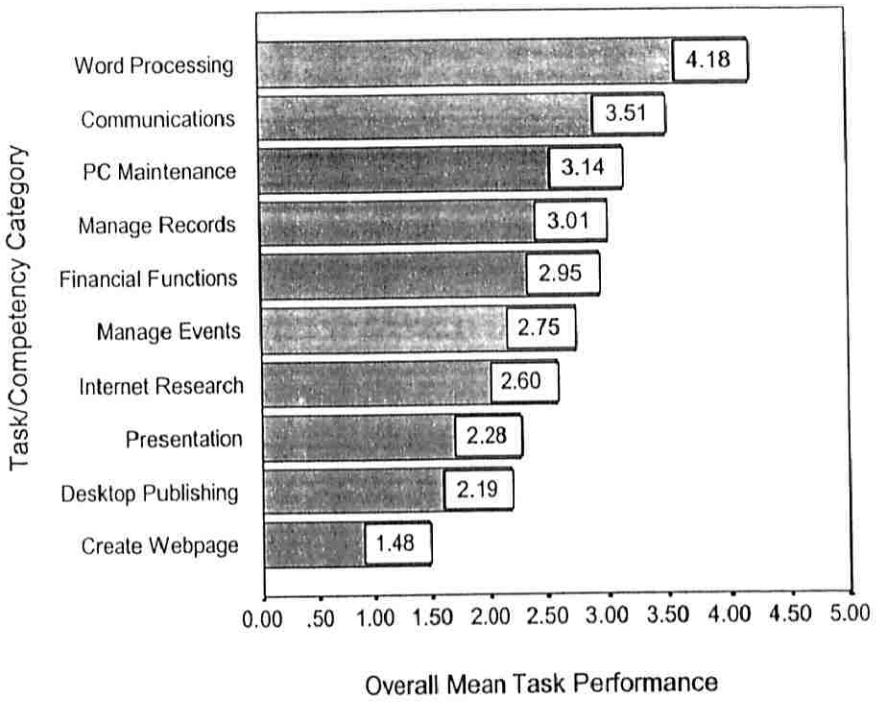

Figure 4.15 Ranking of overall mean scores for task performance (n = 319)

Frequency distribution for performance of tasks and its related IT competencies

The data were analyzed to determine the frequency of performing each task and its related IT competencies. Table 4.21 shows the frequencies, means and standard deviations for performance of each task and IT competency.

Table 4.21 shows that more than 75% of the respondents reported that they often performed five competencies from the "Word processing" competency category. These five competencies are "create documents", "use formatting features", "create forms", "proofread documents" and "use keyboarding technique".

Table 4.21

Frequency Distribution of Task Performance and Related IT Competencies

Task/IT Competency	No.	*Often* %	*Sometimes* %	*Rarely* %	*Never* %	*M*	*SD*
Word Processing							
Create documents	322	95	4	1	-	4.67	0.60
Formatting features	322	95	4	1	-	4.64	0.63
Advanced editing features	322	51	33	13	3	3.55	1.08
Create forms (insert and modify tables)	322	75	22	2	1	4.18	0.86
Insert documents	322	53	35	9	3	3.65	1.06
Proofread documents	322	83	12	4	1	4.29	0.92
Keyboarding technique	321	84	11	2	3	4.32	0.98
Communications							
Create e-mail messages	322	77	17	5	1	4.15	0.98
Send e-mail	322	76	17	5	2	4.19	0.99
Organize e-mail addresses	322	57	23	13	7	3.57	1.23
Log on to a server	321	53	20	13	14	3.45	1.41
Join a listserve	320	15	22	28	35	2.23	1.19
Presentation							
Create slides	322	31	34	24	11	2.95	1.14
Create slideshow	321	22	26	27	25	2.55	1.25
Connect PC to projector	321	13	17	18	52	1.96	1.19
Create multimedia show	321	9	14	16	61	1.73	1.07
Manage Files and Records							
Manage files	322	84	11	3	2	4.29	0.90
Make backup copies of files	322	61	22	12	5	3.69	1.14
Search database for specific information	321	30	32	19	19	2.82	1.22
Produce report from database	321	21	24	25	30	2.42	1.21
Create database	321	17	23	21	39	2.22	1.20
Scan documents	320	27	24	21	28	2.62	1.36
Monitor Activities and Events							
Use electronic calendar to set appointments	322	36	16	18	30	2.81	1.55
Use electronic calendar to follow-up Activities	322	33	17	18	32	2.69	1.50

(table continues)

Task/IT Competency	No.	*Often* %	*Sometimes* %	*Rarely* %	*Never* %	*M*	*SD*
Perform Financial Functions							
Create spreadsheet	322	49	23	16	12	3.30	1.31
Format cells	322	43	26	18	13	3.16	1.29
Use formulae	322	32	32	21	15	2.96	1.25
Create charts	322	21	38	23	18	2.71	1.15
Insert spreadsheet into word processing document	321	21	29	29	21	2.56	1.18
Internet Research							
Access Web sites	322	38	27	18	17	3.01	1.31
Use bookmarks	322	19	26	23	32	2.39	1.26
Online travel arrangement	322	9	13	18	60	1.75	1.09
Locate information using search engines	322	38	27	15	20	3.00	1.36
Download from the Internet	321	33	27	18	22	2.84	1.34
Basic Computer Maintenance, Security and Troubleshooting							
Perform basic maintenance	322	48	28	14	10	3.35	1.24
Protect PC against viruses	321	49	27	14	10	3.36	1.24
Customize desktop display setting	321	41	31	17	11	3.18	1.22
Use self-help resources to solve computer problems	321	20	39	26	15	2.69	1.04
Run operating system tools	321	29	36	22	13	2.89	1.13
Use security features in PC	320	45	25	18	12	3.26	1.30
Train new staff on the use of related softwares	322	11	30	23	36	2.18	1.10
Desktop Publishing							
Create newsletter	320	14	23	14	49	2.08	1.24
Use graphic files	319	15	28	25	32	2.30	1.16
Develop Web Page							
Create Web page	321	3	11	12	74	1.45	0.86
Upload files to Web server	321	4	11	14	71	1.51	0.92

For the competency category of "Communications" and its related IT competencies more than 75% of the respondents indicated that they often "Create e-mail messages" and "Send e-mail". More than 50% reported that they often "Organize e-mail addresses" and

"Log on to a server". However, a small percentage of respondents (15%) reported that they often "Join a listserve".

In the category of "Presentation", only 31% of the respondents indicated that they often "Create slides" in their work. A smaller percentage of respondents (14%) reported that they "Create slideshow" in their work and 13% reported that they "Connect PC to projector" in their work. Only 9% reported that they often "Create multimedia show".

The highest percentage of respondents (85%) indicated that they often "Manage files" in their work. The second highest percentage (62%) reported that they often "Make backup copies of files" and 30% reported that they often "Search database for specific information". A small percentage of respondents (21%) often "Produce report from database" while 17% reported that they often "Create database". About 27% of the respondents often "Scan documents" in their work.

In the category of "Monitor activities and events", it was found that half of the respondents (53%) reported that they sometimes or often "Use electronic calendar to set appointments" and 50% of the respondents indicated that they sometimes or often "Use electronic calendar to follow-up activities".

Approximately 40% of the respondents indicated that they often "Create spreadsheet" and "Format cells". The respondents also reported (32%) that they often "Use formulae" in performing financial functions while 21% often "Create charts" and "Insert spreadsheet into word processing documents".

In the competency category of "Internet research", it was reported that 30% or more of the respondents often performed "Access Web sites" and "Download from the Internet" in their work. Although 28% of the respondents often "Locate information using search engines", only 19% often "use bookmarks" when performing "Internet research".

The smallest percentage of respondents (9%) reported that they often perform "Online travel arrangement" in their work.

Table 4.21 also shows that 40% or more of the respondents often "Perform basic maintenance", "Protect PC against viruses", "Customize desktop display setting" and "Use security features in PC". Twenty-nine percent (29%) reported that they often "Run operating system tools" and 20% of the respondents indicated that they often "Use self-help resources to solve computer problems". The smallest percentage or 11% of the respondents reported that they often performed the task of "Train new staff on the use of related softwares.

The IT competencies related to "Desktop publishing" shows that 14% of the respondents indicated that they often "Create newsletter" in their work. A similar percentage of respondents (15%) reported that they often "Use graphic files" in their work.

The last competency category of "Develop Web page" showed contrasting results where only 3% of the respondents reported that they often "Create Web page" while 74% reported that they never performed this task. A similar percentage (4%) of respondents reported that they often "Upload files to Web server" while 71% never performed this task.

When analyzing the mean scores it was found that 12 out of the 45 competencies were ranked as "Very often" or "Often" performed competencies. The competencies that were "Very Often" or "Often" performed included all 7 competencies from the "Word Processing" category, 3 competencies from the "Communications" category and 2 competencies from the category of "Manage files and records".

The mean scores show that 21 competencies were ranked as "Sometimes" performed by administrative support staff. Out of these 21 competencies, 1 competency was from the "Communications" category, 2 competencies from "Presentation", 2

competencies from "Manage files and records", 2 competencies from "Monitor activities and events", 5 competencies from "Perform financial functions", 3 competencies from "Internet research", and 6 competencies from "Basic computer maintenance, security and troubleshooting".

Ten competencies were ranked as "Rarely" performed by respondents. Out of these 10 competencies, 1 competency was from the "Communications" category, 1 competency from "Basic computer maintenance, security and troubleshooting", 2 competencies from "Manage files and records", 2 competencies from "Presentation", 2 competencies from "Internet research" and 2 competencies from "Desktop publishing".

Only 2 competencies were ranked as "Never" performed in the work of respondents. Both competencies are from the category of "Develop Web page".

The following list ranks the IT-related competencies according to frequency of performance:

1. Create documents
2. Use formatting features
3. Keyboarding technique
4. Proofread documents
5. Manage files
6. Send e-mail
7. Create forms (insert & modify tables)
8. Create e-mail messages
9. Make backup copies of files
10. Insert documents
11. Organize e-mail addresses
12. Advanced editing features
13. Log on to a server
14. Protect PC against viruses
15. Perform basic maintenance
16. Create spreadsheet
17. Use security features in PC
18. Customize desktop display setting
19. Format cells
20. Access Web sites
21. Locate information using search engines
22. Use formulae
23. Create slides

24. Run operating system tools
25. Download from the Internet
26. Search database for specific information
27. Use electronic calendar to set appointments
28. Create chart
29. Use electronic calendar to follow-up activities
30. Use self-help resources to solve computer problems
31. Scan documents
32. Insert spreadsheet into word processing documents
33. Create slideshow
34. Produce report from database
35. Use bookmarks
36. Use graphic files
37. Join a listserve
38. Create database
39. Train new staff on the use of related softwares
40. Create newsletter
41. Connect PC to projector
42. Online travel arrangement
43. Create multimedia show
44. Upload files to Web server
45. Create Web page

Task Importance of Competency Categories and Related IT Competencies

The following section answers research question 2:

"What tasks are perceived as important?"

Figure 4.15 and Table 4.22 depict the answers to research question two, aimed at identifying the respondents' perceptions of the relevance of specific tasks and related IT competencies in the work of administrative support staff. The respondents were requested to determine task importance using a scale of 1 to 5 where 5 denotes very important and 1 as not important at all. For the purpose of data analysis, the mean importance score for each competency was calculated.

Ranking for overall mean score task importance of competency categories

Figure 4.15 presents the overall mean score task importance of the 10 competency categories and its related IT competencies. The "Word processing" and "Communications" competency categories with mean scores from 3.63 – 4.14 indicate that both competency categories with the related IT competencies are perceived as important in the work of respondents. The competency categories with mean scores from 2.51 – 3.50 are perceived as "Average importance" and these are the competency categories of "Basic computer maintenance, security and troubleshooting", "Manage files and records", "Perform financial functions", "Manage events and activities", "Internet research" and "Presentation". The competency categories of "Desktop publishing" and "Develop Web page" are perceived as of "Little importance" with an overall mean of 2.56 and 2.18 respectively.

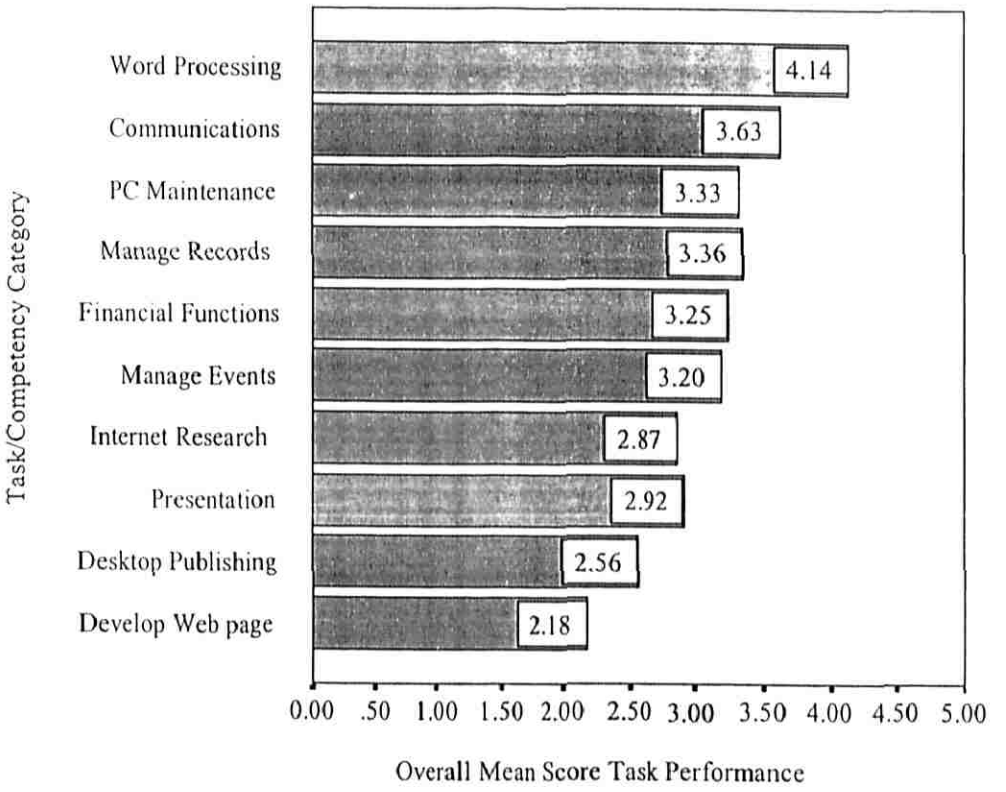

Figure 4.15 Ranking of overall mean scores for task importance (n = 317)

Frequency distribution for perceived tasks importance and its related IT competencies

The frequency distributions, means and standard deviations were calculated to identify the respondents' perceived importance for each IT competency (See Table 4.22).

Table 4.22

Frequency Distribution for Perceived Importance of Tasks and Related IT Competencies

Task/IT Competency	No.	Important %	Average importance %	Little importance %	Not important %	*M*	*SD*
Word Processing							
Create documents	322	93	5	2	-	4.47	0.69
Use formatting features	322	91	8	1	-	4.47	0.68
Advanced editing features	322	13	33	35	19	4.34	0.86
Create forms (insert and modify tables)	322	77	20	3	-	4.28	0.95
Insert documents	322	61	27	11	1	4.23	0.87
Proofread documents	322	85	9	5	1	4.16	0.91
Keyboarding technique	321	83	11	3	3	4.10	0.95
Communications							
Create e-mail messages	322	77	16	6	1	4.10	0.95
Send e-mail	322	81	14	4	1	4.16	0.91
Organize e-mail addresses	322	60	23	12	5	3.66	1.15
Log on to a server	321	57	22	12	9	3.53	1.25
Join a listserve	320	24	29	28	19	2.64	1.16
Presentation							
Create slides	322	48	28	18	6	3.34	1.11
Create slideshow	321	39	29	19	13	3.08	1.23
Connect PC to projector	321	32	23	22	23	2.75	1.29
Create multimedia show	320	27	22	23	28	2.54	1.27
Manage Files and Records							
Manage files	322	84	13	2	1	4.23	0.87
Make backup copies of files	322	72	18	8	2	3.92	1.03
Search database for specific information	320	44	29	17	10	3.19	1.15
Produce report from database	319	37	28	21	14	2.95	1.17
Create database	321	33	27	20	20	2.80	1.22
Scan documents	320	36	27	20	17	2.99	1.30
Monitor Activities and Events							
Use electronic calendar to set appointments	321	49	18	19	14	3.26	1.37
Use electronic calendar to follow-up activities	321	45	20	20	15	3.16	1.37

(table continues)

Task/IT Competency	No.	Important %	Average importance %	Little importance %	Not important %	*M*	*SD*
Perform Financial Functions							
Create spreadsheet	322	55	25	14	6	3.47	1.14
Format cells	322	52	27	13	8	3.41	1.15
Use formulae	322	46	28	16	10	3.29	1.19
Create charts	322	39	34	17	10	3.12	1.12
Insert spreadsheet into word processing document	321	34	33	21	12	2.96	1.13
Internet Research							
Access Web sites	322	41	30	17	12	3.13	1.21
Use bookmarks	321	26	30	24	20	2.68	1.21
Online travel arrangement	321	23	24	23	30	2.44	1.24
Locate information using search engines	322	40	26	19	15	3.07	1.28
Download from the Internet	322	36	30	20	14	2.99	1.23
Basic Computer Maintenance, Security and Troubleshooting							
Perform basic maintenance	322	58	24	14	4	3.55	1.10
Protect PC against viruses	321	66	19	11	4	3.81	1.11
Customize desktop display setting	321	39	31	23	7	3.16	1.14
Use self-help resources to solve computer problems	321	37	37	19	7	3.13	1.06
Run operating system tools	321	41	34	18	7	3.22	1.09
Use security features in PC	320	54	26	15	5	3.57	1.15
Train new staff on the use of related softwares	322	29	30	21	20	2.76	1.21
Desktop Publishing							
Create newsletter	319	20	29	24	27	2.50	1.20
Use graphic files	317	21	34	25	20	2.62	1.13
Develop Web Page							
Create Web page	320	14	23	23	40	2.16	1.18
Upload files to Web server	320	15	21	25	39	2.17	1.18

More than 50% percent of the respondents reported that they perceived 6 out of the 7 IT competencies in "Word processing" as important or very important. A small percentage (13%) of the respondents reported that they perceived the IT competency of "Use advanced editing features" as important in their work. The mean scores for all 7

items are above 4.00 indicating that competencies in "Word processing" are important for job performance.

Four out of the 5 IT competencies related to "Communications" show that 50% or more of the respondents perceived these competencies as important. The IT competency "Join a listserve" is perceived as important by 24% of the respondents. The mean scores show a similar picture. All mean scores of IT competencies related to "Communications" are above 3.50 except "Join a listserve" that achieved a mean score of 2.64.

In the category of "Presentation", more than 50% of respondents perceived the IT competencies of "Create slides", "Create slideshow", "Connect PC to projector" and "Create multimedia show" as important or average importance. The mean scores for all four competencies are between 2.54 – 3.34 indicating that these competencies are of average importance in the work of administrative support staff.

Two IT competencies related to "Manage files and records" ("Manage files" and "Make backup copies of files") are perceived as important by 70% or more of the respondents. Less than 50% of the respondents however rated the IT competencies of "Search database for specific information", "Produce report from database", "Create database" and "Scan Documents" as important. The mean scores for all competencies are between 2.99 – 4.23.

Approximately 50% of the respondents perceived the IT competencies related to "Monitor activities and events" as important. The mean scores for both competencies are above 3.00 indicating that both competencies are of average importance.

The mean scores for all IT competencies related to "Perform financial functions" are between 2.96 to 3.47 indicating that these IT competencies are perceived as average in terms of importance. Out of the 5 IT competencies, the 3 IT competencies of "Create

spreadsheet" and "Format cells" are perceived as important by more than 50% of the respondents.

Four out of the 5 IT competencies related to "Internet research" obtained mean scores between 2.68 – 3.13. The importance placed on these 4 IT competencies is average. Only the IT competency "Online travel arrangement" is perceived as of little importance based on the mean score of 2.44.

The IT competencies of "Perform basic maintenance", "Protect PC against viruses" and "Use security features in PC" are perceived as important by more than 50% of the respondents. In addition, the mean scores of these 3 IT competencies are above 3.50 indicating average importance. The other 4 IT competencies obtained mean scores between 2.76 – 3.22 which means that these IT competencies are only of average importance in the work of respondents.

The mean scores for IT competencies related to "Desktop publishing" are between 2.50 – 2.62. These IT competencies are perceived as of average importance. The 2 IT competencies related to "Develop Web page" are perceived as of "Little importance" in the work of respondents with mean scores of 2.16 and 2.17.

The following list ranks the tasks and related IT competencies according to importance:

Rank	Competency
1.	Create documents
2.	Use formatting features
3.	Proofread documents
4.	Keyboarding technique
5.	Manage files
6.	Send e-mail
7.	Create e-mail messages
8.	Create forms (insert & modify tables)
9.	Make backup copies of files
10.	Protect PC against viruses
11.	Insert documents

12. Organize e-mail addresses
13. Advanced editing features
14. Use PC security features
15. Perform basic maintenance
16. Log on to server
17. Create spreadsheet
18. Format cells
19. Create slides
20. Use formulae
21. Use electronic calendar to set appointments
22. Run operating system tools
23. Search database for specific information
24. Customize desktop display setting
25. Use electronic calendar to follow-up activities
26. Use self-help resources to solve computer problems
27. Access Web sites
28. Create chart
29. Create slideshow
30. Locate information using search engines
31. Download from the Internet
32. Scan documents
33. Insert spreadsheet into word processing documents
34. Produce report from database
35. Create database
36. Train new staff on the use of related softwares
37. Connect PC to projector
38. Use bookmarks
39. Join a listserve
40. Use graphic files
41. Create multimedia show
42. Create newsletter
43. Online travel arrangement
44. Upload files to Web server
45. Create Web page

Self-Rated Ability in Performance of Tasks and Related IT Competencies

This section answers research question 3:

"What is the perceived level of IT competency among administrative support staff in networked environments?"

Figure 4.16 and Table 4.23 depict the answer to the research question designed to obtain the respondent's self-rated ability for the 45 IT competencies. Respondents rated their competency between 5 to 1 where 5 denotes Exceptional and 1 as Unacceptable. For the purpose of data analysis, the mean score for each competency was calculated. Figure 4.16 displays the ranking of overall mean scores for the respondents' ratings of IT competency:

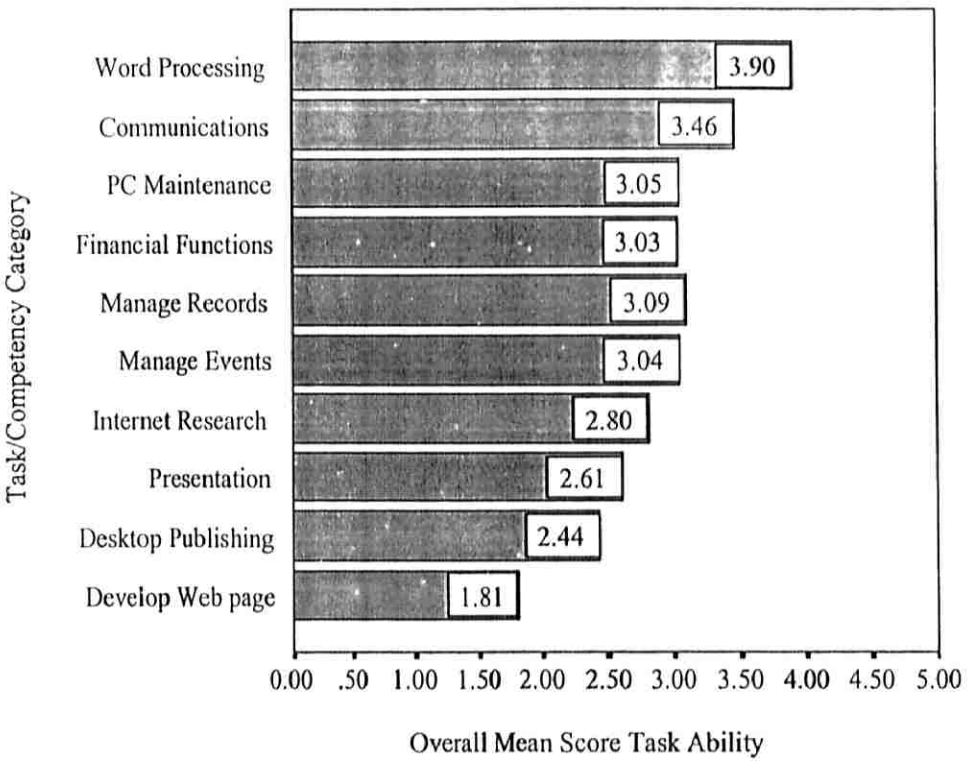

Figure 4.16 Ranking of overall mean scores for competence in task performance (n = 319)

Figure 4.16 shows that respondents rated their abilities as "Proficient" in performing tasks and IT competencies related to "Word processing" and "Communications". The overall mean scores for both categories were above 3.51. The overall mean scores for the competency categories of "Basic computer maintenance, security and troubleshooting", "Perform financial functions", "Manage files and records", "Manage events and activities", "Internet research" and "Presentation" were between 2.51 – 3.00. This means that respondents rated their abilities in performing the said tasks/IT competencies as "Acceptable". Respondents however rated their abilities to perform tasks/IT competencies in the "Desktop publishing" competency category as "Marginal". The competency category of "Develop Web page" achieved a mean score of 1.75 with a standard deviation of .90, which means that the respondents rated their ability between "Unacceptable" and "Marginal".

Frequency distribution for respondent's self-rated ability

The data were calculated for frequencies, percent proportions, mean scores and standard deviations to determine respondents' ratings of competency in task performance and the related IT competencies. Table 4.23 presents the frequency distribution of the respondents self-rated ability for each IT competency:

Table 4.23:

Frequency Distribution for Respondent's Self-Rated Ability in Performance of Tasks and its Related IT Competencies

Task/IT Competency	No.	*Proficient* %	*Acceptable* %	*Marginal* %	*Unacceptable* %	*M*	*SD*
Word Processing							
Create documents	322	78	21	1	-	4.15	.77
Use formatting features	322	79	20	1	-	4.17	.77
Advanced editing features	322	45	40	13	2	3.41	.92
Create forms (insert and modify tables)	322	66	29	5	-	3.88	.86
Insert documents	322	52	37	10	1	3.57	.94
Proofread documents	322	71	25	4	-	3.97	.85
Keyboarding technique	321	78	19	2	1	4.12	.88
Communications							
Create e-mail messages	322	67	28	4	1	3.91	.90
Send e-mail	322	69	27	3	1	3.98	.92
Organize e-mail addresses	322	54	31	11	4	3.57	1.06
Log on to a server	321	45	32	13	10	3.29	1.19
Join a listserve	321	16	40	23	21	2.55	1.07
Presentation							
Create slides	322	34	44	15	7	3.14	1.03
Create slideshow	321	27	41	18	14	2.88	1.10
Connect PC to projector	320	15	30	27	28	2.35	1.11
Create multimedia show	320	11	25	24	40	2.08	1.09
Manage Files and Records							
Manage files	321	72	25	2	1	3.99	.89
Make backup copies of files	321	57	31	10	2	3.67	1.01
Search database for specific information	319	28	41	19	12	2.92	1.06
Produce report from database	318	22	37	22	19	2.64	1.10
Create database	320	17	33	23	27	2.45	1.13
Scan documents	319	25	33	24	18	2.79	1.24
Monitor Activities and Events							
Use electronic calendar to set appointments	320	38	29	19	14	3.06	1.26
Use electronic calendar to follow-up activities	320	36	31	18	15	3.01	1.26

(table continues)

Task/IT Competency	No.	*Proficient* %	*Acceptable* %	*Marginal* %	*Unacceptable* %	*M*	*SD*
Perform Financial Functions							
Create spreadsheet	322	42	35	16	7	3.28	1.12
Format cells	322	39	37	16	8	3.22	1.11
Use formulae	322	35	36	19	10	3.06	1.12
Create charts	322	26	40	23	11	2.87	1.02
Insert spreadsheet into word processing document	321	13	23	41	23	2.77	1.03
Internet Research							
Access Web sites	322	34	37	17	12	3.05	1.14
Use bookmarks	321	20	33	25	22	2.59	1.17
Online travel arrangement	321	15	32	21	32	2.34	1.15
Locate information using search engines	322	33	38	15	14	3.02	1.18
Download from the Internet	322	31	37	18	14	2.98	1.19
Basic Computer Maintenance, Security and Troubleshooting							
Perform basic maintenance	321	44	37	13	6	3.37	1.09
Protect PC against viruses	320	41	36	17	6	3.27	1.09
Customize desktop display setting	319	43	35	15	7	3.27	1.10
Use self-help resources to solve computer problems	321	17	40	32	11	2.68	.96
Run operating system tools	320	25	38	27	10	2.85	1.03
Use security features in PC	320	37	36	21	6	3.17	1.10
Train new staff on the use of related softwares	322	20	39	23	18	2.63	1.07
Desktop Publishing							
Create newsletter	320	12	35	25	28	2.34	1.08
Use graphic files	318	14	42	24	20	2.52	1.03
Develop Web Page							
Create Web page	320	5	19	26	50	1.78	.93
Upload files to Web server	320	7	18	25	50	1.83	.99

Table 4.23 shows that more than 80% of the respondents rated their ability as "Acceptable" or "Proficient" in all the 7 IT competencies from the "Word processing" competency category. The respondents also rated their abilities highly in 3 IT

competencies from the "Communications" competency category: "Create e-mail messages", "Send e-mail" and "Organize e-mail addresses". The respondents also rated their ability to "Manage files" and "Make backup copies of files" from the competency category of "Manage files and records" as "Acceptable" or "Proficient". More than 80% of the respondents rated their ability in "Perform basic maintenance" from the "Basic computer maintenance, security and troubleshooting" competency category as "Acceptable" or "Proficient".

Between 70 – 79% of the respondents rated their ability as "Acceptable" or "Proficient" in performing the following IT competencies: "Customize desktop display setting", "Log on to a server", "Create slides", "Protect PC against viruses", "Use security features in PC", "Access Web sites" and "Locate information using search engines".

Table 4.23 reveals that 65 – 69% of the respondents rated their ability in the following IT competencies as "Acceptable" to "Proficient": "Search database for specific information", "Create slideshow", "Download from the Internet", and both competencies from the "Manage events and activities" competency category.

About 50% or less of the respondents rated their abilities as "Acceptable" to "Proficient" in the IT competencies of "Produce report from database", "Train new staff on the use of related softwares", "Scan documents", "Use self-help resources to solve computer problems", "Join a listserve", "Use graphic files", "Use bookmarks", "Create database", "Create newsletter", "Online travel arrangement", and "Connect PC to projector".

Less than 40% of the respondents indicated that their ability in the IT competencies of "Create multimedia show" and "Insert spreadsheet into word processing document" as "Acceptable" to "Proficient".

For the competency category of "Develop Web page", less than 30% of the respondents rated their ability in the related IT competencies of "Create Web page" and "Upload files to Web server" as "Acceptable" to "Proficient" while the remaining 50% of the respondents believed that their ability in both IT competencies were "Unacceptable".

The following tasks and IT related competencies are ranked according to the self-reported ability of respondents:

Rank	Competency
1.	Use formatting features
2.	Create documents
3.	Keyboarding technique
4.	Manage files
5.	Send e-mail
6.	Proofread documents
7.	Create e-mail messages
8.	Create forms (insert & modify tables)
9.	Make backup copies of files
10.	Insert documents
11.	Organize e-mail addresses
12.	Advanced editing features
13.	Perform basic maintenance
14.	Log on to server
15.	Create spreadsheet
16.	Customize desktop display setting
17.	Protect PC from viruses
18.	Format cells
19.	Use PC security features
20.	Create slide
21.	Use electronic calendar to set appointments
22.	Use formulae
23.	Access Web sites
24.	Locate information using search engines
25.	Use electronic calendar to follow-up activities
26.	Download from the Internet
27.	Search database for specific information
28.	Create slideshow
29.	Create chart
30.	Run operating system tools
31.	Scan documents
32.	Insert spreadsheet into word processing documents
33.	Use self-help resources to solve computer problems
34.	Produce report from database
35.	Train new staff on the use of related softwares

36. Use bookmarks
37. Join a listserve
38. Use graphic files
39. Create database
40. Connect PC to projector
41. Create newsletter
42. Online travel arrangement
43. Create multimedia show
44. Upload files to Web server
45. Create Web page

Determine Priority Areas for Training in IT

This section answers research question 4:

"What IT competencies are needed by administrative support staff employed in networked environments?"

The purpose of question 4 was to determine the priority areas where IT training is needed by respondents in this study. The method used to identify needed IT competencies is by calculating for discrepancies between task importance and ability in task performance. Each respondent's score of ability is subtracted from task importance to obtain individual discrepancy scores (DS). The discrepancy scores are then converted to Weighted Discrepancy Scores (WDS) by multiplying the discrepancy scores by the mean task importance. The formula for the calculation of discrepancy scores is shown below:

1. *Task importance – Task Ability = Discrepancy Score*
2. *Discrepancy Score X Mean Task Importance = Weighted Discrepancy Score*

The highest positive mean score of WDS determines training priority (Borich, 1980). The data in Table 4.24 rank the overall DS for the 10 competency categories. The MWDS ranged from .511 to 0.036. Word Processing has the highest positive MWDS with a standard deviation of .8671. However, the range of DS for the "Word processing" competency category is rather wide, that is, between a minimum of –1.32 and a maximum of 3.52. This indicates that respondents' priorities for training in "Word processing" differ due to the different levels of ability and importance placed on the task. Nevertheless, no competency category has a MWDS below zero suggesting that all respondents do require training or retraining in all the 10 competency categories and their related IT competencies. This finding also indicates that training must be tailored to meet individual needs.

Table 4.24

Ranking of Mean Weighted Discrepancy Scores (MWDS) for Competency Categories (n = 307)

Categories	No.	Min MWDS	Max MWDS	Mean WDS	SD
Word processing	321	-1.32	3.54	.51	.87
Develop Web page	320	-1.39	1.85	.17	.44
Presentation	320	-.58	1.15	.11	.29
Manage files and records	316	-.92	.84	.08	.19
Basic computer maintenance, security and troubleshooting	317	-.51	.84	.08	.19
Perform financial functions	321	-.93	.93	.07	.22
Manage events and activities	320	-.93	1.25	.05	.29
Desktop publishing	317	-.79	1.56	.05	.30
Communications	321	-.57	.71	.04	.16
Internet research	321	-1.47	1.32	.04	.36

The ranking of Weighted Discrepancy Scores for all 45 IT competencies can be viewed in Appendix M.

Using analysis of variance, the WDS for all 45 competencies were tested for significant differences across the various demographic variables. The DS for two competency categories were found to be significantly different according to the respondent's age group: "Manage activities and events" (p = .043) and "Internet research" (p = .027). For the "Manage activities and events" competency category significant differences in the WDS were found for the age groups of 20 – 30 & 31 – 40 (p = .027) and

20 – 30 & 41 – 50 (p = .017). In the competency category of "Internet research", significant differences in WDS were found among the respondent's age group: 20 – 30 & 31 – 40, p = .009. It must be noted here that although the overall F test of DS for "Word processing" competency category is not significant (p = .203) the post hoc test showed that there was a significant difference between the age group of 20 – 30 & 41 – 50 (p = .033).

Significant differences in DS of the "Word processing" competency category (p = .007) occurred across job title of respondents: Stenographer & Executive Secretary (p = .020); Stenographer & Administrative Assistant (p = .023); Secretary & Executive Secretary (p = .003); Secretary & Administrative Assistant (p = .004); Executive Secretary & Others (p = .040); Others & Administrative Assistant (p = .043).

Significant differences in DS were found according to years in current position for the competency categories of "Word processing" (p = .039), "Manage activities and events" (p = .017) and "Basic computer maintenance, security and troubleshooting" (p = .045) were found. The post hoc tests showed that for the "Word processing" category, significant differences in DS occurred across years in current position: 1 – 5 years & 6 – 10 years (p = 015); 1 – 5 years & more than 10 years (p = .008). For the competency category of "Manage activities and events", significant differences in DS also occurred between respondents with 1 – 5 years and more than 10 years (p = .003). Discrepancy scores for the competency category of "Internet research" may not overall be significantly different across respondents' years in current position but post hoc tests revealed that there is a significant difference in DS between respondents with 1 – 5 years experience in current position and respondents with 6 – 10 years (p = .027).

Significant Differences in Mean Score Task Performance Across Demographic and Situational Variables

The following section answers research question 5:

"Is there a significant difference in the mean score task performance according to the variables of highest education level, job title, age group, years in current position, related work experience, years of computer use, IT training attended, preference for IT training, method of learning IT and method of acquiring IT skill?"

Prior researches strongly support the importance of demographic variables such as age, education level, organizational position, and training in examining end user computing behaviors (Harrison & Rainer, 1992; Simmers & Anandarajan, 2001). There is evidence to support that older employees are less comfortable with technology than younger employees (Buhendwa, 1996; Harrison & Rainer, 1992; Nickell & Pinto, 1986). Older employees are set in their behaviors suggesting that they need to exert more emotional effort to learn new behaviors. Knowles' theory of andragogy proposes that the learning style of adults are learner-centered—adults are self-directed and expect to take responsibility for decisions therefore instruction needs may be different (Andragogy, n.d.).

Tables 4.25, 4.26, 4.27, 4.28 and 4.29 depict the answers to the research question. The answers would justify that the curriculum content of training programs meet the diverse needs of administrative support staff employed in networked organizations. The mean score task performance and standard deviations for the 10 competency categories were calculated and compared across demographic and situational variables. In order to determine if the differences in the mean scores were significant, the analysis of variance was used to identify competency categories that achieve significant *p*-values. The post hoc test was then used to identify the location of the differences.

(i) The first analysis determines if there are significant differences in the mean score task performance across respondents level of education.

The mean score task performance of the 10 competency categories appear higher among respondents with higher levels of education. In order to determine if the differences were significant, the ANOVA was conducted to identify competency categories that achieved significant *p*-values. The post hoc tests were conducted to identify the exact location of the differences. Results of the ANOVA in Table 4.25 show that eight competency categories achieved significant *p*-values: "Word processing" ($F = 6.95$, $p = .000$), "Communications" ($F = 3.97$, $p = .001$), "Presentation" ($F = 3.89$, $p = .001$), "Manage files and records" ($F = 5.21$, $p = .000$), "Perform financial functions" ($F = 2.17$, $p = .046$), "Internet research" ($F = 2.79$, $p = .012$), "Basic computer maintenance, security & troubleshooting" ($F = 2.71$, $p = .014$) and "Desktop publishing" ($F = 2.62$, $p = .017$). This indicates that there were significant differences in task performance according to level of education

The post hoc analysis shows that respondents with MCE/SPM rated their mean score task performance for the competency category of "Word processing" significantly lower than other respondents: MCE/SPM & Certificate ($p = .010$); MCE/SPM & Diploma ($p = .000$); MCE/SPM & Advanced Diploma ($p = .015$) and MCE/SPM & Bachelor's degree ($p = .009$).

In the competency category of "Communications", significant differences were found in the mean score task performance between respondents with MCE/SPM & Diploma ($p = .000$); MCE/SPM & Advanced Diploma ($p = .016$) and MCE/SPM & Bachelor's degree ($p = .007$).

Table 4.25

Analysis of Variance for Mean Score Task Performance Across Respondents Level of Education (n = 311)

Source	*df*	*MS*	*F*	Sig.
Word processing				
Between Groups	6	2.239	6.95**	.000
Within Groups	314	.322		
Total	320			
Communications				
Between Groups	6	2.971	3.97**	.001
Within Groups	313	.748		
Total	319			
Presentation				
Between Groups	6	3.761	3.89**	.001
Within Groups	314	.967		
Total	320			
Manage files and records				
Between Groups	6	3.554	5.21**	.000
Within Groups	313	.682		
Total	319			
Monitor activities and events				
Between Groups	6	2.820	1.27	.269
Within Groups	315	2.215		
Total	321			
Perform financial functions				
Between Groups	6	2.404	2.17*	.046
Within Groups	314	1.111		
Total	320			
Internet research				
Between Groups	6	2.880	2.79*	.012
Within Groups	314	1.032		
Total	320			

(table continues)

Source	*df*	*MS*	*F*	Sig.
Basic computer maintenance, security and troubleshooting				
Between Groups	6	2.146	2.71*	.014
Within Groups	312	.792		
Total	318			
Desktop publishing				
Between Groups	6	2.914	2.62*	.017
Within Groups	311	1.113		
Total	317			
Develop Web page				
Between Groups	6	.405	.59	.737
Within Groups	314	.684		
Total	320			

Note. *p < .05 level, **p < .01 level

For the competency category of "Presentation", it was found that the mean score task performance of respondents with a Diploma is significantly higher than respondents with MCE/SPM (p = .000). A similar finding occurred for the competency category of "Manage files and records" between respondents with MCE/SPM and Diploma (p = .000).

Respondents with an Advanced Diploma rated their mean score task performance for the competency category of "Monitor activities and events" significantly higher than respondents with MCE/SPM (p = .013) as well as respondents with a Diploma (p = .036).

Significant differences in the mean score task performance were also found across respondents level of education for the competency category "Perform financial functions": MCE/SPM & Certificate (p = .048); MCE/SPM & Diploma (p = .001); MCE/SPM & Advanced diploma (p = .030) and MCE/SPM & Bachelor's degree (p = .036).

The competency category of "Internet research" also shows significant differences in the mean score task performance among respondents with MCE/SPM & Diploma ($p = .002$) and Professional qualification & Others ($p = .045$).

Another competency category that shows significant difference in the mean score task performance is "Basic computer maintenance, security and troubleshooting": MCE/SPM & Diploma ($p = .002$) and MCE/SPM & Bachelor's degree ($p = .007$).

For the competency category of "Desktop publishing", significant differences in task performance were found across respondent's level of education: MCE/SPM & Diploma ($p = .008$); MCE/SPM & Advanced Diploma ($p = .022$); Certificate & Diploma ($p = .038$) and Certificate & Advanced Diploma ($p = .020$).

(ii) The second analysis determines if there are significant differences in the mean score task performance across job title of respondents.

It is hypothesized that the functions of Stenographers are different than Secretary, Executive Secretary, and Executive Assistant. The mean scores for performance of the 10 competency categories appear lower among respondents with the job title of Stenographer. The results of the ANOVA in Table 4.26 show that 6 of the 10 competency categories achieved significant p-values: "Communications" ($F = 3.95$, $p = .002$), "Presentation" ($F = 3.02$, $p = .011$), "Manage files and records" ($F = 4.68$, $p = .000$), "Perform financial functions" ($F = 3.51$, $p = .004$), "Internet research" ($F = 2.72$, $p = .020$) and "Develop Web page" ($F = 3.10$, $p = .010$).

Table 4.26

Analysis of Variance for the Mean Score Task Performance Across the Job Title of Respondents (n = 313)

Source	*df*	*MS*	*F*	Sig.
Word processing				
Between Groups	5	.319	.89	.488
Within Groups	315	.359		
Total	320			
Communications				
Between Groups	5	2.983	3.95**	.002
Within Groups	314	.755		
Total	319			
Presentation				
Between Groups	5	2.985	3.02*	.011
Within Groups	315	.988		
Total	320			
Manage files and records				
Between Groups	5	3.256	4.68**	.000
Within Groups	314	.696		
Total	319			
Monitor activities and events				
Between Groups	5	4.749	2.17	.057
Within Groups	316	2.186		
Total	321			
Perform financial functions				
Between Groups	5	3.832	3.51**	.004
Within Groups	315	1.092		
Total	320			
Internet research				
Between Groups	5	2.821	2.72*	.020
Within Groups	315	1.039		
Total	320			

(table continues)

Source	*df*	*MS*	*F*	Sig.
Basic computer maintenance, security and troubleshooting				
Between Groups	5	1.221	1.51	.188
Within Groups	313	.811		
Total	318			
Desktop publishing				
Between Groups	5	.563	.49	.786
Within Groups	312	1.157		
Total	317			
Develop Web page				
Between Groups	5	2.038	3.10*	.010
Within Groups	315	.657		
Total	320			

Note. *p < .05 level, **p < .01 level

The post hoc tests identified significant differences in mean score task performance according to job title of respondents. In the competency category of "Communications", statistical differences in the mean score task performance are seen across job titles: Stenographer & Secretary (p = .000); Stenographer & Executive Secretary (p = .000); Stenographer & Administrative Assistant (p = .000); Stenographer & Executive Assistant (p = .006) and Stenographer & Others (p = .007).

In the competency category of "Presentation" significant differences in the mean score task performance occurred across job title of respondents: Stenographer & Secretary (p = .006); Stenographer & Executive Secretary (p = .004); Stenographer & Administrative Assistant (p = .027); Stenographer & Executive Assistant (p = .001); Stenographer & Others (p = .038) and Secretary & Executive Assistant (p = .037).

For the competency category of "Manage files and records", the findings show significant differences in the mean score task performance across job titles: Stenographer &

Secretary (p = .004); Stenographer & Executive Secretary (p = .001); Stenographer & Administrative Assistant (p = .006); Stenographer & Executive Assistant (p = .000); Secretary & Executive Assistant (p = .006); Executive Secretary & Others (p = .045); Administrative Assistant & Executive Assistant (p = .039) and Executive Assistant & Others (p = .002).

The post hoc test shows that significant differences in the mean score task performance occurred across job titles for the competency category of "Perform financial functions": Stenographer & Secretary (p = .021); Stenographer & Administrative Assistant (p = .001); Stenographer & Executive Assistant (p = 0.002); Stenographer & others (p = .004) and Secretary & Executive Assistant (p = .037).

The competency category of "Internet research" also shows significant differences in the mean score task performance across four job titles: Stenographer & Executive Assistant (p = .006); Secretary & Executive Secretary (p = .047); Secretary & Executive Assistant (p = .004) and Executive Assistant & Others (p = .011).

The last competency category of "Develop Web page" shows significant differences in the mean score task performance between Stenographer & Executive Assistant (p = .008); Secretary & Administrative Assistant (p = .012); Secretary & Executive Assistant (p = .002); Executive Secretary & Executive Assistant (p = .023) and Executive Assistant & Others (p = .008).

(iii) The third analysis determines if there are significant differences in the mean score task performance across age group of respondents.

It is postulated that younger employees with longer life exposure to computer technologies indicate a higher degree of confidence in technology use. The mean scores for task performance appear higher among respondents in the younger age group (Appendix

N). The results of the one-way analysis of variance in Table 4.27 and post hoc tests confirmed that 7 out of 10 competency categories achieved significant p-values. The competency categories found to be significantly different according to age group of respondents are "Word processing" (F = 3.95, p = .009), "Communications" (F = 5.38, p = .001), "Presentation" (F = 4.12, p = .007), "Manage files and records" (F = 9.43, p = .000), "Perform financial functions" (F = 12.90, p = .000), "Basic computer maintenance, security and troubleshooting" (F = 5.86, p = .001) and "Desktop publishing" (F = 6.97, p = .000).

The post hoc test identified significant differences in the mean score task performance across age group of respondents for the competency category of "Word processing": 20 – 30 & 31 – 40 (p = .033) and 20 – 30 & 41 – 50 (p = .006).

For the competency category of "Communications", significant differences in the mean score task performance occurred between respondents in the age group of 20 – 30 & 41 – 50 (p = .001); 20 – 30 & more than 51 (p = .009); 31 – 40 & 41 – 50 (p = .028) and 31 – 40 & more than 51 (p = .034).

Significant differences in the mean score task performance for the "Presentation" competency category occurred across respondents in the age group of 20 – 30 & 31 – 40 (p = .034); 20 – 30 & 41 – 50 (p = .031) and 20 – 30 & more than 51 (p = .034).

The competency category of "Manage files and records" shows significant differences in the mean score task performance according to age group of respondents: 20 – 30 & 31 – 40 (p = .000); 20 – 30 & 41 – 50 (p = .000) and 20 – 30 & more than 51 (p = .010).

Table 4.27

Analysis of Variance of the Mean Score Task Performance Across Age Group of Respondents (n = 314)

Source	*df*	*MS*	*F*	Sig.
Word processing				
Between Groups	3	1.376	3.95**	.009
Within Groups	317	.348		
Total	320			
Communications				
Between Groups	3	4.086	5.38**	.001
Within Groups	316	.759		
Total	319			
Presentation				
Between Groups	3	4.077	4.12**	.007
Within Groups	317	.990		
Total	320			
Manage files and records				
Between Groups	3	6.433	9.43**	.000
Within Groups	316	.682		
Total	319			
Monitor activities and events				
Between Groups	3	4.822	2.19	.089
Within Groups	318	2.202		
Total	321			
Perform financial functions				
Between Groups	3	13.172	12.90**	.000
Within Groups	317	1.021		
Total	320			
Internet research				
Between Groups	3	2.366	2.24	.083
Within Groups	317	1.055		
Total	320			

(table continues)

Source	*df*	*MS*	*F*	Sig.
Basic computer maintenance, security and troubleshooting				
Between Groups	3	4.581	5.86**	.001
Within Groups	315	.782		
Total	318			
Desktop publishing				
Between Groups	3	7.567	6.97**	.000
Within Groups	314	1.086		
Total	317			
Develop Web page				
Between Groups	3	1.035	1.53	.206
Within Groups	317	.675		
Total	320			

Note. *p < .05 level, **p < .01 level

The *p*-value for the "Perform financial functions" competency category is significant at the 0.01 level. The post hoc test shows that the significant differences in the mean score task performance occurred among respondents age group: 20 – 30 & 31 – 40 (p = .000); 20 – 30 & 41 – 50 (p = .000); 20 –30 & more than 51 (p = .000) and 31 – 40 & more than 51 (p = .016).

Another competency category with a significant *p*-value is "Basic computer maintenance, security and troubleshooting". The post hoc analysis shows that there are significant differences in the mean score task performance across age group of respondents: 20 – 30 & 31 – 40 (p = .000); 20 – 30 & 41 – 50 (p = .019) and 20 – 30 & more than 51 (p = .020).

The competency category of "Desktop publishing" also shows significant differences across age group of respondents: 20 – 30 & 31 – 40 (p = .002); 20 – 30 & 41 – 50 (p = .000) and 20 – 30 & more than 51 (p = .013).

(iv) The fourth analysis determines if there are significant differences in the mean score task performance across respondents years in current position.

Table 4.28 shows that six competency categories achieved significant p-values: "Word processing" ($F = 4.81$, $p = .003$); "Communications" ($F = 4.10$, $p = .007$); "Presentation" ($F = 3.60$, $p = .014$); "Manage files and records" ($F = 4.70$, $p = .003$); "Perform financial functions" ($F = 13.53$, $p = .000$) and "Desktop publishing" ($F = 7.30$, $p = .000$).

The post hoc analysis shows that the competency category of "Word processing" shows significant differences in the mean score task performance between respondents with under 1 year & 1 – 5 years in current position ($p = .003$); under 1 year & 6 – 10 years ($p = .024$) and 1 – 5 years & more than 10 ($p = .004$).

For the competency category of "Communications", significant differences in the mean score task performance occurred according to respondents years in current position: 1 – 5 & more than 10 years ($p = .003$) and 6 – 10 years & more than 10 years ($p = .002$).

Significant differences in the mean score task performance also occurred among respondents for the competency category of "Presentation": 1 – 5 years & more than 10 years in current position ($p = .002$) and 6 – 10 years & more than 10 years ($p = .021$).

The mean score task performance of respondents with 1 – 5 years in current position differs significantly from respondents with more than 10 years ($p = .000$) for the competency category of "Manage files and records". There is also a significant difference in the mean score task performance between respondents with 6 – 10 years and those respondents with more than 10 years in current position ($p = .019$).

Table 4.28

Analysis of Variance of the Mean Score Task Performance Across Respondents Years in Current Position (n = 314)

Source	*df*	*MS*	*F*	Sig.
Word processing				
Between Groups	3	1.664	4.81**	.003
Within Groups	317	.346		
Total	320			
Communications				
Between Groups	3	3.147	4.10**	.007
Within Groups	316	.768		
Total	319			
Presentation				
Between Groups	3	3.583	3.60*	.014
Within Groups	317	.995		
Total	320			
Manage files and records				
Between Groups	3	3.345	4.70**	.003
Within Groups	316	.711		
Total	319			
Monitor activities and events				
Between Groups	3	2.132	.96	.413
Within Groups	318	2.227		
Total	321			
Perform financial functions				
Between Groups	3	13.742	13.53**	.000
Within Groups	317	1.016		
Total	320			
Internet research				
Between Groups	3	1.860	1.76	.156
Within Groups	317	1.060		
Total	320			

(table continues)

Source	*df*	*MS*	*F*	Sig.
Basic computer maintenance, security and troubleshooting				
Between Groups	3	2.219	2.76	.042
Within Groups	315	.804		
Total	318			
Desktop publishing				
Between Groups	3	7.903	7.30**	.000
Within Groups	314	1.083		
Total	317			
Develop Web page				
Between Groups	3	1.160	1.72	.162
Within Groups	317	.674		
Total	320			

Note. *p < .05 level, **p < .01 level

The mean score task performance of respondents with more than 10 years in current position differ significantly from other respondents for the competency category of "Perform financial functions": Under 1 year (p = .000); 1 – 5 years (p = .000) and 6 - 10 years (p = .001).

The competency category of "Desktop publishing" shows significant differences in the mean score performance of tasks and related IT competencies according to years in current position: 1 – 5 years & 6 – 10 years (p = .001) and 1 – 5 years & more than 10 years (p = .000).

(v) The fifth analysis determines if there are significant differences in the mean score task performance across related work experience of respondents.

The mean score task performance of respondents with 1 – 5 years of related work experience appear higher than respondents who have 6 – 10 years or more than 10 years of related work experience. The results of the ANOVA in Table 4.29 confirms that there are significant differences in the mean score task performance according to related work experience of respondents for 6 competency categories: "Communications" (F = 4.22, p = .006); "Presentation" (F = 4.58, p = .004); "Manage files and records" (F = 5.65, p = .001); "Perform financial functions" (F = 9.95, p = .000); "Basic computer maintenance, security and troubleshooting" (F = 2.75, p = .043) and "Desktop publishing" (F = 8.42, p = .000).

The post hoc test revealed that significant differences in the mean score task performance were found across respondents related work experience for the "Communications" competency category: 1 – 5 years & more than 10 years (p = .015) and 6 – 10 years & more than 10 years (p = .001).

The "Presentation" competency category again shows significant difference in the mean score task performance across respondents related work experience: 1 – 5 & more than 10 years (p = .001) and 6 – 10 years & more than 10 years (p = .004).

For the competency category of "Manage files and records", the mean score task performance of respondents with under 1 year and 1 – 5 years of related work experience are found to be significantly higher than respondents with more than 10 years related work experience: Under 1 year & more than 10 years (p = .047); 1 – 5 & 6 – 10 (p = .025) and 1 – 5 years & more than 10 years (p = .000).

Table 4.29

Analysis of Variance of the Mean Score Task Performance Across Respondents Related Work Experience (n = 315)

Source	*df*	*MS*	*F*	Sig.
Word processing				
Between Groups	3	.705	1.99	.116
Within Groups	317	.355		
Total	320			
Communications				
Between Groups	3	3.239	4.22**	.006
Within Groups	316	.767		
Total	319			
Presentation				
Between Groups	3	4.518	4.58**	.004
Within Groups	317	.986		
Total	320			
Manage files and records				
Between Groups	3	3.985	5.65**	.001
Within Groups	316	.705		
Total	319			
Monitor activities and events				
Between Groups	3	2.734	1.23	.299
Within Groups	318	2.221		
Total	321			
Perform financial functions				
Between Groups	3	10.422	9.95**	.000
Within Groups	317	1.047		
Total	320			
Internet research				
Between Groups	3	2.686	2.55	.056
Within Groups	317	1.052		
Total	320			

(table continues)

Source	*df*	*MS*	*F*	Sig.
Basic computer maintenance, security and troubleshooting				
Between Groups	3	2.214	2.75*	.043
Within Groups	315	.805		
Total	318			
Desktop publishing				
Between Groups	3	9.032	8.42**	.000
Within Groups	314	1.072		
Total	317			
Develop Web page				
Between Groups	3	1.359	2.02	.111
Within Groups	317	.672		
Total	320			

Note. *p < .05 level, **p < .01 level

The competency category of "Perform financial functions" also shows statistical significance in the mean score task performance according to respondents related work experience: Under 1 year & more than 10 years (.007); 1 – 5 years & more than 10 years (p = .000) and 6 - 10 years & more than 10 years (p = .000).

In the competency category of "Basic computer maintenance, security and troubleshooting" a significant difference was found in the mean score task performance of respondents with 1 – 5 years of work experience and those with more than 10 years experience (p = .005).

Significant differences in mean score task performance of "Desktop publishing" competency category occurred between respondents with 1 – 5 years and 6 – 10 years related work experience (p = .001) as well as between respondents with 1 – 5 years and more than 10 years related work experience (p = .000).

The competency categories of "Word processing", "Monitor activities and events", "Internet research" and "Develop Web page" may not have significant p-values. However, the post hoc test reveals that the mean score task performance of respondents with 1 – 5 years of related work experience are significantly different from respondents with more than 10 years related work experience.

(vi) The sixth analysis determines if there are significant differences in the mean score task performance according to years of computer use, IT training attended in the past 5 years, preference for IT training and method of acquiring IT competency.

The mean score task performance according to years of computer use is not significantly different except for the competency categories of "Word Processing" (F = 3.13, p = .026), "Perform financial functions" (F = 4.24, p = .006) and "Desktop Publishing" (F = 3.88, p = .010).

Findings of significant difference according to IT Training attended in the past 5 years occurred only for 3 competency categories. The competency categories are "Communications" (F = 3.83, p = .005), "Presentation" (F = 5.26, p = .000) and "Manage activities and events" (F = 5.26, p = .000). The findings suggest that respondents who had attended 3 or more courses in IT training rated their task performance for the 3 competency categories significantly different than respondents without any IT training in the past 5 years.

The mean score task performance of respondents according to method of acquiring IT competency and preference for method of learning IT do not show any significant difference.

Significant Differences in Mean Score Task Importance Across Demographic and Situational Variables

This section answers research question 6:

"Is there a significant difference in the mean score task importance across the variables of highest education level, job title, age group, years in current position, related work experience, years of computer use, IT training attended, preference for IT training, method of learning IT and method of acquiring IT skill?"

Tables 4.30, 4.31, 4.32 and 4.33 depict the answers to the research question designed to determine if distinctions exist in the respondents' perceptions of importance in performing tasks and IT related competencies across demographic and situational variables. The mean score task importance and standard deviations for all the 10 competency categories were calculated and compared across the demographic and situational variables. In order to determine if the differences in the mean scores were significant, the analysis of variance was used to identify competency categories that achieved significant p-values. The post hoc test was then used to identify the exact location of the differences.

(i) The first analysis determines if there are significant differences in the mean score task importance across respondents level of education.

The results of the ANOVA in Table 4.30 show that there are significant differences in the mean score task importance for 5 competency categories. The competency categories that achieved significant p-values are "Word processing" ($F = 6.56$, $p = .000$), "Communications" ($F = 3.09$, $p = .006$), "Presentation" ($F = 4.14$, $p = .001$), "Manage files and records" ($F = 4.35$, $p = .000$) and "Internet research" ($F = 2.73$, $p = .013$). The post hoc test shows that respondents with MCE/SPM rated their perceptions of task importance significantly different than other respondents.

Table 4.30

Analysis of Variance of the Mean Score Task Importance Across Respondents Level of Education (n = 311)

Source	*df*	*MS*	*F*	Sig.
Word processing				
Between Groups	6	2.008	6.56**	.000
Within Groups	314	.306		
Total	320			
Communications				
Between Groups	6	2.189	3.09**	.006
Within Groups	314	.709		
Total	320			
Presentation				
Between Groups	6	4.740	4.14**	.001
Within Groups	313	1.144		
Total	319			
Manage files and records				
Between Groups	6	3.005	4.35**	.000
Within Groups	310	.691		
Total	316			
Monitor activities and events				
Between Groups	6	1.490	.82	.557
Within Groups	314	1.824		
Total	320			
Perform financial functions				
Between Groups	6	1.733	1.70	.122
Within Groups	314	1.023		
Total	320			
Internet research				
Between Groups	6	2.944	2.73*	.013
Within Groups	314	1.077		
Total	320			

(table continues)

Source	*df*	*MS*	*F*	Sig.
Basic computer maintenance, security and troubleshooting				
Between Groups	6	1.088	1.48	.184
Within Groups	312	.734		
Total	318			
Desktop publishing				
Between Groups	6	1.724	1.45	.195
Within Groups	310	1.189		
Total	316			
Develop Web page				
Between Groups	6	1.293	.98	.441
Within Groups	313	1.324		
Total	319			

Note. *p < .05 level, **p < .01 level

The "Word processing" competency category recorded significant differences in the mean score task importance between respondents with MCE/SPM & Diploma (p = .000), MCE/SPM & Advanced Diploma (p = .006) and MCE/SPM & Bachelor's degree (p = .020).

The competency category of "Communications" shows that the mean score task importance differs significantly according to level of education: MCE/SPM & Diploma (p = .000); MCE/SPM & Advanced Diploma (p = .028) and MCE/SPM & Bachelor's degree (p = .039).

Significant differences in the mean score task importance also occurred across respondents level of education for the "Presentation" competency category: MCE/SPM & Diploma (p = .000); MCE/SPM & Advanced Diploma (p = .049) and MCE/SPM & Bachelor's degree (p = .005).

For the competency category of "Manage files and records" significant differences in the mean score task importance occurred between MCE/SPM & Diploma (p = .000); MCE/SPM & Professional qualification (p = .015) and MCE/SPM & Bachelor's degree (p = .001).

The competency category of "Internet research" that achieved a significant p-value also shows significant differences in the mean score task importance according to level of education: MCE/SPM & Diploma (p = .000) and MCE/SPM & Bachelor's degree (p = .042).

Although 5 competency categories do not achieve significant p-values, the post hoc test does reveals significant differences in the mean score task importance between respondents with MCE/SPM and other classifications of education level.

(ii) The second analysis determines if there are significant differences in the mean score task importance across job title of respondents.

The means and standard deviations were calculated. The results of the ANOVA however show that significant differences in the mean score task importance occurred across job title of respondents for only 3 competency categories. These competency categories and the p-values are "Word processing" (F = 3.00, p = .012), "Communications" (F = 2.67, p = .022) and "Manage files and records" (F = 2.52, p = .030). The other competency categories show no significant difference in the mean score task importance across job titles of respondents.

The post hoc test reveals that for the competency category of "Word processing" respondents with the job title of Secretary rated their mean score task importance significantly higher than respondents with the job title of Stenographer (p = .011) and Administrative Assistant (p = .002). Significant difference also occurred in the mean score

task importance between respondents with the job title of Executive Secretary and Administrative Assistant (p = .009).

For the competency category of "Communications" significant differences in the mean score task importance occurred across job titles: Stenographer & Secretary (p = .006); Stenographer & Executive Secretary (p = .001) and Stenographer & Executive Assistant (p = .041).

The mean score task importance of the "Manage files and records" competency category also differs significantly across job titles: Stenographer & Executive Assistant (p = .006); Secretary & Executive Assistant (p = .044); Executive Secretary & Others (p = .040); Administrative Assistant & Executive Assistant (p = .036) and Executive Assistant & Others (p = .003).

(iii) The third analysis determines if there are significant differences in the mean score task importance across age group of respondents.

The means and standard deviations indicate that the mean score task importance for all 10 competency categories are higher among respondents in the age group of 20 – 30 and 31 – 40. The results of the ANOVA in Table 4.31 confirm the significant differences in the mean score task importance for all competency categories except "Monitor activities and events" and "Develop Web page". The competency categories with significant p-values are "Word processing" (F = 3.42, p = .018), "Communications" (F = 4.05, p = .008), "Manage files and records" (F = 9.29, p = .000), "Presentation" (F = 5.29, p = .001), "Perform financial functions" (F = 8.58, p = .000), "Internet research" (F = 3.01, p = .030), "Basic computer maintenance, security & troubleshooting" (F = 3.79, p = .011) and "Desktop publishing" (F = 3.83, p = .010).

Table 4.31

Analysis of Variance of the Mean Score Task Importance Across Age Group of Respondents (n = 313)

Source	*df*	*MS*	*F*	Sig.
Word processing				
Between Groups	3	1.130	3.42*	.018
Within Groups	317	.331		
Total	320			
Communications				
Between Groups	3	2.902	4.05**	.008
Within Groups	317	.717		
Total	320			
Presentation				
Between Groups	3	6.161	5.29**	.001
Within Groups	316	1.165		
Total	319			
Manage files and records				
Between Groups	3	6.329	9.29**	.000
Within Groups	313	.681		
Total	316			
Monitor activities and events				
Between Groups	3	4.525	2.53	.058
Within Groups	317	1.792		
Total	320			
Perform financial functions				
Between Groups	3	8.303	8.58**	.000
Within Groups	317	.967		
Total	320			
Internet research				
Between Groups	3	3.283	3.01*	.030
Within Groups	317	1.092		
Total	320			

(table continues)

Source	*df*	*MS*	*F*	Sig.
Basic computer maintenance, security and troubleshooting				
Between Groups	3	2.736	3.79*	.011
Within Groups	315	.722		
Total	318			
Desktop publishing				
Between Groups	3	4.473	3.83*	.010
Within Groups	313	1.168		
Total	316			
Develop Web page				
Between Groups	3	2.935	2.24	.083
Within Groups	316	1.308		
Total	319			

Note. *p < .05 level, **p < .01 level

The post hoc test shows that the mean score task importance of "Word processing" differs significantly between respondents in the age group of 20 – 30 and 41 – 50 (p = .010) and between respondents in the age group of 20 – 30 and more than 51 years (p = .033).

For the competency category of "Communications" meaningful differences in the mean score task importance occurred between respondents who are 20 – 30 years and 41 – 50 years (p = .001). Respondents in the age group of 31 – 40 also differed significantly in the mean score task performance with respondents in the age group of 41 – 50 (p = .010).

For the competency category of "Manage files and records" respondents in the age group of 20 – 30 rated the mean score task importance significantly different than respondents in the age group of 31 – 40 (p = .000); 41 – 50 (p = .000) and more than 51 (p = .011).

Respondents in the age group of 20 – 30 again rated the mean score task importance for the "Presentation" competency category significantly higher than respondents in the age group of 31 – 40 (p = .005) and 41 – 50 (p = .001).

In the competency category of "Monitor activities and events" significant statistical difference in the mean score task importance occurred among respondents in the age group of 20 – 30 and 41 – 50 (p = .018) as well as respondents in the age group of 31 – 40 and 41 – 50 (p = .010).

The competency category of "Perform financial functions" that achieved a significant p-value also shows significant difference in the mean score task importance between respondents in the age group of 20 – 30 and 31 – 40 (p = .000); 20 – 30 & 41 – 50 (p = .000) and 20 – 30 & more than 51 (p = .008).

Respondents in the age group of 20 – 30 also rated their mean score task importance for the competency category of "Internet research" significantly higher than respondents in the age group of 41 – 50 (p = .010).

"Basic computer maintenance, security and troubleshooting" is another competency category that achieved a significant p-value. The post hoc test shows that respondents in the age group of 20 – 30 rated their mean score task importance significantly higher than did those respondents in the age group of 31 – 40 (p = .004) as well as respondents in the age group of 41 – 50 (p = .034).

The mean score task importance for the "Desktop publishing" competency category among respondents in the age group of 20 – 30 are again significantly higher than respondents in the age group of 41 – 50 (p = .001). Respondents in the age group of 31 – 40 also rated the mean score task importance significantly higher than did those in the age group of 41 – 50 (p = .036).

Although the competency category of "Develop Web page" did not achieve a significant p-value, the post hoc test reveals that the mean score task importance of respondents in the age group of 20 – 30 are significantly higher than respondents in the age group of 41 – 50 ($p = .011$).

The analysis suggests that respondents in the age group of 20 – 30 and 31 – 40 perceive task importance significantly different than respondents in the age groups of 41 – 50 and more than 51.

(iv) The fourth analysis determines if there are significant differences in the mean score task importance of competency categories across respondents years in current position.

The means and standard deviations for all 10 competency categories appear lower among respondents with more than 10 years in current position. The results of the ANOVA in Table 4.32 show that only 5 competency categories achieved significant p-values: "Communications" ($F = 3.89$, $p = .009$), "Presentation" ($F = 3.23$, $p = .023$, "Perform financial functions" ($F = 7.68$, $p = .000$), "Manage files and records" ($F = 2.73$, $p = .044$) and "Desktop publishing" ($F = 4.07$, $p = .007$).

The post hoc test shows that the mean score task importance for the "Communications" competency category is significantly different among respondents with 1 – 5 years and more than 10 years in current position ($p = .005$). The mean score task importance of respondents with 6 – 10 years in current position is also significantly higher than respondents with more than 10 years in current position ($p = .002$).

Table 4.32

Analysis of Variance of the Mean Score Task Importance Across Respondent's Years in Current Position (n = 313)

Source	*df*	*MS*	*F*	Sig.
Word processing				
Between Groups	3	.558	1.66	.175
Within Groups	317	.336		
Total	320			
Communications				
Between Groups	3	2.795	3.89**	.009
Within Groups	317	.718		
Total	320			
Presentation				
Between Groups	3	3.834	3.23*	.023
Within Groups	316	1.187		
Total	319			
Manage files and records				
Between Groups	3	1.975	2.73*	.044
Within Groups	313	.723		
Total	316			
Monitor activities and events				
Between Groups	3	1.780	.98	.403
Within Groups	317	1.818		
Total	320			
Perform financial functions				
Between Groups	3	7.484	7.68**	.000
Within Groups	317	.975		
Total	320			
Internet research				
Between Groups	3	1.743	1.58	.195
Within Groups	317	1.106		
Total	320			

(table continues)

Source	*df*	*MS*	*F*	Sig.
Basic computer maintenance, security and troubleshooting				
Between Groups	3	1.006	1.36	.254
Within Groups	315	.738		
Total	318			
Desktop publishing				
Between Groups	3	4.739	4.07**	.007
Within Groups	313	1.165		
Total	316			
Develop Web page				
Between Groups	3	2.482	1.89	.131
Within Groups	316	1.313		
Total	319			

Note. *p < .05 level, **p < .01 level

For the competency category of "Presentation", significant difference in the mean score task importance occurred across the demographic variable of years in current position: 1 – 5 years & 6 – 10 years (p = .043) and 1 – 5 & more than 10 (p = .004).

The competency category of "Perform financial functions" also shows significant difference in the mean score task importance according to years in current position: Under 1 year & more than 10 (p = .008); 1 – 5 & 6 – 10 (p = .038); 1 – 5 & more than 10 (p = .000) and 6 – 10 & more than 10 (p = .026).

The respondents with 1 – 5 years in current position also rated their mean score task importance for the competency category of "Desktop publishing" significantly higher than did those respondents with 6 – 10 years in current position (p = .005). Respondents who have under 1 year in current position also differ significantly in their mean score task importance with respondents who have 6 – 10 years in current position (p = .040)

(v) The fifth analysis determines if there are significant differences in the mean score task importance across respondents related work experience.

The mean score task importance for the 10 competency categories appear higher among respondents with 1 – 5 years and 6 – 10 years of related work experience. The analysis of variance in Table 4.33 shows that there are significant differences in the mean score task importance for 5 competency categories: "Presentation" ($F = 5.65$, $p = .001$); "Manage files and records" ($F = 6.05$, $p = .001$); "Perform financial functions" ($F = 6.97$, $p = .000$); "Internet research" ($F = 2.86$, $p = .037$) and "Desktop publishing" ($F = 4.68$, $p = .003$). The post hoc tests were conducted on competency categories with significant p-values to locate the exact differences.

Respondents with 1 – 5 years of related work experience rated their mean score task importance for the "Manage files and records" competency category significantly higher than did respondents with 6 – 10 years of related work experience ($p = .001$) as well as respondents who have more than 10 years related work experience ($p = .000$).

The mean score task importance for the competency category of "Presentation" shows significant differences between respondents who have 1 – 5 years and 6 – 10 years of related work experience ($p = .010$) as well as with respondents who have more than 10 years related work experience ($p = .000$).

Respondents with 1 – 5 years of related work experience are once again found to differ significantly in terms of mean score task importance for the "Perform financial functions" competency category with other respondents: 1 – 5 years & 6 – 10 years ($p = .000$) and 1 – 5 years & more than 10 ($p = .000$). At the same time, a significant difference in the mean score task importance for the same competency category occurred between respondents with 6 – 10 years and more than 10 years related work experience ($p = .002$).

Table 4.33

Analysis of Variance of the Mean Score Task Importance Across Respondents Related Work Experience (n = 313)

Source	*df*	*MS*	*F*	Sig.
Word processing				
Between Groups	3	.296	.87	.455
Within Groups	317	.339		
Total	320			
Communications				
Between Groups	3	1.683	2.31	.076
Within Groups	317	.728		
Total	320			
Presentation				
Between Groups	3	6.562	5.65**	.001
Within Groups	316	1.161		
Total	319			
Manage files and records				
Between Groups	3	4.241	6.05**	.001
Within Groups	313	.701		
Total	316			
Monitor activities and events				
Between Groups	3	.691	.38	.769
Within Groups	317	1.828		
Total	320			
Perform financial functions				
Between Groups	3	6.842	6.97**	.000
Within Groups	317	.981		
Total	320			
Internet research				
Between Groups	3	3.131	2.86*	.037
Within Groups	317	1.093		
Total	320			

(table continues)

Source	*df*	*MS*	*F*	Sig.
Basic computer maintenance, security and troubleshooting				
Between Groups	3	1.638	2.24	.084
Within Groups	315	.732		
Total	318			
Desktop publishing				
Between Groups	3	5.422	4.68**	.003
Within Groups	313	1.159		
Total	316			
Develop Web page				
Between Groups	3	3.423	2.63	.050
Within Groups	316	1.304		
Total	319			

Note. *p < .05 level, **p < .01 level

Significant differences in the mean score task importance for the "Internet research" competency category occurred between respondents who have 1 – 5 years and 6 – 10 years related experience (p = .046) as well as with respondents who have more than 10 years related experience (p = .011).

The competency category of "Desktop publishing" also shows significant difference in mean score task importance according to respondents related work experience: Under 1 year & 6 – 10 years (p = .014); under 1 year & more than 10 years (p = .016); 1 –5 years & 6 – 10 years (p = .006) and 1 – 5 years & more than 10 years (p = .007).

Although the competency category of a newer technology such as "Develop Web page" did not achieve a significant p-value, the post hoc tests show that the mean score task importance for this new technology is significantly higher for respondents with under 1 year of related work experience: Under 1 year & more than 10 years (p = .041) and 1 – 5 years & more than 10 years (p = .007).

(vi) The sixth analysis determines if there are significant differences in the mean score task importance according to years of computer use, IT training attended in the past 5 years, preference for IT training and method of acquiring IT competency.

The results of the ANOVA shows that only 3 competency categories achieved significant p-values. These are the competency categories of "Perform financial functions" ($F = 3.81$, $p = .010$), "Develop Web page" ($F = 2.96$, $p = .032$) and "Manage files and records" ($F = 5.30$, $p = .001$). The findings indicate that respondents with 1 – 3 years of computer use rated the level of task importance significantly different than respondents with more than 5 years of computer use.

The demographic variables of IT training attended in the past 5 years, preference for IT training, method of learning IT and method of acquiring IT competency do not show any significant difference in the mean score task importance for the 10 competency categories.

Significant Differences in Mean Score Task Ability Across Demographic and Situational Variables

This section answers research question 7:

"Is there a significant difference in the mean score task ability across the variables of highest education level, job title, age group, years in current position, related work experience, years of computer use, IT training attended, preference for IT training, method of learning IT and method of acquiring IT skill?"

Tables 4.34, 4.35, 4.36, 4.37, and 4.38 depict the answers to research question 7 that was designed to determine if significant differences exist in the self-rated ability of respondents for the 10 competency categories according to the variables of highest education level, job title, age group, years in current position, related work experience, years of computer use, prior IT training in the past 5 years, preference for IT training, method of learning IT and method of acquiring IT competency.

(i) The first analysis determines if there are significant differences in the mean score task ability across respondents level of education.

The mean scores for task ability appear to be higher among respondents with a Diploma, Advanced Diploma, Professional qualification and Bachelor's degree. The results of the ANOVA in Table 4.34 show that 9 competency categories achieved significant p-values except the competency category of "Develop Web page". The competency categories with significant p-values are "Word processing" (F = 9.46, p = .000), "Communications" (F = 4.84, p = .000), "Presentation" (F = 4.37, p = .000), "Manage files and records" (F = 6.27, p = .000), "Monitor activities and events" (F = 3.21, p = .005), "Perform financial functions" (F = 3.70, p = .001), "Internet research" F = 5.29, p = .000),

"Basic computer maintenance, security and troubleshooting" (F = 3.85, p = .001) and "Desktop Publishing" (F = 2.61, p = .018).

Table 4.34

Analysis of Variance of the Mean Score Task Ability Across Respondents Level of Education (n = 310)

Source	*df*	*MS*	*F*	Sig.
Word processing				
Between Groups	6	3.359	9.46**	.000
Within Groups	314	.355		
Total	320			
Communications				
Between Groups	6	3.051	4.84**	.000
Within Groups	314	.631		
Total	320			
Presentation				
Between Groups	6	3.543	4.37**	.000
Within Groups	313	.812		
Total	319			
Manage files and records				
Between Groups	6	3.819	6.27**	.000
Within Groups	309	.609		
Total	315			
Monitor activities and events				
Between Groups	6	4.732	3.21**	.005
Within Groups	313	1.476		
Total	319			
Perform financial functions				
Between Groups	6	3.138	3.70**	.001
Within Groups	314	.849		
Total	320			

(table continues)

Source	*df*	*MS*	*F*	Sig.
Internet research				
Between Groups	6	4.796	5.29**	.000
Within Groups	314	.908		
Total	320			
Basic computer maintenance, security and troubleshooting				
Between Groups	6	2.397	3.85**	.001
Within Groups	310	.622		
Total	316			
Desktop publishing				
Between Groups	6	2.393	2.61*	.018
Within Groups	311	.917		
Total	317			
Develop Web page				
Between Groups	6	1.237	1.48	.183
Within Groups	313	.834		
Total	319			

Note. *p < .05 level, **p < .01 level

The results of the ANOVA indicate significant differences in the mean score task ability for 9 competency categories across respondent level of education. The mean score task ability of respondents with a Certificate, Diploma, Advanced Diploma and Bachelor's degree are significantly different from respondents with MCE/SPM for the "Word processing" competency category: MCE/SPM & Certificate (p = .000); MCE/SPM & Diploma (p = .000); MCE/SPM & Advanced Diploma (p = .000) and MCE/SPM & Bachelor's degree (p = .000).

The competency category of "Communications" also shows significant differences in the mean score task ability across level of education: MCE/SPM & Diploma (p = .000); MCE/SPM & Advanced Diploma (p = .005) and MCE/SPM & Bachelor's degree (p = .000).

Significant differences in the mean score task ability of the "Presentation" competency category were also found across respondents level of education: MCE/SPM & Diploma (p = .000); MCE/SPM & Advanced Diploma (p = .012) and MCE/SPM & Bachelor's degree (p = .029).

Respondents with a Certificate, Diploma, Advanced Diploma, Professional qualification and Bachelor's degree rated their mean score task ability in performing the competency category of "Manage files and records" significantly higher than did those respondents with MCE/SPM: MCE/SPM & Certificate (p = .005); MCE/SPM & Diploma (p = .000); MCE/SPM & Advanced Diploma (p = .011); MCE/SPM & Professional qualification (p = .005) and Diploma & Bachelor's degree (p = .000).

The competency category of "Monitor activities and events" also shows significant differences in the mean score task ability between respondents with MCE/SPM and respondents with a Diploma (p = .001) as well as respondents with an Advanced Diploma (p = .001). Significant differences also occurred across other job titles of respondents: Certificate & Advanced Diploma (p = .027) and Diploma & Advanced Diploma (p = .022).

Significant differences in the mean score task ability for the competency category of "Perform financial functions" also occurred between respondents with MCE/SPM and respondents with a Diploma (p = .000), Advanced Diploma (p = .022) and Bachelor's degree (p = .004).

The competency category of "Internet research" also shows significant differences in the mean score task ability according to level of education: MCE/SPM & Diploma (p = .000); MCE/SPM & Advanced Diploma (p = .002) and MCE/SPM & Bachelor's degree (p = .001).

The competency category of "Basic computer maintenance, security and troubleshooting" shows significant differences in the mean score task ability across respondents level of education: MCE/SPM & Diploma (p = .000); MCE/SPM & Professional qualification (p = .017) and MCE/SPM & Bachelor's degree (p = .001).

The last competency category that achieved a significant p-value is "Desktop publishing". Significant differences in the mean score task ability occurred between respondents with MCE/SPM and Diploma (p = .000) as well as respondents with an Advanced Diploma (p = .018).

Although the competency category of "Develop Web page" did not achieve an overall significant p-value, the post hoc test reveals significant differences in mean score task ability across job title of respondents: MCE/SPM & Certificate (p = .031) and MCE/SPM & Advanced Diploma (p = .026).

The analysis for mean score task ability across level of education of respondents seem to indicate that the self-ratings of task ability appear higher among respondents with higher levels of education.

(ii) The second analysis determines if there are significant differences in the mean score task ability across job title of respondents.

The mean score task ability appears higher among respondents with the job title of Executive Secretary and Executive Assistant. In order to determine if the differences are significant, the ANOVA and post hoc tests were conducted to locate the exact differences. Table 4.35 shows that 9 competency categories achieved significant p-values: "Word processing" (F = 3.82, p = .002), "Communications" (F = 5.39, p = .000), "Presentation" (F = 3.62, p = .003), "Manage files and records" (F = 4.84, p = .000), "Monitor activities and events" (F = 4.04, p = .001), "Perform financial functions"

(F = 3.62, p = .003), "Internet research" (F = 4.86, p = .000), "Basic computer maintenance, security and troubleshooting" (F = 2.69, p = .021) and " Develop Web page" (F = 2.45, p = .034).

Table 4.35

Analysis of Variance of the Mean Score Task Ability Across Job Title of Respondents (n = 310)

Source	*df*	*MS*	*F*	Sig.
Word processing				
Between Groups	5	1.505	3.82**	.002
Within Groups	315	.394		
Total	320			
Communications				
Between Groups	5	3.406	5.39**	.000
Within Groups	315	.633		
Total	320			
Presentation				
Between Groups	5	3.003	3.62**	.003
Within Groups	314	.829		
Total	319			
Manage files and records				
Between Groups	5	3.060	4.84**	.000
Within Groups	310	.632		
Total	315			
Monitor activities and events				
Between Groups	5	5.929	4.04**	.001
Within Groups	314	1.467		
Total	319			
Perform financial functions				
Between Groups	5	3.104	3.62**	.003
Within Groups	315	.857		
Total	320			

(table continues)

Source	*df*	*MS*	*F*	Sig.
Internet research				
Between Groups	5	4.493	4.86**	.000
Within Groups	315	.925		
Total	320			
Basic computer maintenance, security and troubleshooting				
Between Groups	5	1.719	2.69*	.021
Within Groups	311	.639		
Total	316			
Desktop publishing				
Between Groups	5	.949	1.01	.415
Within Groups	312	.945		
Total	317			
Develop Web page				
Between Groups	5	2.015	2.45*	.034
Within Groups	314	.823		
Total	319			

Note. *p < .05 level, **p < .01 level

For the competency category of "Word processing", significant differences in the mean score task ability occurred across respondent job titles: Stenographer & Secretary (p = .006); Stenographer & Executive Secretary (p = .000); Secretary & Executive Secretary (p = .014); Executive Secretary & Administrative Assistant (p = .038) and Executive Secretary & Others (p = .004).

Significant differences in the mean score task ability of the "Communications" competency category were found across respondent job titles: Stenographer & Secretary (p = .001); Stenographer & Executive Secretary (p = .000); Stenographer & Administrative Assistant (p = .003); Stenographer & Executive Assistant (p = .001); Stenographer & Others (p = .006) and Secretary & Executive Secretary (p = .007).

A similar finding occurred for the mean score task ability of the "Presentation" competency category: Stenographer & Secretary (p = .004); Stenographer & Executive Secretary (p = .002); Stenographer & Administrative Assistant (p = .009); Stenographer & Executive Assistant (p = .000); Secretary & Executive Assistant (p = .009); Executive Secretary & Others (p = .002) and Executive Assistant & Others (p = .019).

The competency category of "Manage files and records" also shows significant differences in mean score task ability across respondent job titles: Stenographer & Secretary (p = .008); Stenographer & Executive Secretary (p = .000); Stenographer & Administrative Assistant (p = .012); Stenographer & Executive Assistant (p = .002); Secretary & Executive Secretary (p = .009); Executive Secretary & others (p = .002) and Executive Assistant & Others (p = .015).

For the competency category of "Monitor activities and events", significant differences were found in the mean score task ability between respondents with the job title of Executive Assistant or Executive Secretary with the other job titles: Stenographer & Secretary (p = .002); Stenographer & Executive Secretary (p = .000); Stenographer & Administrative Assistant (p = .048); Stenographer & Executive Assistant (p = .003); Stenographer & Others (p = .012); Secretary & Executive Secretary (p = .037) and Executive Secretary & Administrative Assistant (p = .050).

The competency category of "Perform financial functions" also recorded significant differences in the mean score task ability across the demographics of job title: Stenographer & Secretary (p = .006); Stenographer & Executive Secretary (p = .006); Stenographer & Administrative Assistant (p = .001); Stenographer & Executive Assistant (p = .001); Stenographer & Others (p = .037) and Secretary & Executive Assistant (p = .049).

For the "Internet research" competency category, the mean score task ability of respondents with the job title of Executive Assistant is significantly higher than respondents with the other job titles: Stenographer & Executive Secretary (p = .001); Stenographer & Administrative Assistant (p = .014); Stenographer & Executive Assistant (p = .000); Secretary & Executive Secretary (p = .005); Secretary & Executive Assistant (p = .001); Executive Secretary & Others (p = .027) and Executive Assistant & Others (p = .003).

Respondents with the job title of Executive Assistant and Executive Secretary again rated their mean score task ability for the competency category of "Basic computer maintenance, security and troubleshooting" significantly higher than respondents with the other job titles: Stenographer & Executive Secretary (p = .001); Stenographer & Executive Assistant (p = .017) and Secretary & Executive Secretary (p = .027).

The competency category of "Develop Web page" shows significant difference in mean score task ability across job title of respondents: Stenographer & Executive Assistant (p = .026); Secretary & Administrative Assistant (p = .047); Secretary & Executive Assistant (p = .005) and Executive Assistant & Others (p = .011).

The significant differences in ratings of task ability across respondent job titles indicate that respondents who hold the new job titles of Executive Assistant and Executive Secretary rated their ability highest while respondents with the job title of Stenographer reported lower ratings of ability.

(iii) The third analysis determines if there are significant differences in the mean score task ability across age group of respondents.

The mean scores and standard deviations appear to indicate that the ratings of task ability are higher among respondents in the younger age group (20 – 30 and 31 – 40).

The means plotted (Appendix O) show a downward trend in mean score task ability from the age group of 20 – 30 towards the older age group. The results of the ANOVA in Table 4.36 show that the *p*-values for the 10 competency categories are all significant indicating that there are differences in the mean score task ability according to age group of respondents.

The post hoc test shows that the mean score task ability of respondents in the age group of 20 – 30 for the competency category of "Word processing" is significantly higher than other age groups: 20 – 30 & 30 – 41 (p = .048); 20 – 30 & 41 – 50 (p = .000); 20 – 30 & more than 51 (p = .019) and 31 – 40 & 41 – 50 (p = .020).

Significant differences in the mean score task ability for the "Communications" competency category occurred across the demographics of age: 20 – 30 & 31 – 40 (p = .038); 20 – 30 & 41 – 50 (p = .000); 20 – 30 & more than 51 (p = .002); 31 – 40 & 41 – 50 (p = .017) and 31 – 40 & more than 51 (p = .017).

For the competency category of "Presentation", significant differences in the mean score task ability were found between respondents in the age group of 20 – 30 & 31 – 40 (p = .000); 20 – 30 & 41 – 50 (p = .000) and 20 – 30 & more than 51 (p = .006).

A similar trend was found for the competency category of "Manage files and records" where respondents in the age group of 20 – 30 rated their task ability significantly higher than respondents in the other age groups: 20 – 30 & 31 – 40 (p = .000); 20 – 30 & 41 – 50 (p = .000) and 20 – 30 & more than 51 (p = .003).

Table 4.36

Analysis of Variance of the Mean Score Task Ability Across the Age Group of Respondents

(n = 312)

Source	*df*	*MS*	*F*	Sig.
Word processing				
Between Groups	3	2.475	6.31**	.000
Within Groups	317	.392		
Total	320			
Communications				
Between Groups	3	4.984	7.85**	.000
Within Groups	317	.635		
Total	320			
Presentation				
Between Groups	3	7.465	9.33**	.000
Within Groups	316	.800		
Total	319			
Manage files and records				
Between Groups	3	6.964	11.42**	.000
Within Groups	312	.610		
Total	315			
Monitor activities and events				
Between Groups	3	11.151	7.71**	.000
Within Groups	316	1.446		
Total	319			
Perform financial functions				
Between Groups	3	11.340	14.29**	.000
Within Groups	317	.793		
Total	320			
Internet research				
Between Groups	3	7.966	8.71**	.000
Within Groups	317	.914		
Total	320			

(table continues)

Source	*df*	*MS*	*F*	Sig.
Basic computer maintenance, security and troubleshooting				
Between Groups	3	5.266	8.61**	.000
Within Groups	313	.612		
Total	316			
Desktop publishing				
Between Groups	3	9.064	10.45**	.000
Within Groups	314	.867		
Total	317			
Develop Web page				
Between Groups	3	2.268	2.74*	.043
Within Groups	316	.828		
Total	319			

Note. *p < .05 level, **p < .01 level

The competency category of "Monitor activities and events" also records significant differences in the mean score task ability across age groups of respondents: 20 – 30 & 41 – 50 (p = .000) and 31 – 40 & 41 – 50 (p = .000).

The competency category of "Perform financial functions" also shows significant differences in the mean score task ability across respondent age group: 20 – 30 & 31 – 40 (p = .000); 20 – 30 & 41 – 50 (p = .000); 20 – 30 & more than 51 (p = .000); 31 – 40 & 41 – 50 (p = .043) and 31 – 40 & more than 51 (p = .011).

The mean score task ability for the competency category of "Internet research" shows a downward trend from respondents in the age group of 20 – 30 towards respondents who are 51 years or more: 20 – 30 & 31 – 40 (p = .001); 20 – 30 & 41 – 50 (p = .000) and 20 – 30 & more than 51 (p = .003).

Significant differences in the mean score task ability of the "Basic computer maintenance, security and troubleshooting" competency category also occurred across the

demographics of age group: 20 – 30 & 31 – 40 (p = .000); 20 – 30 & 41 – 50 (p = .000) and 20 – 30 & more than 51 (p = .004).

The last competency category of "Desktop publishing" also shows significant differences in the mean score task ability according to respondent age groups: 20 – 30 & 31 – 40 (p = .004); 20 – 30 & 41 – 50 (p = .000); 20 – 30 & more than 51 (p = .004) and 31 – 40 & 41 – 50 (p = .006).

The analysis shows that respondents in the age group of 20 – 30 as well as respondents in the age group of 31 – 40 rated their ability in performing the competency categories significantly higher than respondents in the older age group.

(iv) The fourth analysis determines if there are significant differences in the mean score task ability across respondents years in current position.

The means scores appear to indicate that respondents who have been in their current positions for 1 – 5 years rated their task ability for all 10 competency categories higher than the other respondents. The results of the ANOVA in Table 4.37 reveals that the p-values for the 10 competency categories are all significant, indicating that there are significant differences in mean score task ability across the demographics of years in current position.

A closer look at the post hoc tests show that significant differences in mean score task ability of the "Word processing" competency category occurred between respondents with 1 – 5 years and more than 10 years in current position (p = .000). Respondents with 6 – 10 years in current position also rated their ability in performing this competency significantly higher than respondents with more than 10 years in current position (p = .017).

Table 4.37

Analysis of Variance of the Mean Score Task Ability Across Respondent Years in Current Position (n = 313)

Source	*df*	*MS*	*F*	Sig.
Word processing				
Between Groups	3	1.826	4.58**	.004
Within Groups	317	.398		
Total	320			
Communications				
Between Groups	3	3.750	5.80**	.001
Within Groups	317	.647		
Total	320			
Presentation				
Between Groups	3	5.567	6.80**	.000
Within Groups	316	.818		
Total	319			
Manage files and records				
Between Groups	3	3.719	5.80**	.001
Within Groups	312	.641		
Total	315			
Monitor activities and events				
Between Groups	3	7.029	4.73**	.003
Within Groups	316	1.485		
Total	319			
Perform financial functions				
Between Groups	3	11.970	15.20**	.000
Within Groups	317	.787		
Total	320			
Internet research				
Between Groups	3	5.441	5.80**	.001
Within Groups	317	.938		
Total	320			

(table continues)

Source	*df*	*MS*	*F*	Sig.
Basic computer maintenance, security and troubleshooting				
Between Groups	3	3.559	5.67**	.001
Within Groups	313	.628		
Total	316			
Desktop publishing				
Between Groups	3	7.007	7.90**	.000
Within Groups	314	.887		
Total	317			
Develop Web page				
Between Groups	3	2.424	2.93*	.034
Within Groups	316	.827		
Total	319			

Note. *p < .05 level, **p < .01 level

For the competency category of "Communications", significant differences in mean score task ability were found across years in current position: Under 1 year & more than 10 (p = .043); 1 – 5 & more than 10 (p = .000) and 6 – 10 & more than 10 (p = .006).

Significant differences in the mean score task ability of the "Presentation" competency category were found across years in current position: 1 – 5 & 6 – 10 (p = .035); 1 – 5 & more than 10 (p = .000) and 6 – 10 & more than 10 (p = .044).

The competency category of "Manage files and records" shows significant difference in the mean score task ability between respondents with under 1 year and more than 10 years in current position (p = .046); 1 – 5 years & 6 – 10 years in current position (p = .045); 1 – 5 & more than 10 years in current position (p = .000) and 6 – 10 & more than 10 years in current position (p = .044).

When it comes to the competency category of "Monitor activities and events", respondents with more than 10 years in current position rated their mean score task ability

significantly lower than respondents with 1 - 5 years (p = .000) as well as respondents who have 6 – 10 years in current position (p = .033).

The respondents with more than 10 years in current position rated their mean score task ability for the competency category of "Perform financial functions" significantly higher than respondents with more than 10 years in current position: Under 1 year & more than 10 (p = .000); 1 – 5 & 6 – 10 (p = .000); 1 – 5 & more than 10 (p = .000) and 6 – 10 & more than 10 (p = .013).

For the competency category of "Internet research", respondents with 1 – 5 years in current position differ significantly in the mean score task ability with respondents who have 6 – 10 years (p = .017) as well as those with more than 10 years in current position (p = .000).

The respondents with 1 – 5 years in current position again differ significantly in the mean score task ability from other respondents for the "Basic computer maintenance, security and troubleshooting" competency category: 1 – 5 & 6 – 10 (p = .011) and 1 – 5 & more than 10 (p = .000).

Similar significant findings in the mean score task ability of respondents with 1 – 5 years in current position were again found for the competency category of "Desktop publishing": Under 1 year & more than 10 (p = .022); 1 – 5 & 6 – 10 (p = .001) and 1 – 5 & more than 10 (p = .000).

The last competency category of "Develop Web page" shows that respondents with under 1 year in current position differ significantly in their mean score task ability from respondents who have more than 10 years in current position (p = .017). Respondents with 1 – 5 years in current position also differ significantly in their mean score task ability with respondents who have more than 10 years in current position (p = .024).

(v) The fifth analysis determines if there are significant differences in the mean score task ability according to related work experience of respondents.

The means scores indicate that respondents with 1 – 5 years of related work experience rated their task ability higher than did the other respondents. The results of the ANOVA show that 8 competency categories achieved significant p-values. This indicates that there are significant differences in the mean score task ability according to respondents related work experience for 8 competency categories.

Table 4.38 presents the results of the ANOVA. The competency categories that achieved significant p-values are: "Communications" ($F = 3.80$, $p = .011$), "Presentation" ($F = 9.05$, $p = .000$); "Manage files and records" ($F = 4.80$, $p = .003$); "Perform financial functions" ($F = 9.86$, $p = .000$); "Internet research" ($F = 5.95$, $p = .001$); "Basic computer maintenance, security and troubleshooting" ($F = 3.63$, $p = .013$); "Desktop publishing" ($F = 7.16$, $p = .000$) and "Develop Web page" ($F = 3.87$, $p = .010$).

The post hoc test shows significant differences in the mean score task ability for the "Communications" competency category between respondents with 1 – 5 years and more than 10 years of related work experience ($p = .006$). At the same time, significant differences in the mean score task ability were found between respondents with 6 – 10 years and more than 10 years of related work experience ($p = .004$).

Table 4.38

Analysis of Variance of the Mean Score Task Ability Across Related Work Experience of Respondents (n = 313)

Source	*df*	*MS*	*F*	Sig.
Word processing				
Between Groups	3	.834	2.05	.107
Within Groups	317	.408		
Total	320			
Communications				
Between Groups	3	2.502	3.80*	.011
Within Groups	317	.659		
Total	320			
Presentation				
Between Groups	3	7.260	9.05**	.000
Within Groups	316	.802		
Total	319			
Manage files and records				
Between Groups	3	3.108	4.80**	.003
Within Groups	312	.647		
Total	315			
Monitor activities and events				
Between Groups	3	2.869	1.882	.133
Within Groups	316	1.524		
Total	319			
Perform financial functions				
Between Groups	3	8.125	9.86**	.000
Within Groups	317	.824		
Total	320			
Internet research				
Between Groups	3	5.576	5.95**	.001
Within Groups	317	.937		
Total	320			

(table continues)

Source	*df*	*MS*	*F*	Sig.
Basic computer maintenance, security and troubleshooting				
Between Groups	3	2.321	3.63*	.013
Within Groups	313	.640		
Total	316			
Desktop publishing				
Between Groups	3	6.393	7.16**	.000
Within Groups	314	.893		
Total	317			
Develop Web page				
Between Groups	3	3.172	3.87*	.010
Within Groups	316	.820		
Total	319			

Note. *p < .05 level, **p < .01 level

For the competency category of "Presentation", significant differences in the mean score task ability occurred across the demographic variable of related work experience: Under 1 year & 1 – 5 years (p = .032); 1 – 5 years & 6 – 10 years (p = .036); 1 – 5 years & more than 10 years (p = .000) and 6 – 10 & more than 10 years of related work experience (p = .003).

The competency category of "Manage files and records" also shows significant differences in the mean score task ability according to related work experience: 1 – 5 years & 6 – 10 years (p = .021) and 1 – 5 years & more than 10 years (p = .000).

Significant differences in the mean score task ability of the "Perform financial functions" competency category were found across respondents related work experience: Under 1 year & more than 10 (p = .010); 1 – 5 & more than 10 years (p = .000) and 6 – 10 & more than 10 years (p = .000).

Respondents with more than 10 years of related work experience were found to differ significantly in their mean score task ability with other respondents for the

competency category of "Internet research": 1 – 5 & more than 10 (p = .000) and 6 – 10 & more than 10 (p = .000).

The competency category of "Desktop publishing" also shows significant differences in the mean score task ability according to respondents related work experience: Under 1 year & more than 10 years (p = .012); 1 – 5 & 6 – 10 (p = .006) and 1 – 5 & more than 10 (p = .002).

The last competency category of "Develop Web page" that achieved a significant p-value also shows significant differences in the mean score task ability across respondents related work experience: 1 – 5 & 6 – 10 (p = .038) and 1 – 5 & more than 10 (p = .002).

(vi) The sixth analysis determines if there are significant differences in the mean score task ability according to years of computer use.

The mean score task ability appears higher among respondents with 1 – 3 and 3 – 5 years of computer use. For the newer technologies of "Desktop publishing" and "Develop Web page", however, the mean score task ability seems to be higher among respondents who have under 1 year and 1 – 3 years of computer use.

In order to determine if the differences are significant, the ANOVA was used to identify competency categories with significant p-values. The results of the ANOVA in Table 4.39 show that 6 out of 10 competency categories achieved significant p-values: "Presentation" (F = 3.55, p = .015); "Manage files and records" (F = 4.33, p = .005); "Perform financial functions" (F = 4.86, p = .003); "Internet research" (F = 4.50, p = .004); "Desktop publishing" (F = 5.37, p = .001) and "Develop Web page" (F = 2.92, p = .034).

Table 4.39:

Analysis of Variance of the Mean Score Task Ability Across Years of Computer Use (n = 312)

Source	*df*	*MS*	*F*	Sig.
Word processing				
Between Groups	3	.803	1.97	.119
Within Groups	317	.408		
Total	320			
Communications				
Between Groups	3	.384	.57	.638
Within Groups	317	.679		
Total	320			
Presentation				
Between Groups	3	2.990	3.55*	.015
Within Groups	316	.843		
Total	319			
Manage files and records				
Between Groups	3	2.813	4.33**	.005
Within Groups	312	.650		
Total	315			
Monitor activities and events				
Between Groups	3	1.888	1.23	.298
Within Groups	316	1.534		
Total	319			
Perform financial functions				
Between Groups	3	4.186	4.86**	.003
Within Groups	317	.861		
Total	320			
Internet research				
Between Groups	3	4.267	4.50**	.004
Within Groups	317	.949		
Total	320			

(table continues)

Source	*df*	*MS*	*F*	Sig.
Basic computer maintenance, security and troubleshooting				
Between Groups	3	1.629	2.52	.058
Within Groups	313	.647		
Total	316			
Desktop publishing				
Between Groups	3	4.872	5.37**	.001
Within Groups	314	.907		
Total	317			
Develop Web page				
Between Groups	3	2.415	2.92*	.034
Within Groups	316	.827		
Total	319			

Note. *p < .05 level, **p < .01 level

The post hoc analysis shows that the competency category of "Presentation" shows significant difference in the mean score task ability between respondents with 1 – 3 years and more than 5 years of computer use (p = .020) as well as between respondents with 3 – 5 and more than 5 years of computer use (p = .010).

For the competency category of "Perform financial functions", significant differences in the mean score task ability occurred across years of computer use: 1 – 3 & more than 5 years (p = .002) and 3 - 5 & more than 5 years (p = .008).

Significant differences also occurred across respondents years of computer use for the competency category of "Internet research": 1 – 3 & more than 5 years (p = .002) and 3 - 5 & more than 5 years (p = .019).

For the competency category of "Desktop publishing", respondents with more than 5 years of computer use differ significantly in their mean score task ability with respondents who have under 1 year of computer use (p = .042), 1 – 3 years of computer use (p = .002) and 3 – 5 years of computer use (p = .018).

The last competency category of "Develop Web page" also shows significant differences in the mean score task ability between respondents with 1 – 3 years and more than 5 years of computer use ($p = .024$).

(vii) The seventh analysis determines if there are significant differences in the mean score task ability according to respondents IT training attended in the past 5 years, preference for IT training and method of acquiring IT competency.

The analysis of variance for mean score task ability according to the demographic variable of IT training attended in the past 5 years shows that only four competency categories achieved significant p-values. The competency categories are: "Communications" ($F = 2.75$, $p = .029$), "Presentation" ($F = 2.79$, $p = .026$), "Perform financial functions" ($F = 2.66$, $p = .033$) and "Desktop Publishing" ($F = 2.47$, $p = .045$). The post hoc analysis reveals that the mean score task ability of respondents who have attended IT training in the past 5 years for the 4 competency categories are significantly higher than respondents who had no IT training in the past 5 years.

The demographic variables of preference for IT training, method of learning IT and method of acquiring IT competency do not show any significant difference in the mean score task ability for the 10 competency categories.

Relationship Between Mean Score Task Importance and Mean Score Task Performance

This section answers research question 8:

"What is the relationship between the mean score task importance and the mean score task performance of the 10 competency categories?"

Table 4.40 and Figure 4.17 depict the answers to the research question that was designed to determine the relationship between the two variables of task importance and task performance in order to justify content for curriculum. Decisions on curriculum content need to be based on frequency of task performance as well as perceptions of task importance. The perceptions of task importance and ratings of task performance are important so that curriculum content is based on tasks/IT competencies actually performed on the job. A less frequent task does not indicate less importance for success in the job. Perceptions of task importance, therefore, justifies that a particular task and related IT competency be included in a curriculum.

Descriptive statistics and the Pearson product moment correlation coefficient were used to describe the relationship between the mean score task importance and mean score task performance for the 10 competency categories. A scatter diagram to show correlation between the two variables was produced and the *r*-square value is used in addition to the *r*-value. The *r*-square value or often referred to as the coefficient of determination estimates the proportion of variance in the dependent variable based on the proportion of variance in the independent variable (Salkind, 1997; Sekaran, 1992).

A range for interpreting the correlation coefficients was adopted from Solak (1998):

Low Correlation	-0.0 to –0.3 and +0.0 to +0.3
Moderate Correlation	-0.3 to -0.59 and +0.3 to +0.59
Moderately Strong Correlation	-0.60 to -0.69 and +0.60 to +0.69
Strong Correlation	-0.7 to -1.0 and +0.7 to +1.0

Table 4.40 displays the correlation coefficients and *r*-square correlations used to describe the relationship between the mean score task importance and the mean score task performance for the ten competency categories:

Table 4.40

Relationship between Task Importance and Task Performance

Competency Category	*r*-Coefficient	*r*-square Coefficient
Word processing	0.785	0.617
Communications	0.811	0.657
Manage files and records	0.763	0.582
Presentation	0.670	0.450
Monitor activities and events	0.779	0.606
Perform financial functions	0.809	0.654
Internet research	0.752	0.566
Basic computer maintenance, security & troubleshooting	0.714	0.499
Desktop publishing	0.730	0.533
Develop Web page	0.492	0.242

Note. All correlations are significant at the .01 alpha level

Table 4.40 shows that there is strong correlation between the mean score task importance and mean score task performance for the competency categories of "Communications" (r = .81) and "Perform financial functions" (r = .81). The relationship for the competency categories of "Word processing" (r = .79), "Monitor activities and events" (r = .78), "Manage files and records" (r = .76), "Internet research" (r = .75), "Desktop publishing" (r = .73) and "Basic computer maintenance, security & troubleshooting" (r = .71) are approximately the same, that is, the 6 competency categories reflect a strong correlation.

The relationship between the mean score task performance and mean score task importance for the competency categories of "Presentation" (r = .67) is moderately strong.

The only competency category that shows moderate correlation between the mean score task importance and mean score task performance is the competency category of "Develop Web page" (r = .49) where only 24% (r^2 = .24) of the variance in task performance can be explained.

The overall correlation between the mean score task importance and mean score task performance is strong (r = .73) and the r-square value (r^2 = .54) indicates that the proportion of variance in task performance is explained by 54% of variance in task importance.

The scatter diagram in Figure 4.17 presents visual evidence of a positive relationship between the two variables:

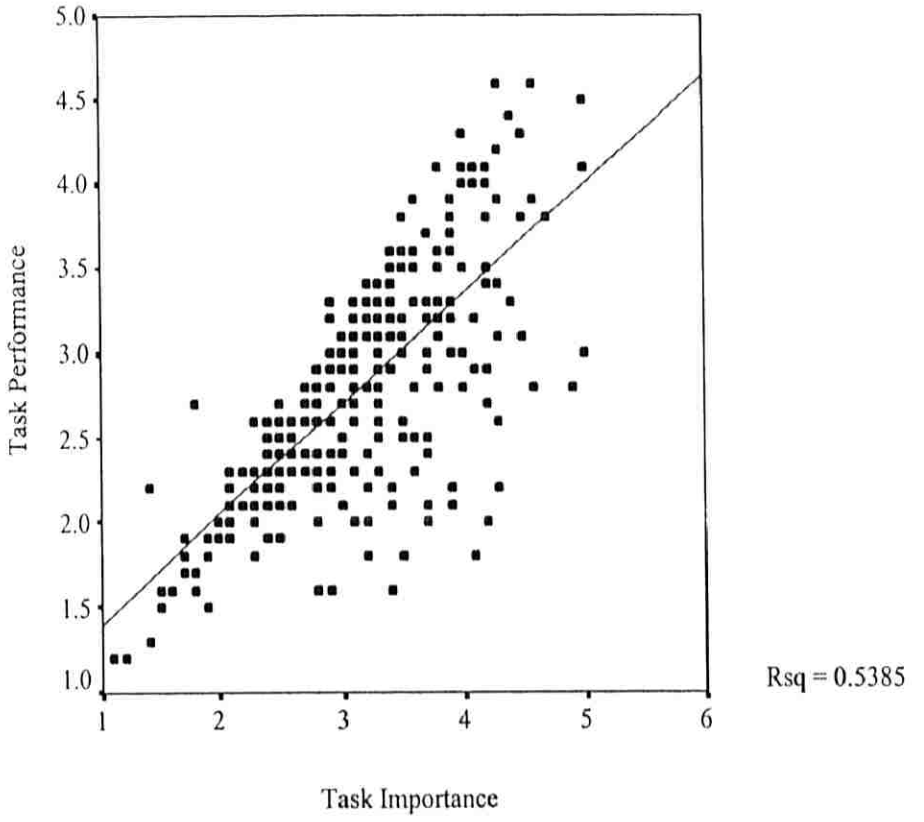

Figure 4.18 Relationship between task importance and task performance

The analysis shows that there is a positive correlation between the degree of importance for performance of tasks and IT-related competencies and frequency of performing tasks and IT-related competencies. This indicates that the tasks and IT related competencies are important in the work of administrative support staff. The moderate to strong correlations indicate that the importance of the tasks/IT related competencies are somewhat correlated positively with performance of the tasks/IT related competencies. The level of performance for a task may be low but does not indicate that the task and IT competency is unimportant.