

รายการอ้างอิง

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ภาคผนวก

ตาราง ก. แสดงสถิติพื้นฐานรวม

| brand of denture teeth | concentration of silane | Minimum | Maximum | Std. Deviation | Mean |
|------------------------|-------------------------|---------|---------|----------------|---------|
| major dent | .0 | 23.53 | 50.04 | 8.92784 | 39.2330 |
| | .1 | 46.25 | 61.84 | 5.01754 | 56.4670 |
| | 1.0 | 52.55 | 60.30 | 2.54061 | 55.8700 |
| | 2.0 | 42.74 | 62.69 | 7.58794 | 52.5260 |
| | Total | 23.53 | 62.69 | 9.42468 | 51.0240 |
| excellence IPN | .0 | 30.79 | 55.97 | 8.04796 | 45.3870 |
| | .1 | 29.35 | 59.26 | 11.71152 | 41.8090 |
| | 1.0 | 40.53 | 57.31 | 6.59078 | 47.8170 |
| | 2.0 | 24.94 | 55.80 | 10.03660 | 42.5050 |
| | Total | 24.94 | 59.26 | 9.26039 | 44.3795 |
| orthosit | .0 | 4.87 | 24.69 | 6.94533 | 16.6570 |
| | .1 | 16.03 | 39.52 | 6.38586 | 25.7150 |
| | 1.0 | 15.20 | 27.44 | 4.26046 | 21.2540 |
| | 2.0 | 6.78 | 31.67 | 8.33301 | 20.0750 |
| | Total | 4.87 | 39.52 | 7.17791 | 20.9252 |
| trubyte | .0 | 22.97 | 41.57 | 6.14008 | 34.5820 |
| | .1 | 20.87 | 48.85 | 9.29105 | 30.9300 |
| | 1.0 | 23.32 | 44.51 | 6.75675 | 36.7640 |
| | 2.0 | 29.40 | 48.50 | 6.32500 | 36.7590 |
| | Total | 20.87 | 48.85 | 7.36290 | 34.7588 |
| Total | .0 | 4.87 | 55.97 | 13.06330 | 33.9647 |
| | .1 | 16.03 | 61.84 | 14.45422 | 38.7303 |
| | 1.0 | 15.20 | 60.30 | 14.10990 | 40.4262 |
| | 2.0 | 6.78 | 62.69 | 14.27855 | 37.9663 |
| | Total | 4.87 | 62.69 | 14.05715 | 37.7719 |

ตาราง ข. แสดงการวิเคราะห์การแจกแจง (การกระจาย) ของข้อมูลซีฟันปลอม Major dent

Tests of Normality

| | concentration of silane | Kolmogorov-Smirnov(a) | | | Shapiro-Wilk | | |
|---------------|-------------------------|-----------------------|----|---------|--------------|----|------|
| | | Statistic | df | Sig. | Statistic | df | Sig. |
| tensile force | .0 | .173 | 10 | .200(*) | .931 | 10 | .458 |
| | .1 | .166 | 10 | .200(*) | .910 | 10 | .280 |
| | 1.0 | .204 | 10 | .200(*) | .910 | 10 | .284 |
| | 2.0 | .143 | 10 | .200(*) | .914 | 10 | .308 |

* This is a lower bound of the true significance.

a Lilliefors Significance Correction

ตาราง ค. แสดงการวิเคราะห์การแจกแจง (การกระจาย) ของข้อมูลซีฟันปลอม Excellence IPN

Tests of Normality

| | concentration of silane | Kolmogorov-Smirnov(a) | | | Shapiro-Wilk | | |
|---------------|-------------------------|-----------------------|----|---------|--------------|----|------|
| | | Statistic | df | Sig. | Statistic | df | Sig. |
| tensile force | .0 | .124 | 10 | .200(*) | .965 | 10 | .846 |
| | .1 | .209 | 10 | .200(*) | .878 | 10 | .123 |
| | 1.0 | .207 | 10 | .200(*) | .877 | 10 | .120 |
| | 2.0 | .151 | 10 | .200(*) | .956 | 10 | .742 |

* This is a lower bound of the true significance.

a Lilliefors Significance Correction

ตาราง ง. แสดงการวิเคราะห์การแจกแจง (การกระจาย) ของข้อมูลซีฟันปลอม Orthosit

Tests of Normality

| | concentration of silane | Kolmogorov-Smirnov(a) | | | Shapiro-Wilk | | |
|---------------|-------------------------|-----------------------|----|---------|--------------|----|------|
| | | Statistic | df | Sig. | Statistic | df | Sig. |
| tensile force | .0 | .255 | 10 | .064 | .892 | 10 | .177 |
| | .1 | .200 | 10 | .200(*) | .916 | 10 | .326 |
| | 1.0 | .199 | 10 | .200(*) | .918 | 10 | .343 |
| | 2.0 | .151 | 10 | .200(*) | .950 | 10 | .673 |

ตาราง จ. แสดงการวิเคราะห์การแจกแจง (การกระจาย) ของข้อมูลที่พื้นปลอม Trubyte Bioform
Tests of Normality

| | concentration of silane | Kolmogorov-Smirnov(a) | | | Shapiro-Wilk | | |
|---------------|-------------------------|-----------------------|----|---------|--------------|----|------|
| | | Statistic | df | Sig. | Statistic | df | Sig. |
| tensile force | .0 | .199 | 10 | .200(*) | .915 | 10 | .321 |
| | .1 | .188 | 10 | .200(*) | .892 | 10 | .177 |
| | 1.0 | .152 | 10 | .200(*) | .926 | 10 | .409 |
| | 2.0 | .186 | 10 | .200(*) | .929 | 10 | .434 |

ตาราง ข. แสดงการทดสอบความเหมือนของความแปรปรวน (Homogeneity of Variance) ด้วยการใช้ การทดสอบแบบเลอวี (Levene's Test) ของข้อมูล

Test of Homogeneity of Variances

tensile force

| Levene Statistic | df1 | df2 | Sig. |
|------------------|-----|-----|------|
| 2.594 | 15 | 144 | .002 |

ตาราง ซ. แสดงการทดสอบความมีอิทธิพลของปัจจัยในการศึกษา

Tests of Between-Subjects Effects

Dependent Variable: tensile force

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|-----|-------------|----------|------|
| Corrected Model | 23307,185(a) | 15 | 1553,812 | 27,583 | ,000 |
| Intercept | 228274,327 | 1 | 228274,327 | 4052,331 | ,000 |
| BRAND | 20486,689 | 3 | 6828,896 | 121,227 | ,000 |
| CONC | 899,847 | 3 | 299,949 | 5,325 | ,002 |
| BRAND * CONC | 1920,649 | 9 | 213,405 | 3,788 | ,000 |
| Error | 8111,751 | 144 | 56,332 | | |
| Total | 259693,263 | 160 | | | |
| Corrected Total | 31418,936 | 159 | | | |

a R Squared = ,742 (Adjusted R Squared = ,715)

ตาราง ณ. แสดงการวิเคราะห์ความแปรปรวนแบบทางเดียวด้วย (One-Way ANOVA) ด้วยการใช้ทดสอบแบบโรบัสต์ (Robust Test)

Robust Tests of Equality of Means

tensile force

| | Statistic(a) | df1 | df2 | Sig. |
|----------------|--------------|-----|---------|------|
| Brown-Forsythe | 27.583 | 15 | 108.984 | .000 |

ตาราง ณ. แสดงการเปรียบเทียบเชิงซ้อน

Multiple Comparisons

Dependent Variable: tensile force

Tamhane

| (I) GROUP | (J) GROUP | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|-----------|-----------|-----------------------|------------|-------|-------------------------|-------------|
| | | | | | Lower Bound | Upper Bound |
| MJ0 | MJ0.1 | -17.2340(*) | 3.23855 | .012 | -32.0203 | -2.4477 |
| | MJ1 | -16.6370(*) | 2.93532 | .021 | -31.4997 | -1.7743 |
| | MJ2 | -13.2930 | 3.70517 | .230 | -29.3291 | 2.7431 |
| | IPN0 | -6.1540 | 3.80100 | 1.000 | -22.5508 | 10.2428 |
| | IPN0.1 | -2.5760 | 4.65689 | 1.000 | -22.9245 | 17.7725 |
| | IPN1 | -8.5840 | 3.50920 | .957 | -23.9727 | 6.8047 |
| | IPN2 | -3.2720 | 4.24782 | 1.000 | -21.6077 | 15.0637 |
| | ORT0 | 22.5760(*) | 3.57693 | .001 | 6.9792 | 38.1728 |
| | ORT0.1 | 13.5180 | 3.47110 | .139 | -1.7622 | 28.7982 |
| | ORT1 | 17.9790(*) | 3.12822 | .008 | 3.2896 | 32.6684 |
| | ORT2 | 19.1580(*) | 3.86193 | .012 | 2.5196 | 35.7964 |
| | TB0 | 4.6510 | 3.42647 | 1.000 | -10.5105 | 19.8125 |
| | TB0.1 | 8.3030 | 4.07468 | .999 | -9.2401 | 25.8461 |
| | TB1 | 2.4690 | 3.54062 | 1.000 | -13.0140 | 17.9520 |
| | TB2 | 2.4740 | 3.45994 | 1.000 | -12.7756 | 17.7236 |

| (I) GROUP | (J) GROUP | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | | |
|-----------|-----------|-----------------------|------------|---------|-------------------------|-------------|---------|
| | | | | | Lower Bound | Upper Bound | |
| MJ0.1 | MJ0 | 17.2340(*) | 3.23855 | .012 | 2.4477 | 32.0203 | |
| | MJ1 | .5970 | 1.77849 | 1.000 | -7.6695 | 8.8635 | |
| | MJ2 | 3.9410 | 2.87668 | 1.000 | -8.8584 | 16.7404 | |
| | IPN0 | 11.0800 | 2.99909 | .227 | -2.3831 | 24.5431 | |
| | IPN0.1 | 14.6580 | 4.02909 | .329 | -4.6091 | 33.9251 | |
| | IPN1 | 8.6500 | 2.61943 | .401 | -2.7974 | 20.0974 | |
| | IPN2 | 13.9620 | 3.54837 | .180 | -2.5673 | 30.4913 | |
| | ORT0 | 39.8100(*) | 2.70949 | .000 | 27.8973 | 51.7227 | |
| | ORT0.1 | 30.7520(*) | 2.56817 | .000 | 19.5647 | 41.9393 | |
| | ORT1 | 35.2130(*) | 2.08152 | .000 | 26.2035 | 44.2225 | |
| | ORT2 | 36.3920(*) | 3.07595 | .000 | 22.5073 | 50.2767 | |
| | TB0 | 21.8850(*) | 2.50752 | .000 | 11.0003 | 32.7697 | |
| | TB0.1 | 25.5370(*) | 3.33915 | .000 | 10.1877 | 40.8863 | |
| | TB1 | 19.7030(*) | 2.66138 | .000 | 8.0401 | 31.3659 | |
| | TB2 | 19.7080(*) | 2.55306 | .000 | 8.5966 | 30.8194 | |
| | MJ1 | MJ0 | 16.6370(*) | 2.93532 | .021 | 1.7743 | 31.4997 |
| | | MJ0.1 | -.5970 | 1.77849 | 1.000 | -8.8635 | 7.6695 |
| MJ2 | | 3.3440 | 2.53045 | 1.000 | -9.2155 | 15.9035 | |
| IPN0 | | 10.4830 | 2.66879 | .255 | -2.8652 | 23.8312 | |
| IPN0.1 | | 14.0610 | 3.78965 | .393 | -5.6124 | 33.7344 | |
| IPN1 | | 8.0530 | 2.23368 | .366 | -2.8101 | 18.9161 | |
| IPN2 | | 13.3650 | 3.27396 | .227 | -3.4123 | 30.1423 | |
| ORT0 | | 39.2130(*) | 2.33864 | .000 | 27.7494 | 50.6766 | |
| ORT0.1 | | 30.1550(*) | 2.17334 | .000 | 19.6372 | 40.6728 | |
| ORT1 | | 34.6160(*) | 1.56864 | .000 | 27.5241 | 41.7079 | |
| ORT2 | | 35.7950(*) | 2.75488 | .000 | 21.9569 | 49.6331 | |
| TB0 | | 21.2880(*) | 2.10132 | .000 | 11.1822 | 31.3938 | |
| TB0.1 | | 24.9400(*) | 3.04595 | .001 | 9.4506 | 40.4294 | |
| TB1 | | 19.1060(*) | 2.28273 | .000 | 7.9622 | 30.2498 | |
| TB2 | | 19.1110(*) | 2.15547 | .000 | 8.6954 | 29.5266 | |
| MJ2 | | MJ0 | 13.2930 | 3.70517 | .230 | -2.7431 | 29.3291 |
| | | MJ0.1 | -3.9410 | 2.87668 | 1.000 | -16.7404 | 8.8584 |
| | MJ1 | -3.3440 | 2.53045 | 1.000 | -15.9035 | 9.2155 | |
| | IPN0 | 7.1390 | 3.49781 | .999 | -7.9265 | 22.2045 | |
| | IPN0.1 | 10.7170 | 4.41290 | .966 | -8.9766 | 30.4106 | |
| | IPN1 | 4.7090 | 3.17829 | 1.000 | -9.0278 | 18.4458 | |
| | IPN2 | 10.0210 | 3.97882 | .933 | -7.3802 | 27.4222 | |
| | ORT0 | 35.8690(*) | 3.25291 | .000 | 21.8452 | 49.8928 | |
| | ORT0.1 | 26.8110(*) | 3.13618 | .000 | 13.2282 | 40.3938 | |
| | ORT1 | 31.2720(*) | 2.75188 | .000 | 18.7057 | 43.8383 | |
| | ORT2 | 32.4510(*) | 3.56393 | .000 | 17.0833 | 47.8187 | |
| | TB0 | 17.9440(*) | 3.08671 | .002 | 4.5340 | 31.3540 | |
| | TB0.1 | 21.5960(*) | 3.79342 | .003 | 5.1286 | 38.0634 | |
| | TB1 | 15.7620(*) | 3.21295 | .014 | 1.8940 | 29.6300 | |
| | TB2 | 15.7670(*) | 3.12382 | .011 | 2.2282 | 29.3058 | |

| (I) GROUP | (J) GROUP | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | | |
|-----------|-----------|-----------------------|------------|---------|-------------------------|-------------|---------|
| | | | | | Lower Bound | Upper Bound | |
| IPNO | MJ0 | 6.1540 | 3.80100 | 1.000 | -10.2428 | 22.5508 | |
| | MJ0.1 | -11.0800 | 2.99909 | .227 | -24.5431 | 2.3831 | |
| | MJ1 | -10.4830 | 2.66879 | .255 | -23.8312 | 2.8652 | |
| | MJ2 | -7.1390 | 3.49781 | .999 | -22.2045 | 7.9265 | |
| | IPNO.1 | 3.5780 | 4.49365 | 1.000 | -16.3078 | 23.4638 | |
| | IPN1 | -2.4300 | 3.28950 | 1.000 | -16.7066 | 11.8466 | |
| | IPN2 | 2.8820 | 4.06821 | 1.000 | -14.8062 | 20.5702 | |
| | ORT0 | 28.7300(*) | 3.36166 | .000 | 14.1950 | 43.2650 | |
| | ORT0.1 | 19.6720(*) | 3.24883 | .001 | 5.5329 | 33.8111 | |
| | ORT1 | 24.1330(*) | 2.87960 | .000 | 10.8508 | 37.4152 | |
| | ORT2 | 25.3120(*) | 3.66345 | .000 | 9.5406 | 41.0834 | |
| | TB0 | 10.8050 | 3.20110 | .354 | -3.1811 | 24.7911 | |
| | TB0.1 | 14.4570 | 3.88707 | .176 | -2.3460 | 31.2600 | |
| | TB1 | 8.6230 | 3.32300 | .895 | -5.7714 | 23.0174 | |
| | TB2 | 8.6280 | 3.23690 | .860 | -5.4720 | 22.7280 | |
| | IPNO.1 | MJ0 | 2.5760 | 4.65689 | 1.000 | -17.7725 | 22.9245 |
| | | MJ0.1 | -14.6580 | 4.02909 | .329 | -33.9251 | 4.6091 |
| MJ1 | | -14.0610 | 3.78965 | .393 | -33.7344 | 5.6124 | |
| MJ2 | | -10.7170 | 4.41290 | .966 | -30.4106 | 8.9766 | |
| IPNO | | -3.5780 | 4.49365 | 1.000 | -23.4638 | 16.3078 | |
| IPN1 | | -6.0080 | 4.24968 | 1.000 | -25.4065 | 13.3905 | |
| IPN2 | | -.6960 | 4.87743 | 1.000 | -21.7942 | 20.4022 | |
| ORT0 | | 25.1520(*) | 4.30578 | .004 | 5.6678 | 44.6362 | |
| ORT0.1 | | 16.0940 | 4.21828 | .205 | -3.2646 | 35.4526 | |
| ORT1 | | 20.5550(*) | 3.94095 | .031 | 1.2215 | 39.8885 | |
| ORT2 | | 21.7340(*) | 4.54531 | .023 | 1.7117 | 41.7563 | |
| TB0 | | 7.2270 | 4.18163 | 1.000 | -12.0930 | 26.5470 | |
| TB0.1 | | 10.8790 | 4.72740 | .985 | -9.6954 | 31.4534 | |
| TB1 | | 5.0450 | 4.27567 | 1.000 | -14.3909 | 24.4809 | |
| TB2 | | 5.0500 | 4.20910 | 1.000 | -14.2981 | 24.3981 | |
| IPN1 | | MJ0 | 8.5840 | 3.50920 | .957 | -6.8047 | 23.9727 |
| | | MJ0.1 | -8.6500 | 2.61943 | .401 | -20.0974 | 2.7974 |
| | MJ1 | -8.0530 | 2.23368 | .366 | -18.9161 | 2.8101 | |
| | MJ2 | -4.7090 | 3.17829 | 1.000 | -18.4458 | 9.0278 | |
| | IPNO | 2.4300 | 3.28950 | 1.000 | -11.8466 | 16.7066 | |
| | IPNO.1 | 6.0080 | 4.24968 | 1.000 | -13.3905 | 25.4065 | |
| | IPN2 | 5.3120 | 3.79700 | 1.000 | -11.5993 | 22.2233 | |
| | ORT0 | 31.1600(*) | 3.02780 | .000 | 18.1209 | 44.1991 | |
| | ORT0.1 | 22.1020(*) | 2.90203 | .000 | 9.6092 | 34.5948 | |
| | ORT1 | 26.5630(*) | 2.48173 | .000 | 15.4839 | 37.6421 | |
| | ORT2 | 27.7420(*) | 3.35972 | .000 | 13.1158 | 42.3682 | |
| | TB0 | 13.2350(*) | 2.84849 | .024 | .9621 | 25.5079 | |
| | TB0.1 | 16.8870(*) | 3.60225 | .028 | 1.0128 | 32.7612 | |
| | TB1 | 11.0530 | 2.98483 | .178 | -1.7952 | 23.9012 | |
| | TB2 | 11.0580 | 2.88867 | .138 | -1.3792 | 23.4952 | |

| (I) GROUP | (J) GROUP | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|-----------|-------------|-----------------------|------------|----------|-------------------------|-------------|
| | | | | | Lower Bound | Upper Bound |
| IPN2 | MJ0 | 3.2720 | 4.24782 | 1.000 | -15.0637 | 21.6077 |
| | MJ0.1 | -13.9620 | 3.54837 | .180 | -30.4913 | 2.5673 |
| | MJ1 | -13.3650 | 3.27396 | .227 | -30.1423 | 3.4123 |
| | MJ2 | -10.0210 | 3.97882 | .933 | -27.4222 | 7.3802 |
| | IPN0 | -2.8820 | 4.06821 | 1.000 | -20.5702 | 14.8062 |
| | IPN0.1 | .6960 | 4.87743 | 1.000 | -20.4022 | 21.7942 |
| | IPN1 | -5.3120 | 3.79700 | 1.000 | -22.2233 | 11.5993 |
| | ORT0 | 25.8480(*) | 3.85968 | .001 | 8.7839 | 42.9121 |
| | ORT0.1 | 16.7900 | 3.76182 | .051 | -.0441 | 33.6241 |
| | ORT1 | 21.2510(*) | 3.44797 | .006 | 4.7377 | 37.7643 |
| | ORT2 | 22.4300(*) | 4.12520 | .005 | 4.5458 | 40.3142 |
| | TB0 | 7.9230 | 3.72067 | .998 | -8.8292 | 24.6752 |
| | TB0.1 | 11.5750 | 4.32501 | .846 | -7.0633 | 30.2133 |
| | TB1 | 5.7410 | 3.82606 | 1.000 | -11.2388 | 22.7208 |
| ORT0 | TB2 | 5.7460 | 3.75152 | 1.000 | -11.0667 | 22.5587 |
| | MJ0 | -22.5760(*) | 3.57693 | .001 | -38.1728 | -6.9792 |
| | MJ0.1 | -39.8100(*) | 2.70949 | .000 | -51.7227 | -27.8973 |
| | MJ1 | -39.2130(*) | 2.33864 | .000 | -50.6766 | -27.7494 |
| | MJ2 | -35.8690(*) | 3.25291 | .000 | -49.8928 | -21.8452 |
| | IPN0 | -28.7300(*) | 3.36166 | .000 | -43.2650 | -14.1950 |
| | IPN0.1 | -25.1520(*) | 4.30578 | .004 | -44.6362 | -5.6678 |
| | IPN1 | -31.1600(*) | 3.02780 | .000 | -44.1991 | -18.1209 |
| | IPN2 | -25.8480(*) | 3.85968 | .001 | -42.9121 | -8.7839 |
| | ORT0.1 | -9.0580 | 2.98357 | .577 | -21.9185 | 3.8025 |
| | ORT1 | -4.5970 | 2.57661 | 1.000 | -16.1931 | 6.9991 |
| | ORT2 | -3.4180 | 3.43040 | 1.000 | -18.2856 | 11.4496 |
| | TB0 | -17.9250(*) | 2.93152 | .001 | -30.5829 | -5.2671 |
| | TB0.1 | -14.2730 | 3.66826 | .136 | -30.3361 | 1.7901 |
| TB1 | -20.1070(*) | 3.06417 | .000 | -33.2971 | -6.9169 | |
| TB2 | -20.1020(*) | 2.97058 | .000 | -32.9111 | -7.2929 | |
| ORT0.1 | MJ0 | -13.5180 | 3.47110 | .139 | -28.7982 | 1.7622 |
| | MJ0.1 | -30.7520(*) | 2.56817 | .000 | -41.9393 | -19.5647 |
| | MJ1 | -30.1550(*) | 2.17334 | .000 | -40.6728 | -19.6372 |
| | MJ2 | -26.8110(*) | 3.13618 | .000 | -40.3938 | -13.2282 |
| | IPN0 | -19.6720(*) | 3.24883 | .001 | -33.8111 | -5.5329 |
| | IPN0.1 | -16.0940 | 4.21828 | .205 | -35.4526 | 3.2646 |
| | IPN1 | -22.1020(*) | 2.90203 | .000 | -34.5948 | -9.6092 |
| | IPN2 | -16.7900 | 3.76182 | .051 | -33.6241 | .0441 |
| | ORT0 | 9.0580 | 2.98357 | .577 | -3.8025 | 21.9185 |
| | ORT1 | 4.4610 | 2.42757 | 1.000 | -6.3262 | 15.2482 |
| | ORT2 | 5.6400 | 3.31991 | 1.000 | -8.8584 | 20.1384 |
| | TB0 | -8.8670 | 2.80143 | .476 | -20.9281 | 3.1941 |
| | TB0.1 | -5.2150 | 3.56515 | 1.000 | -20.9915 | 10.5615 |
| | TB1 | -11.0490 | 2.93995 | .159 | -23.7110 | 1.6130 |
| TB2 | -11.0440 | 2.84227 | .122 | -23.2772 | 1.1892 | |

| (I) GROUP | (J) GROUP | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | | |
|-----------|-----------|-----------------------|-------------|---------|-------------------------|-------------|----------|
| | | | | | Lower Bound | Upper Bound | |
| ORT1 | MJ0 | -17.9790(*) | 3.12822 | .008 | -32.6684 | -3.2896 | |
| | MJ0.1 | -35.2130(*) | 2.08152 | .000 | -44.2225 | -26.2035 | |
| | MJ1 | -34.6160(*) | 1.56864 | .000 | -41.7079 | -27.5241 | |
| | MJ2 | -31.2720(*) | 2.75188 | .000 | -43.8383 | -18.7057 | |
| | IPN0 | -24.1330(*) | 2.87960 | .000 | -37.4152 | -10.8508 | |
| | IPN0.1 | -20.5550(*) | 3.94095 | .031 | -39.8885 | -1.2215 | |
| | IPN1 | -26.5630(*) | 2.48173 | .000 | -37.6421 | -15.4839 | |
| | IPN2 | -21.2510(*) | 3.44797 | .006 | -37.7643 | -4.7377 | |
| | ORT0 | 4.5970 | 2.57661 | 1.000 | -6.9991 | 16.1931 | |
| | ORT0.1 | -4.4610 | 2.42757 | 1.000 | -15.2482 | 6.3262 | |
| | ORT2 | 1.1790 | 2.95957 | 1.000 | -12.5542 | 14.9122 | |
| | TB0 | -13.3280(*) | 2.36331 | .004 | -23.7727 | -2.8833 | |
| | TB0.1 | -9.6760 | 3.23226 | .724 | -24.9577 | 5.6057 | |
| | TB1 | -15.5100(*) | 2.52597 | .002 | -26.8293 | -4.1907 | |
| | TB2 | -15.5050(*) | 2.41158 | .001 | -26.2066 | -4.8034 | |
| | ORT2 | MJ0 | -19.1580(*) | 3.86193 | .012 | -35.7964 | -2.5196 |
| | | MJ0.1 | -36.3920(*) | 3.07595 | .000 | -50.2767 | -22.5073 |
| MJ1 | | -35.7950(*) | 2.75488 | .000 | -49.6331 | -21.9569 | |
| MJ2 | | -32.4510(*) | 3.56393 | .000 | -47.8187 | -17.0833 | |
| IPN0 | | -25.3120(*) | 3.66345 | .000 | -41.0834 | -9.5406 | |
| IPN0.1 | | -21.7340(*) | 4.54531 | .023 | -41.7563 | -1.7117 | |
| IPN1 | | -27.7420(*) | 3.35972 | .000 | -42.3682 | -13.1158 | |
| IPN2 | | -22.4300(*) | 4.12520 | .005 | -40.3142 | -4.5458 | |
| ORT0 | | 3.4180 | 3.43040 | 1.000 | -11.4496 | 18.2856 | |
| ORT0.1 | | -5.6400 | 3.31991 | 1.000 | -20.1384 | 8.8584 | |
| ORT1 | | -1.1790 | 2.95957 | 1.000 | -14.9122 | 12.5542 | |
| TB0 | | -14.5070(*) | 3.27322 | .045 | -28.8641 | -.1499 | |
| TB0.1 | | -10.8550 | 3.94668 | .798 | -27.8842 | 6.1742 | |
| TB1 | | -16.6890(*) | 3.39253 | .015 | -31.4250 | -1.9530 | |
| TB2 | | -16.6840(*) | 3.30824 | .012 | -31.1462 | -2.2218 | |
| TB0 | | MJ0 | -4.6510 | 3.42647 | 1.000 | -19.8125 | 10.5105 |
| | | MJ0.1 | -21.8850(*) | 2.50752 | .000 | -32.7697 | -11.0003 |
| | MJ1 | -21.2880(*) | 2.10132 | .000 | -31.3938 | -11.1822 | |
| | MJ2 | -17.9440(*) | 3.08671 | .002 | -31.3540 | -4.5340 | |
| | IPN0 | -10.8050 | 3.20110 | .354 | -24.7911 | 3.1811 | |
| | IPN0.1 | -7.2270 | 4.18163 | 1.000 | -26.5470 | 12.0930 | |
| | IPN1 | -13.2350(*) | 2.84849 | .024 | -25.5079 | -.9621 | |
| | IPN2 | -7.9230 | 3.72067 | .998 | -24.6752 | 8.8292 | |
| | ORT0 | 17.9250(*) | 2.93152 | .001 | 5.2671 | 30.5829 | |
| | ORT0.1 | 8.8670 | 2.80143 | .476 | -3.1941 | 20.9281 | |
| | ORT1 | 13.3280(*) | 2.36331 | .004 | 2.8833 | 23.7727 | |
| | ORT2 | 14.5070(*) | 3.27322 | .045 | .1499 | 28.8641 | |
| | TB0.1 | 3.6520 | 3.52171 | 1.000 | -12.0187 | 19.3227 | |
| | TB1 | -2.1820 | 2.88712 | 1.000 | -14.6323 | 10.2683 | |
| | TB2 | -2.1770 | 2.78758 | 1.000 | -14.1768 | 9.8228 | |

| (I) GROUP | (J) GROUP | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | | |
|-----------|-----------|-----------------------|-------------|---------|-------------------------|-------------|---------|
| | | | | | Lower Bound | Upper Bound | |
| TB0.1 | MJ0 | -8.3030 | 4.07468 | .999 | -25.8461 | 9.2401 | |
| | MJ0.1 | -25.5370(*) | 3.33915 | .000 | -40.8863 | -10.1877 | |
| | MJ1 | -24.9400(*) | 3.04595 | .001 | -40.4294 | -9.4506 | |
| | MJ2 | -21.5960(*) | 3.79342 | .003 | -38.0634 | -5.1286 | |
| | IPN0 | -14.4570 | 3.88707 | .176 | -31.2600 | 2.3460 | |
| | IPN0.1 | -10.8790 | 4.72740 | .985 | -31.4534 | 9.6954 | |
| | IPN1 | -16.8870(*) | 3.60225 | .028 | -32.7612 | -1.0128 | |
| | IPN2 | -11.5750 | 4.32501 | .846 | -30.2133 | 7.0633 | |
| | ORT0 | 14.2730 | 3.66826 | .136 | -1.7901 | 30.3361 | |
| | ORT0.1 | 5.2150 | 3.56515 | 1.000 | -10.5615 | 20.9915 | |
| | ORT1 | 9.6760 | 3.23226 | .724 | -5.6057 | 24.9577 | |
| | ORT2 | 10.8550 | 3.94668 | .798 | -6.1742 | 27.8842 | |
| | TB0 | -3.6520 | 3.52171 | 1.000 | -19.3227 | 12.0187 | |
| | TB1 | -5.8340 | 3.63287 | 1.000 | -21.7935 | 10.1255 | |
| | TB2 | -5.8290 | 3.55428 | 1.000 | -21.5781 | 9.9201 | |
| | TB1 | MJ0 | -2.4690 | 3.54062 | 1.000 | -17.9520 | 13.0140 |
| | | MJ0.1 | -19.7030(*) | 2.66138 | .000 | -31.3659 | -8.0401 |
| MJ1 | | -19.1060(*) | 2.28273 | .000 | -30.2498 | -7.9622 | |
| MJ2 | | -15.7620(*) | 3.21295 | .014 | -29.6300 | -1.8940 | |
| IPN0 | | -8.6230 | 3.32300 | .895 | -23.0174 | 5.7714 | |
| IPN0.1 | | -5.0450 | 4.27567 | 1.000 | -24.4809 | 14.3909 | |
| IPN1 | | -11.0530 | 2.98483 | .178 | -23.9012 | 1.7952 | |
| IPN2 | | -5.7410 | 3.82606 | 1.000 | -22.7208 | 11.2388 | |
| ORT0 | | 20.1070(*) | 3.06417 | .000 | 6.9169 | 33.2971 | |
| ORT0.1 | | 11.0490 | 2.93995 | .159 | -1.6130 | 23.7110 | |
| ORT1 | | 15.5100(*) | 2.52597 | .002 | 4.1907 | 26.8293 | |
| ORT2 | | 16.6890(*) | 3.39253 | .015 | 1.9530 | 31.4250 | |
| TB0 | | 2.1820 | 2.88712 | 1.000 | -10.2683 | 14.6323 | |
| TB0.1 | | 5.8340 | 3.63287 | 1.000 | -10.1255 | 21.7935 | |
| TB2 | | .0050 | 2.92676 | 1.000 | -12.6034 | 12.6134 | |
| TB2 | | MJ0 | -2.4740 | 3.45994 | 1.000 | -17.7236 | 12.7756 |
| | | MJ0.1 | -19.7080(*) | 2.55306 | .000 | -30.8194 | -8.5966 |
| | MJ1 | -19.1110(*) | 2.15547 | .000 | -29.5266 | -8.6954 | |
| | MJ2 | -15.7670(*) | 3.12382 | .011 | -29.3058 | -2.2282 | |
| | IPN0 | -8.6280 | 3.23690 | .860 | -22.7280 | 5.4720 | |
| | IPN0.1 | -5.0500 | 4.20910 | 1.000 | -24.3981 | 14.2981 | |
| | IPN1 | -11.0580 | 2.88867 | .138 | -23.4952 | 1.3792 | |
| | IPN2 | -5.7460 | 3.75152 | 1.000 | -22.5587 | 11.0667 | |
| | ORT0 | 20.1020(*) | 2.97058 | .000 | 7.2929 | 32.9111 | |
| | ORT0.1 | 11.0440 | 2.84227 | .122 | -1.1892 | 23.2772 | |
| | ORT1 | 15.5050(*) | 2.41158 | .001 | 4.8034 | 26.2066 | |
| | ORT2 | 16.6840(*) | 3.30824 | .012 | 2.2218 | 31.1462 | |
| | TB0 | 2.1770 | 2.78758 | 1.000 | -9.8228 | 14.1768 | |
| | TB0.1 | 5.8290 | 3.55428 | 1.000 | -9.9201 | 21.5781 | |
| | TB1 | -.0050 | 2.92676 | 1.000 | -12.6134 | 12.6034 | |

ตาราง ด. แสดงชนิดของการแตกหักในชิ้นงานตัวอย่างจำแนกตามกลุ่ม
group * fracture type Crosstabulation

| group | | | fracture type | | | | Total |
|--------|----------------|--|---------------|--------------------------|---------------------------|--------------------|--------|
| | | | adhesive | cohesive in denture base | cohesive in denture tooth | adhesive& cohesive | |
| MJ0 | Count | | 8 | 1 | 1 | 0 | 10 |
| | % within group | | 80,0% | 10,0% | 10,0% | ,0% | 100,0% |
| MJ0.1 | Count | | 4 | 4 | 0 | 2 | 10 |
| | % within group | | 40,0% | 40,0% | ,0% | 20,0% | 100,0% |
| MJ1 | Count | | 3 | 4 | 1 | 2 | 10 |
| | % within group | | 30,0% | 40,0% | 10,0% | 20,0% | 100,0% |
| MJ2 | Count | | 9 | 0 | 1 | 0 | 10 |
| | % within group | | 90,0% | ,0% | 10,0% | ,0% | 100,0% |
| IPN0 | Count | | 7 | 0 | 2 | 1 | 10 |
| | % within group | | 70,0% | ,0% | 20,0% | 10,0% | 100,0% |
| IPN0.1 | Count | | 1 | 3 | 6 | 0 | 10 |
| | % within group | | 10,0% | 30,0% | 60,0% | ,0% | 100,0% |
| IPN1 | Count | | 7 | 2 | 0 | 1 | 10 |
| | % within group | | 70,0% | 20,0% | ,0% | 10,0% | 100,0% |
| IPN2 | Count | | 8 | 0 | 1 | 1 | 10 |
| | % within group | | 80,0% | ,0% | 10,0% | 10,0% | 100,0% |
| ORT0 | Count | | 1 | 0 | 9 | 0 | 10 |
| | % within group | | 10,0% | ,0% | 90,0% | ,0% | 100,0% |
| ORT0.1 | Count | | 0 | 0 | 10 | 0 | 10 |
| | % within group | | ,0% | ,0% | 100,0% | ,0% | 100,0% |
| ORT1 | Count | | 0 | 0 | 10 | 0 | 10 |
| | % within group | | ,0% | ,0% | 100,0% | ,0% | 100,0% |
| ORT2 | Count | | 0 | 0 | 10 | 0 | 10 |
| | % within group | | ,0% | ,0% | 100,0% | ,0% | 100,0% |
| TB0 | Count | | 8 | 0 | 1 | 1 | 10 |
| | % within group | | 80,0% | ,0% | 10,0% | 10,0% | 100,0% |
| TB0.1 | Count | | 3 | 1 | 6 | 0 | 10 |
| | % within group | | 30,0% | 10,0% | 60,0% | ,0% | 100,0% |
| TB1 | Count | | 9 | 0 | 1 | 0 | 10 |
| | % within group | | 90,0% | ,0% | 10,0% | ,0% | 100,0% |
| TB2 | Count | | 0 | 0 | 10 | 0 | 10 |
| | % within group | | ,0% | ,0% | 100,0% | ,0% | 100,0% |

ตาราง ต แสดงการจำแนกการแตกหักของซีฟันปลอม Major dent จำแนกตามความเข้มข้นของสารละลายไซเลน

concentration of silane * fracture type Crosstabulation

Count

| | | fracture type | | | | Total |
|-------------------------|-----|---------------|--------------------------|---------------------------|---------------------|-------|
| | | adhesive | cohesive in denture base | cohesive in denture tooth | adhesive&c cohesive | |
| concentration of silane | ,0 | 8 | 1 | 1 | 0 | 10 |
| | ,1 | 10 | 4 | 1 | 5 | 20 |
| | 1,0 | 3 | 4 | 1 | 2 | 10 |
| | 2,0 | 9 | 0 | 1 | 0 | 10 |
| Total | | 30 | 9 | 4 | 7 | 50 |

ตาราง ถ แสดงการทดสอบ Fisher's Exact Test ระหว่างชนิดของการแตกหักของซีฟันปลอม Major dent และความเข้มข้นของสารละลายไซเลน

Chi-Square Tests

| | Value | df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) | Point Probability |
|------------------------------|-----------|----|-----------------------|----------------------|----------------------|-------------------|
| Pearson Chi-Square | 14,050(a) | 9 | ,121 | ,113 | | |
| Likelihood Ratio | 17,775 | 9 | ,038 | ,072 | | |
| Fisher's Exact Test | 13,247 | | | ,071 | | |
| Linear-by-Linear Association | 1,079(b) | 1 | ,299 | ,305 | ,155 | ,001 |
| N of Valid Cases | 50 | | | | | |

a 12 cells (75,0%) have expected count less than 5. The minimum expected count is ,80.

b The standardized statistic is -1,039.

ตาราง ท แสดงการจำแนกการแตกหักของซีฟันปลอม Excellece IPN จำแนกตามความเข้มข้นของสารละลายไซเลน

concentration of silane * fracture type Crosstabulation

Count

| | | fracture type | | | | Total |
|-------------------------|-----|---------------|--------------------------|---------------------------|---------------------|-------|
| | | adhesive | cohesive in denture base | cohesive in denture tooth | adhesive&c cohesive | |
| concentration of silane | ,0 | 7 | 0 | 2 | 1 | 10 |
| | ,1 | 1 | 3 | 6 | 0 | 10 |
| | 1,0 | 7 | 2 | 0 | 1 | 10 |
| | 2,0 | 8 | 0 | 1 | 1 | 10 |
| Total | | 23 | 5 | 9 | 3 | 40 |

ตาราง ๓ แสดงการทดสอบ Fisher's Exact Test ระหว่างชนิดของการแตกหักของซีฟันปลอม Excellence IPN และความเข้มข้นของสารละลายไฮเลน

Chi-Square Tests

| | Value | df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) | Point Probability |
|------------------------------|-----------|----|-----------------------|----------------------|----------------------|-------------------|
| Pearson Chi-Square | 20,970(a) | 9 | ,013 | ,008 | | |
| Likelihood Ratio | 25,829 | 9 | ,002 | ,003 | | |
| Fisher's Exact Test | 19,694 | | | ,002 | | |
| Linear-by-Linear Association | 2,430(b) | 1 | ,119 | ,121 | ,058 | ,000 |
| N of Valid Cases | 40 | | | | | |

a 12 cells (75,0%) have expected count less than 5. The minimum expected count is ,75.

b The standardized statistic is -1,559.

ตาราง ๔ แสดงการจำแนกการแตกหักของซีฟันปลอม Orthosit จำแนกตามความเข้มข้นของสารละลายไฮเลน

concentration of silane * fracture type Crosstabulation

Count

| | fracture type | | Total |
|----------------------------|---------------|---------------------------|-------|
| | adhesive | cohesive in denture tooth | |
| concentration of silane ,0 | 1 | 9 | 10 |
| ,1 | 0 | 20 | 20 |
| 1,0 | 0 | 10 | 10 |
| 2,0 | 0 | 10 | 10 |
| Total | 1 | 49 | 50 |

ตาราง ๕ แสดงการทดสอบ Fisher's Exact Test ระหว่างชนิดของการแตกหักของซีฟันปลอม Orthosit และความเข้มข้นของสารละลายไฮเลน

Chi-Square Tests

| | Value | df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) | Point Probability |
|------------------------------|----------|----|-----------------------|----------------------|----------------------|-------------------|
| Pearson Chi-Square | 4,082(a) | 3 | ,253 | ,600 | | |
| Likelihood Ratio | 3,302 | 3 | ,347 | ,600 | | |
| Fisher's Exact Test | 3,510 | | | ,600 | | |
| Linear-by-Linear Association | ,689(b) | 1 | ,406 | ,400 | ,200 | ,200 |
| N of Valid Cases | 50 | | | | | |

a 4 cells (50,0%) have expected count less than 5. The minimum expected count is ,20.

b The standardized statistic is ,830.

ตาราง ป แสดงการจำแนกการแตกหักของซีฟันทึบ Trubyte จำแนกตามความเข้มข้นของสารละลายไฮเลน

concentration of silane * fracture type Crosstabulation

Count

| | | fracture type | | | | Total |
|-------------------------|-----|---------------|--------------------------|---------------------------|-------------------|-------|
| | | adhesive | cohesive in denture base | cohesive in denture tooth | adhesive&cohesive | |
| concentration of silane | ,0 | 8 | 0 | 1 | 1 | 10 |
| | ,1 | 3 | 1 | 6 | 0 | 10 |
| | 1,0 | 9 | 0 | 1 | 0 | 10 |
| | 2,0 | 0 | 0 | 10 | 0 | 10 |
| Total | | 20 | 1 | 18 | 1 | 40 |

ตาราง ผ แสดงการทดสอบ Fisher's Exact Test ระหว่างชนิดของการแตกหักของซีฟันทึบ Trubyte และความเข้มข้นของสารละลายไฮเลน

Chi-Square Tests

| | Value | df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) | Point Probability |
|------------------------------|-----------|----|-----------------------|----------------------|----------------------|-------------------|
| Pearson Chi-Square | 29,467(a) | 9 | ,001 | ,000 | | |
| Likelihood Ratio | 33,986 | 9 | ,000 | ,000 | | |
| Fisher's Exact Test | 29,611 | | | ,000 | | |
| Linear-by-Linear Association | 5,388(b) | 1 | ,020 | ,019 | ,010 | ,000 |
| N of Valid Cases | 40 | | | | | |

a 12 cells (75,0%) have expected count less than 5. The minimum expected count is ,25.

b The standardized statistic is 2,321.

ประวัติผู้เขียนวิทยานิพนธ์

นางสาวพีรานุช ประหยัดทรัพย์ เกิดเมื่อวันที่ 15 เดือนกุมภาพันธ์ พุทธศักราช 2523 ณ จังหวัดกรุงเทพมหานคร เรียนระดับมัธยมศึกษาที่ โรงเรียนสตรีวิทยา สำเร็จการศึกษาทันตแพทยศาสตรบัณฑิตจาก มหาวิทยาลัยศรีนครินทรวิโรฒ ในปีพุทธศักราช 2545 เข้ารับราชการในตำแหน่งทันตแพทย์ สังกัดสำนักงานสาธารณสุขจังหวัดชัยนาท ดำรงตำแหน่งหัวหน้าฝ่ายทันตสาธารณสุข โรงพยาบาลวัดสิงห์ จังหวัดชัยนาท เป็นเวลา 2 ปี จึงลาออกจากราชการ เพื่อศึกษาต่อในหลักสูตรปริญญาวิทยาศาสตรมหาบัณฑิต สาขาวิชาทันตกรรมประดิษฐ์ คณะทันตแพทยศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย