A.5.3 Preposition placement in interrogative clauses

A.5.3.1 Sample material set

material set 1

reference sentence: Who did she marry?

01.01: Who did Jane rely on?

01.02: Whom did she dream of?

01.03: With who did Claudia sleep?

01.04: For whom did Mike apologise?

01.05: At who did Bill laugh at?

01.06: About whom did Steve talk about?

02.01: Which room did the murderer kill the victim in?

02.02: What time did the party start at?

02.03: In which year did Elvis die?

02.04: At what bar did they enjoy a few cocktails?

02.05: On which island did he find gold on?

02.06: On what day did James arrive on?

03.01: Which frequency did earthquakes occur with?

03.02: What ease did he win with?

03.03: With which precision did Ben work?

03.04: During what service did they sit?

03.05: On which occasions did Kelly faint on?

03.06: In what way did he achieve his goal in?

Fillers

F.01: Who sued Janet?

F.02: What angered Nina?

F.03: Which student hugged the teacher?

F.04: Who did the teenager like?

F.05: Whom did Mark call?

F.06: Which problem did the dentist encounter?

F.07: Who John find?

F.08: Whom Steve hit?

F.09: What kind of steak Jeff eat?

F.10: Who did Mary bought?

F.11: Whom did David saw?

F.12: Whom remembered Sally?

F.13: Who kissed the baby?

F.14: What scared Fran?

F.15: Which pupil harassed Ann?

F.16: Who did Sam rescue?

F.17: Whom did Martin adore?

F.18: Which country did Ben visit?

F.19: Who the child interview?

F.20: Whom Bob insult?

F.21: What brand of vodka Martha drink?

F.22: Who did Jennifer played?

F.23: Whom did Michael read?

F.24: Whom sold Will?

F.25: Who punched Sue?

F.26: What hurt the doctor?

F.27: Which player dated Joe?

F.28 Who did Fred bother?

F.29: Whom did the thief date?

F.30: Which friend did Lisa annoy?

F.31: Who Jacqueline envy?

F.32: Whom Helen marry?

F.33: What song Nicola sing?

F.34: Who did Sarah killed?

F.35: Whom did Brad forgot?

F.36: Whom told Greg?

A.5.3.2 SPSS results of British English speakers

**BY-SUBJECT**

**Tests der Zwischensubjekteffekte**

Maß: MASS\_1

Transformierte Variable: Mittel

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Quelle | Quadratsumme vom Typ III | df | Mittel der Quadrate | F | Signifikanz |
| Konstanter Term | 15,664 | 1 | 15,664 | 10,824 | ,003 |
| age | 4,159 | 1 | 4,159 | 2,874 | ,102 |
| sex | ,036 | 1 | ,036 | ,025 | ,876 |
| Fehler | 39,075 | 27 | 1,447 |  |  |

**Mauchly-Test auf Sphärizität(b)**

Maß: MASS\_1

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Innersubjekteffekt | Mauchly-W | Approximiertes Chi-Quadrat | df | Signifikanz | Epsilon(a) | | |
| Greenhouse-Geisser | Huynh-Feldt | Untergrenze |
| pp | ,922 | 2,269 | 2 | ,322 | ,928 | ,989 | ,500 |
| pplace | ,861 | 4,201 | 2 | ,122 | ,878 | ,930 | ,500 |
| wh\_q | 1,000 | ,000 | 0 | . | 1,000 | 1,000 | 1,000 |
| pp \* pplace | ,673 | 10,841 | 9 | ,288 | ,830 | ,950 | ,250 |
| pp \* wh\_q | ,905 | 2,810 | 2 | ,245 | ,913 | ,971 | ,500 |
| pplace \* wh\_q | ,967 | ,943 | 2 | ,624 | ,968 | 1,000 | ,500 |
| pp \* pplace \* wh\_q | ,612 | 13,454 | 9 | ,144 | ,797 | ,907 | ,250 |

Prüft die Nullhypothese, daß sich die Fehlerkovarianz-Matrix der orthonormalisierten transformierten abhängigen Variablen proportional zur Einheitsmatrix verhält.

a Kann zum Korrigieren der Freiheitsgrade für die gemittelten Signifikanztests verwendet werden. In der Tabelle mit den Tests der Effekte innerhalb der Subjekte werden korrigierte Tests angezeigt.

b Design: Intercept

Innersubjekt-Design: pp+pplace+wh\_q+pp\*pplace+pp\*wh\_q+pplace\*wh\_q+pp\*pplace\*wh\_q

**Tests der Innersubjekteffekte**

Maß: MASS\_1

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Quelle |  | Quadratsumme vom Typ III | | df | | Mittel der Quadrate | | F | | Signifikanz | |
| pp | Sphärizität angenommen | | 20,983 | | 2 | | 10,491 | | 14,902 | | ,000 |
| Greenhouse-Geisser | | 20,983 | | 1,856 | | 11,308 | | 14,902 | | ,000 |
| Huynh-Feldt | | 20,983 | | 1,977 | | 10,613 | | 14,902 | | ,000 |
| Untergrenze | | 20,983 | | 1,000 | | 20,983 | | 14,902 | | ,001 |
| Fehler(pp) | Sphärizität angenommen | | 40,833 | | 58 | | ,704 | |  | |  |
| Greenhouse-Geisser | | 40,833 | | 53,811 | | ,759 | |  | |  |
| Huynh-Feldt | | 40,833 | | 57,335 | | ,712 | |  | |  |
| Untergrenze | | 40,833 | | 29,000 | | 1,408 | |  | |  |
| pplace | Sphärizität angenommen | | 46,902 | | 2 | | 23,451 | | 20,637 | | ,000 |
| Greenhouse-Geisser | | 46,902 | | 1,755 | | 26,718 | | 20,637 | | ,000 |
| Huynh-Feldt | | 46,902 | | 1,860 | | 25,222 | | 20,637 | | ,000 |
| Untergrenze | | 46,902 | | 1,000 | | 46,902 | | 20,637 | | ,000 |
| Fehler(pplace) | Sphärizität angenommen | | 65,908 | | 58 | | 1,136 | |  | |  |
| Greenhouse-Geisser | | 65,908 | | 50,908 | | 1,295 | |  | |  |
| Huynh-Feldt | | 65,908 | | 53,928 | | 1,222 | |  | |  |
| Untergrenze | | 65,908 | | 29,000 | | 2,273 | |  | |  |
| wh\_q | Sphärizität angenommen | | ,226 | | 1 | | ,226 | | ,414 | | ,525 |
| Greenhouse-Geisser | | ,226 | | 1,000 | | ,226 | | ,414 | | ,525 |
| Huynh-Feldt | | ,226 | | 1,000 | | ,226 | | ,414 | | ,525 |
| Untergrenze | | ,226 | | 1,000 | | ,226 | | ,414 | | ,525 |
| Fehler(wh\_q) | Sphärizität angenommen | | 15,809 | | 29 | | ,545 | |  | |  |
| Greenhouse-Geisser | | 15,809 | | 29,000 | | ,545 | |  | |  |
| Huynh-Feldt | | 15,809 | | 29,000 | | ,545 | |  | |  |
| Untergrenze | | 15,809 | | 29,000 | | ,545 | |  | |  |
| pp \* pplace | Sphärizität angenommen | | 14,140 | | 4 | | 3,535 | | 7,413 | | ,000 |
| Greenhouse-Geisser | | 14,140 | | 3,319 | | 4,261 | | 7,413 | | ,000 |
| Huynh-Feldt | | 14,140 | | 3,799 | | 3,722 | | 7,413 | | ,000 |
| Untergrenze | | 14,140 | | 1,000 | | 14,140 | | 7,413 | | ,011 |
| Fehler(pp\*pplace) | Sphärizität angenommen | | 55,311 | | 116 | | ,477 | |  | |  |
| Greenhouse-Geisser | | 55,311 | | 96,238 | | ,575 | |  | |  |
| Huynh-Feldt | | 55,311 | | 110,163 | | ,502 | |  | |  |
| Untergrenze | | 55,311 | | 29,000 | | 1,907 | |  | |  |
| pp \* wh\_q | Sphärizität angenommen | | ,714 | | 2 | | ,357 | | ,777 | | ,464 |
| Greenhouse-Geisser | | ,714 | | 1,826 | | ,391 | | ,777 | | ,454 |
| Huynh-Feldt | | ,714 | | 1,942 | | ,368 | | ,777 | | ,461 |
| Untergrenze | | ,714 | | 1,000 | | ,714 | | ,777 | | ,385 |
| Fehler(pp\*wh\_q) | Sphärizität angenommen | | 26,631 | | 58 | | ,459 | |  | |  |
| Greenhouse-Geisser | | 26,631 | | 52,945 | | ,503 | |  | |  |
| Huynh-Feldt | | 26,631 | | 56,316 | | ,473 | |  | |  |
| Untergrenze | | 26,631 | | 29,000 | | ,918 | |  | |  |
| pplace \* wh\_q | Sphärizität angenommen | | 1,277 | | 2 | | ,638 | | 1,606 | | ,210 |
| Greenhouse-Geisser | | 1,277 | | 1,936 | | ,660 | | 1,606 | | ,210 |
| Huynh-Feldt | | 1,277 | | 2,000 | | ,638 | | 1,606 | | ,210 |
| Untergrenze | | 1,277 | | 1,000 | | 1,277 | | 1,606 | | ,215 |
| Fehler(pplace\*wh\_q) | Sphärizität angenommen | | 23,066 | | 58 | | ,398 | |  | |  |
| Greenhouse-Geisser | | 23,066 | | 56,141 | | ,411 | |  | |  |
| Huynh-Feldt | | 23,066 | | 58,000 | | ,398 | |  | |  |
| Untergrenze | | 23,066 | | 29,000 | | ,795 | |  | |  |
| pp \* pplace \* wh\_q | Sphärizität angenommen | | 4,191 | | 4 | | 1,048 | | 1,797 | | ,134 |
| Greenhouse-Geisser | | 4,191 | | 3,189 | | 1,314 | | 1,797 | | ,150 |
| Huynh-Feldt | | 4,191 | | 3,629 | | 1,155 | | 1,797 | | ,141 |
| Untergrenze | | 4,191 | | 1,000 | | 4,191 | | 1,797 | | ,190 |
| Fehler(pp\*pplace\*wh\_q) | Sphärizität angenommen | | 67,618 | | 116 | | ,583 | |  | |  |
| Greenhouse-Geisser | | 67,618 | | 92,485 | | ,731 | |  | |  |
| Huynh-Feldt | | 67,618 | | 105,248 | | ,642 | |  | |  |
| Untergrenze | | 67,618 | | 29,000 | | 2,332 | |  | |  |

**BY-ITEM**

**Mauchly-Test auf Sphärizität(b)**

Maß: MASS\_1

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Innersubjekteffekt | Mauchly-W | Approximiertes Chi-Quadrat | df | Signifikanz | Epsilon(a) | | |
| Greenhouse-Geisser | Huynh-Feldt | Untergrenze |
| pp | ,668 | 1,613 | 2 | ,446 | ,751 | 1,000 | ,500 |
| pplace | ,804 | ,874 | 2 | ,646 | ,836 | 1,000 | ,500 |
| wh\_q | 1,000 | ,000 | 0 | . | 1,000 | 1,000 | 1,000 |
| pp \* pplace | ,179 | 5,885 | 9 | ,783 | ,623 | 1,000 | ,250 |
| pp \* wh\_q | ,434 | 3,337 | 2 | ,188 | ,639 | ,761 | ,500 |
| pplace \* wh\_q | ,766 | 1,065 | 2 | ,587 | ,811 | 1,000 | ,500 |
| pp \* pplace \* wh\_q | ,014 | 14,603 | 9 | ,139 | ,460 | ,716 | ,250 |

Prüft die Nullhypothese, daß sich die Fehlerkovarianz-Matrix der orthonormalisierten transformierten abhängigen Variablen proportional zur Einheitsmatrix verhält.

a Kann zum Korrigieren der Freiheitsgrade für die gemittelten Signifikanztests verwendet werden. In der Tabelle mit den Tests der Effekte innerhalb der Subjekte werden korrigierte Tests angezeigt.

b Design: Intercept

Innersubjekt-Design: pp+pplace+wh\_q+pp\*pplace+pp\*wh\_q+pplace\*wh\_q+pp\*pplace\*wh\_q

**Tests der Innersubjekteffekte**

Maß: MASS\_1

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Quelle |  | Quadratsumme vom Typ III | df | | Mittel der Quadrate | | F | | Signifikanz | |
| pp | Sphärizität angenommen | 4,197 | | 2 | | 2,098 | | 25,900 | | ,000 |
|  | Greenhouse-Geisser | 4,197 | | 1,502 | | 2,795 | | 25,900 | | ,001 |
|  | Huynh-Feldt | 4,197 | | 2,000 | | 2,098 | | 25,900 | | ,000 |
|  | Untergrenze | 4,197 | | 1,000 | | 4,197 | | 25,900 | | ,004 |
| Fehler(pp) | Sphärizität angenommen | ,810 | | 10 | | ,081 | |  | |  |
|  | Greenhouse-Geisser | ,810 | | 7,508 | | ,108 | |  | |  |
|  | Huynh-Feldt | ,810 | | 10,000 | | ,081 | |  | |  |
|  | Untergrenze | ,810 | | 5,000 | | ,162 | |  | |  |
| pplace | Sphärizität angenommen | 9,380 | | 2 | | 4,690 | | 19,346 | | ,000 |
|  | Greenhouse-Geisser | 9,380 | | 1,672 | | 5,611 | | 19,346 | | ,001 |
|  | Huynh-Feldt | 9,380 | | 2,000 | | 4,690 | | 19,346 | | ,000 |
|  | Untergrenze | 9,380 | | 1,000 | | 9,380 | | 19,346 | | ,007 |
| Fehler(pplace) | Sphärizität angenommen | 2,424 | | 10 | | ,242 | |  | |  |
|  | Greenhouse-Geisser | 2,424 | | 8,359 | | ,290 | |  | |  |
|  | Huynh-Feldt | 2,424 | | 10,000 | | ,242 | |  | |  |
|  | Untergrenze | 2,424 | | 5,000 | | ,485 | |  | |  |
| wh\_q | Sphärizität angenommen | ,045 | | 1 | | ,045 | | ,513 | | ,506 |
|  | Greenhouse-Geisser | ,045 | | 1,000 | | ,045 | | ,513 | | ,506 |
|  | Huynh-Feldt | ,045 | | 1,000 | | ,045 | | ,513 | | ,506 |
|  | Untergrenze | ,045 | | 1,000 | | ,045 | | ,513 | | ,506 |
| Fehler(wh\_q) | Sphärizität angenommen | ,440 | | 5 | | ,088 | |  | |  |
|  | Greenhouse-Geisser | ,440 | | 5,000 | | ,088 | |  | |  |
|  | Huynh-Feldt | ,440 | | 5,000 | | ,088 | |  | |  |
|  | Untergrenze | ,440 | | 5,000 | | ,088 | |  | |  |
| pp \* pplace | Sphärizität angenommen | 2,828 | | 4 | | ,707 | | 4,605 | | ,008 |
|  | Greenhouse-Geisser | 2,828 | | 2,490 | | 1,136 | | 4,605 | | ,026 |
|  | Huynh-Feldt | 2,828 | | 4,000 | | ,707 | | 4,605 | | ,008 |
|  | Untergrenze | 2,828 | | 1,000 | | 2,828 | | 4,605 | | ,085 |
| Fehler(pp\*pplace) | Sphärizität angenommen | 3,071 | | 20 | | ,154 | |  | |  |
|  | Greenhouse-Geisser | 3,071 | | 12,452 | | ,247 | |  | |  |
|  | Huynh-Feldt | 3,071 | | 20,000 | | ,154 | |  | |  |
|  | Untergrenze | 3,071 | | 5,000 | | ,614 | |  | |  |
| pp \* wh\_q | Sphärizität angenommen | ,143 | | 2 | | ,071 | | ,387 | | ,689 |
|  | Greenhouse-Geisser | ,143 | | 1,277 | | ,112 | | ,387 | | ,606 |
|  | Huynh-Feldt | ,143 | | 1,521 | | ,094 | | ,387 | | ,638 |
|  | Untergrenze | ,143 | | 1,000 | | ,143 | | ,387 | | ,561 |
| Fehler(pp\*wh\_q) | Sphärizität angenommen | 1,845 | | 10 | | ,184 | |  | |  |
|  | Greenhouse-Geisser | 1,845 | | 6,386 | | ,289 | |  | |  |
|  | Huynh-Feldt | 1,845 | | 7,607 | | ,243 | |  | |  |
|  | Untergrenze | 1,845 | | 5,000 | | ,369 | |  | |  |
| pplace \* wh\_q | Sphärizität angenommen | ,255 | | 2 | | ,128 | | 1,389 | | ,294 |
|  | Greenhouse-Geisser | ,255 | | 1,621 | | ,158 | | 1,389 | | ,295 |
|  | Huynh-Feldt | ,255 | | 2,000 | | ,128 | | 1,389 | | ,294 |
|  | Untergrenze | ,255 | | 1,000 | | ,255 | | 1,389 | | ,292 |
| Fehler(pplace\*wh\_q) | Sphärizität angenommen | ,919 | | 10 | | ,092 | |  | |  |
|  | Greenhouse-Geisser | ,919 | | 8,106 | | ,113 | |  | |  |
|  | Huynh-Feldt | ,919 | | 10,000 | | ,092 | |  | |  |
|  | Untergrenze | ,919 | | 5,000 | | ,184 | |  | |  |
| pp \* pplace \* wh\_q | Sphärizität angenommen | ,838 | | 4 | | ,210 | | ,837 | | ,518 |
|  | Greenhouse-Geisser | ,838 | | 1,841 | | ,455 | | ,837 | | ,454 |
|  | Huynh-Feldt | ,838 | | 2,863 | | ,293 | | ,837 | | ,491 |
|  | Untergrenze | ,838 | | 1,000 | | ,838 | | ,837 | | ,402 |
| Fehler(pp\*pplace\*wh\_q) | Sphärizität angenommen | 5,009 | | 20 | | ,250 | |  | |  |
|  | Greenhouse-Geisser | 5,009 | | 9,203 | | ,544 | |  | |  |
|  | Huynh-Feldt | 5,009 | | 14,313 | | ,350 | |  | |  |
|  | Untergrenze | 5,009 | | 5,000 | | 1,002 | |  | |  |

A.5.3.3 SPSS results of Kenyan English speakers

**BY-SUBJECT**

**Tests der Zwischensubjekteffekte**

Maß: MASS\_1

Transformierte Variable: Mittel

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Quelle | Quadratsumme vom Typ III | df | Mittel der Quadrate | F | Signifikanz |
| Konstanter Term | ,542 | 1 | ,542 | ,346 | ,562 |
| Age | ,478 | 1 | ,478 | ,305 | ,586 |
| Sex | 1,779 | 1 | 1,779 | 1,135 | ,297 |
| Fehler | 37,630 | 24 | 1,568 |  |  |

**Mauchly-Test auf Sphärizität(b)**

Maß: MASS\_1

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Innersubjekteffekt | Mauchly-W | Approximiertes Chi-Quadrat | df | Signifikanz | Epsilon(a) | | |
| Greenhouse-Geisser | Huynh-Feldt | Untergrenze |
| pp | ,949 | 1,480 | 2 | ,477 | ,951 | 1,000 | ,500 |
| pplace | ,851 | 4,527 | 2 | ,104 | ,870 | ,921 | ,500 |
| wh\_q | 1,000 | ,000 | 0 | . | 1,000 | 1,000 | 1,000 |
| pp \* pplace | ,824 | 5,324 | 9 | ,806 | ,912 | 1,000 | ,250 |
| pp \* wh\_q | ,652 | 11,989 | 2 | ,002 | ,742 | ,772 | ,500 |
| pplace \* wh\_q | ,974 | ,736 | 2 | ,692 | ,975 | 1,000 | ,500 |
| pp\*pplace\*wh\_q | ,691 | 10,145 | 9 | ,340 | ,860 | ,990 | ,250 |

Prüft die Nullhypothese, daß sich die Fehlerkovarianz-Matrix der orthonormalisierten transformierten abhängigen Variablen proportional zur Einheitsmatrix verhält.

a Kann zum Korrigieren der Freiheitsgrade für die gemittelten Signifikanztests verwendet werden. In der Tabelle mit den Tests der Effekte innerhalb der Subjekte werden korrigierte Tests angezeigt.

b Design: Intercept

Innersubjekt-Design: pp+pplace+rel+pp\*pplace+pp\*rel+pplace\*rel+pp\*pplace\*rel

**Tests der Innersubjekteffekte**

Maß: MASS\_1

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Quelle |  | Quadratsumme vom Typ III | df | Mittel der Quadrate | F | Signifikanz |
| pp | Sphärizität angenommen | 5,125 | 2 | 2,563 | 2,964 | ,059 |
|  | Greenhouse-Geisser | 5,125 | 1,902 | 2,694 | 2,964 | ,062 |
|  | Huynh-Feldt | 5,125 | 2,000 | 2,563 | 2,964 | ,059 |
|  | Untergrenze | 5,125 | 1,000 | 5,125 | 2,964 | ,096 |
| Fehler(pp) | Sphärizität angenommen | 50,136 | 58 | ,864 |  |  |
|  | Greenhouse-Geisser | 50,136 | 55,161 | ,909 |  |  |
|  | Huynh-Feldt | 50,136 | 58,000 | ,864 |  |  |
|  | Untergrenze | 50,136 | 29,000 | 1,729 |  |  |
| pplace | Sphärizität angenommen | 46,574 | 2 | 23,287 | 33,290 | ,000 |
|  | Greenhouse-Geisser | 46,574 | 1,740 | 26,763 | 33,290 | ,000 |
|  | Huynh-Feldt | 46,574 | 1,842 | 25,288 | 33,290 | ,000 |
|  | Untergrenze | 46,574 | 1,000 | 46,574 | 33,290 | ,000 |
| Fehler(pplace) | Sphärizität angenommen | 40,573 | 58 | ,700 |  |  |
|  | Greenhouse-Geisser | 40,573 | 50,466 | ,804 |  |  |
|  | Huynh-Feldt | 40,573 | 53,411 | ,760 |  |  |
|  | Untergrenze | 40,573 | 29,000 | 1,399 |  |  |
| wh\_q | Sphärizität angenommen | ,061 | 1 | ,061 | ,058 | ,812 |
|  | Greenhouse-Geisser | ,061 | 1,000 | ,061 | ,058 | ,812 |
|  | Huynh-Feldt | ,061 | 1,000 | ,061 | ,058 | ,812 |
|  | Untergrenze | ,061 | 1,000 | ,061 | ,058 | ,812 |
| Fehler(wh\_q) | Sphärizität angenommen | 30,849 | 29 | 1,064 |  |  |
|  | Greenhouse-Geisser | 30,849 | 29,000 | 1,064 |  |  |
|  | Huynh-Feldt | 30,849 | 29,000 | 1,064 |  |  |
|  | Untergrenze | 30,849 | 29,000 | 1,064 |  |  |
| pp \* pplace | Sphärizität angenommen | 20,537 | 4 | 5,134 | 8,275 | ,000 |
|  | Greenhouse-Geisser | 20,537 | 3,648 | 5,629 | 8,275 | ,000 |
|  | Huynh-Feldt | 20,537 | 4,000 | 5,134 | 8,275 | ,000 |
|  | Untergrenze | 20,537 | 1,000 | 20,537 | 8,275 | ,007 |
| Fehler(pp\*pplace) | Sphärizität angenommen | 71,970 | 116 | ,620 |  |  |
|  | Greenhouse-Geisser | 71,970 | 105,804 | ,680 |  |  |
|  | Huynh-Feldt | 71,970 | 116,000 | ,620 |  |  |
|  | Untergrenze | 71,970 | 29,000 | 2,482 |  |  |
| pp \* wh\_q | Sphärizität angenommen | 3,990 | 2 | 1,995 | 3,572 | ,034 |
|  | Greenhouse-Geisser | 3,990 | 1,483 | 2,690 | 3,572 | ,049 |
|  | Huynh-Feldt | 3,990 | 1,545 | 2,584 | 3,572 | ,047 |
|  | Untergrenze | 3,990 | 1,000 | 3,990 | 3,572 | ,069 |
| Fehler(pp\* wh\_q) | Sphärizität angenommen | 32,397 | 58 | ,559 |  |  |
|  | Greenhouse-Geisser | 32,397 | 43,017 | ,753 |  |  |
|  | Huynh-Feldt | 32,397 | 44,792 | ,723 |  |  |
|  | Untergrenze | 32,397 | 29,000 | 1,117 |  |  |
| pplace \* wh\_q | Sphärizität angenommen | ,243 | 2 | ,122 | ,205 | ,815 |
|  | Greenhouse-Geisser | ,243 | 1,949 | ,125 | ,205 | ,809 |
|  | Huynh-Feldt | ,243 | 2,000 | ,122 | ,205 | ,815 |
|  | Untergrenze | ,243 | 1,000 | ,243 | ,205 | ,654 |
| Fehler  (pplace\* wh\_q) | Sphärizität angenommen | 34,352 | 58 | ,592 |  |  |
|  | Greenhouse-Geisser | 34,352 | 56,533 | ,608 |  |  |
|  | Huynh-Feldt | 34,352 | 58,000 | ,592 |  |  |
|  | Untergrenze | 34,352 | 29,000 | 1,185 |  |  |
| pp \* pplace \* wh\_q | Sphärizität angenommen | 2,443 | 4 | ,611 | 1,086 | ,367 |
|  | Greenhouse-Geisser | 2,443 | 3,440 | ,710 | 1,086 | ,363 |
|  | Huynh-Feldt | 2,443 | 3,959 | ,617 | 1,086 | ,367 |
|  | Untergrenze | 2,443 | 1,000 | 2,443 | 1,086 | ,306 |
| Fehler  (pp\*pplace\* wh\_q) | Sphärizität angenommen | 65,223 | 116 | ,562 |  |  |
|  | Greenhouse-Geisser | 65,223 | 99,763 | ,654 |  |  |
|  | Huynh-Feldt | 65,223 | 114,824 | ,568 |  |  |
|  | Untergrenze | 65,223 | 29,000 | 2,249 |  |  |

**BY-ITEM**

**Mauchly-Test auf Sphärizität(b)**

Maß: MASS\_1

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Innersubjekteffekt | Mauchly-W | Approximiertes Chi-Quadrat | df | Signifikanz | Epsilon(a) | | |
| Greenhouse-Geisser | Huynh-Feldt | Untergrenze |
| pp | ,651 | 1,716 | 2 | ,424 | ,741 | ,980 | ,500 |
| pplace | ,634 | 1,824 | 2 | ,402 | ,732 | ,959 | ,500 |
| wh\_q | 1,000 | ,000 | 0 | . | 1,000 | 1,000 | 1,000 |
| pp \* pplace | ,044 | 10,710 | 9 | ,350 | ,470 | ,744 | ,250 |
| pp \* wh\_q | ,591 | 2,107 | 2 | ,349 | ,710 | ,910 | ,500 |
| pplace \* wh\_q | ,464 | 3,071 | 2 | ,215 | ,651 | ,786 | ,500 |
| pp\*pplace\* wh\_q | ,377 | 3,332 | 9 | ,957 | ,729 | 1,000 | ,250 |

Prüft die Nullhypothese, daß sich die Fehlerkovarianz-Matrix der orthonormalisierten transformierten abhängigen Variablen proportional zur Einheitsmatrix verhält.

a Kann zum Korrigieren der Freiheitsgrade für die gemittelten Signifikanztests verwendet werden. In der Tabelle mit den Tests der Effekte innerhalb der Subjekte werden korrigierte Tests angezeigt.

b Design: Intercept

Innersubjekt-Design: pp+pplace+rel+pp\*pplace+pp\*rel+pplace\*rel+pp\*pplace\*rel

**Tests der Innersubjekteffekte**

Maß: MASS\_1

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Quelle |  | Quadratsumme vom Typ III | df | Mittel der Quadrate | F | Signifikanz | |
| pp | Sphärizität angenommen | 1,025 | 2 | ,513 | 4,267 | ,046 |
|  | Greenhouse-Geisser | 1,025 | 1,483 | ,691 | 4,267 | ,066 |
|  | Huynh-Feldt | 1,025 | 1,961 | ,523 | 4,267 | ,047 |
|  | Untergrenze | 1,025 | 1,000 | 1,025 | 4,267 | ,094 |
| Fehler(pp) | Sphärizität angenommen | 1,201 | 10 | ,120 |  |  |
|  | Greenhouse-Geisser | 1,201 | 7,414 | ,162 |  |  |
|  | Huynh-Feldt | 1,201 | 9,805 | ,123 |  |  |
|  | Untergrenze | 1,201 | 5,000 | ,240 |  |  |
| pplace | Sphärizität angenommen | 9,315 | 2 | 4,657 | 46,053 | ,000 |
|  | Greenhouse-Geisser | 9,315 | 1,464 | 6,363 | 46,053 | ,000 |
|  | Huynh-Feldt | 9,315 | 1,918 | 4,855 | 46,053 | ,000 |
|  | Untergrenze | 9,315 | 1,000 | 9,315 | 46,053 | ,001 |
| Fehler(pplace) | Sphärizität angenommen | 1,011 | 10 | ,101 |  |  |
|  | Greenhouse-Geisser | 1,011 | 7,320 | ,138 |  |  |
|  | Huynh-Feldt | 1,011 | 9,592 | ,105 |  |  |
|  | Untergrenze | 1,011 | 5,000 | ,202 |  |  |
| wh\_q | Sphärizität angenommen | ,012 | 1 | ,012 | ,070 | ,802 |
|  | Greenhouse-Geisser | ,012 | 1,000 | ,012 | ,070 | ,802 |
|  | Huynh-Feldt | ,012 | 1,000 | ,012 | ,070 | ,802 |
|  | Untergrenze | ,012 | 1,000 | ,012 | ,070 | ,802 |
| Fehler(wh\_q) | Sphärizität angenommen | ,871 | 5 | ,174 |  |  |
|  | Greenhouse-Geisser | ,871 | 5,000 | ,174 |  |  |
|  | Huynh-Feldt | ,871 | 5,000 | ,174 |  |  |
|  | Untergrenze | ,871 | 5,000 | ,174 |  |  |
| pp \* pplace | Sphärizität angenommen | 4,107 | 4 | 1,027 | 5,665 | ,003 |
|  | Greenhouse-Geisser | 4,107 | 1,880 | 2,185 | 5,665 | ,026 |
|  | Huynh-Feldt | 4,107 | 2,974 | 1,381 | 5,665 | ,009 |
|  | Untergrenze | 4,107 | 1,000 | 4,107 | 5,665 | ,063 |
| Fehler(pp\*pplace) | Sphärizität angenommen | 3,625 | 20 | ,181 |  |  |
|  | Greenhouse-Geisser | 3,625 | 9,400 | ,386 |  |  |
|  | Huynh-Feldt | 3,625 | 14,871 | ,244 |  |  |
|  | Untergrenze | 3,625 | 5,000 | ,725 |  |  |
| pp \* wh\_q | Sphärizität angenommen | ,798 | 2 | ,399 | 5,416 | ,025 |
|  | Greenhouse-Geisser | ,798 | 1,419 | ,562 | 5,416 | ,045 |
|  | Huynh-Feldt | ,798 | 1,819 | ,439 | 5,416 | ,030 |
|  | Untergrenze | ,798 | 1,000 | ,798 | 5,416 | ,067 |
| Fehler(pp\*wh\_q) | Sphärizität angenommen | ,737 | 10 | ,074 |  |  |
|  | Greenhouse-Geisser | ,737 | 7,095 | ,104 |  |  |
|  | Huynh-Feldt | ,737 | 9,095 | ,081 |  |  |
|  | Untergrenze | ,737 | 5,000 | ,147 |  |  |
| pplace \* wh\_q | Sphärizität angenommen | ,049 | 2 | ,024 | ,207 | ,816 |
|  | Greenhouse-Geisser | ,049 | 1,302 | ,037 | ,207 | ,726 |
|  | Huynh-Feldt | ,049 | 1,572 | ,031 | ,207 | ,767 |
|  | Untergrenze | ,049 | 1,000 | ,049 | ,207 | ,668 |
| Fehler(pplace\* wh\_q) | Sphärizität angenommen | 1,173 | 10 | ,117 |  |  |
|  | Greenhouse-Geisser | 1,173 | 6,511 | ,180 |  |  |
|  | Huynh-Feldt | 1,173 | 7,860 | ,149 |  |  |
|  | Untergrenze | 1,173 | 5,000 | ,235 |  |  |
| pp \* pplace \* wh\_q | Sphärizität angenommen | ,489 | 4 | ,122 | ,644 | ,638 |
|  | Greenhouse-Geisser | ,489 | 2,915 | ,168 | ,644 | ,595 |
|  | Huynh-Feldt | ,489 | 4,000 | ,122 | ,644 | ,638 |
|  | Untergrenze | ,489 | 1,000 | ,489 | ,644 | ,459 |
| Fehler  (pp\*pplace\*wh\_q) | Sphärizität angenommen | 3,795 | 20 | ,190 |  |  |
|  | Greenhouse-Geisser | 3,795 | 14,573 | ,260 |  |  |
|  | Huynh-Feldt | 3,795 | 20,000 | ,190 |  |  |
|  | Untergrenze | 3,795 | 5,000 | ,759 |  |  |