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ENKELVOUDIGE KORRELASIES TUSSEN DIE AFHANKLIKE VERANDERLIKES-EN DIE ONAFHANKLIKE VERANDERLIKES (N TUSSEN HAKIES)

ONAFHANKLIKE VERANDERLIKES	Standerd 10- totaal	Afri- kaans	Engels	Moeder- taal	Geskie- denis	Biologie
AAT1	0,222 ** (833)	0,202 ** (830)	0,279 ** (381)	0,111 ** (828)	0,110 * (464)	0,082 * (733)
AAT2	0,363 ** (833)	0,370 ** (830)	0,435 ** (831)	0,175 ** (828)	0,209 ** (464)	0,180 ** (733)
AAT3	0,387 ** (833)	0,409 ** (830)	0,531 ** (831)	0,185 ** (828)	0,252 ** (464)	0,248 ** (733)
AAT4	0,462 ** (833)	0,397 ** (830)	0,516 ** (831)	0,180 ** (828)	0,146 ** (464)	0,221 ** (733)
AAT5	0,359 ** (833)	0,302 ** (830)	0,355 ** (831)	0,206 ** (828)	0,071 (464)	0,149 (733)
AAT6	0,283 ** (833)	0,478 ** (830)	0,460 ** (831)	0,120 ** (828)	0,020 (464)	0,047 (733)
AAT7	0,330 ** (832)	0,463 ** (829)	0,498 ** (830)	0,226 ** (828)	-0,040 (463)	0,117 ** (732)
AAT8	0,180 ** (832)	0,203 ** (829)	0,198 ** (830)	0,065 (828)	0,047 (463)	0,099 ** (732)
AAT9	0,081 * (832)	0,144 ** (829)	0,190 ** (830)	0,079 * (828)	-0,016 (463)	-0,050 (732)
BBV1	-0,023 (817)	0,016 (814)	-0,026 (815)	0,005 (813)	0,007 (454)	-0,059 (719)
BBV2	-0,065 (820)	-0,093 ** (817)	-0,140 ** (818)	0,019 (816)	-0,023 (458)	-0,005 (723)

Opmerkings

1. In bylaag C word die afkortings wat vir die onafhanklike veranderlikes gebruik word, verklaar.
2. ** $p < 0,01$
3. * $p < 0,05$

BYLAAG A (vervolg)

ONAFHANKLIKE
VERANDERLIKES

AFHANKLIKE VERANDERLIKES

	Standaard 10- totaal	Afri- kaans	Engels	Moeder- taal	Geskie- denis	Biologie
BBV3	-0,051 (816)	-0,044 (813)	-0,104 ** (814)	0,017 (812)	0,007 (454)	0,058 (718)
BBV4	0,045 (813)	0,029 (810)	-0,012 (811)	0,101 ** (809)	-0,042 (452)	0,069 (716)
BBV5	-0,065 (816)	-0,010 (813)	-0,083 * (814)	0,002 (812)	-0,025 (454)	-0,090 (718)
BBV6	0,023 (812)	0,013 (809)	-0,004 (810)	0,050 (808)	-0,012 (454)	-0,055 (716)
BBV7	-0,062 (815)	-0,040 (812)	-0,038 (813)	-0,031 (811)	-0,029 (453)	-0,016 (717)
BBV8	-0,033 (815)	-0,011 (812)	-0,009 (813)	-0,033 (811)	-0,030 (454)	-0,041 (717)
BBV9	-0,016 (815)	-0,029 (812)	-0,095 ** (813)	0,001 (811)	0,001 (456)	-0,029 (718)
BBV10	-0,056 (814)	-0,031 (811)	-0,055 (812)	-0,000 (810)	-0,027 (454)	-0,011 (717)
HSPVA	-0,017 (830)	-0,044 (827)	-0,024 (828)	-0,015 (826)	-0,007 (463)	0,016 (730)
HSPVB	0,237 ** (828)	0,199 ** (825)	0,263 ** (826)	0,142 ** (824)	0,087 (463)	0,086 (730)
HSPVC	0,004 (830)	-0,040 (827)	-0,041 (828)	0,008 (826)	0,054 (463)	0,008 (730)
HSPVD	-0,027 (830)	-0,097 ** (827)	-0,083 * (828)	-0,058 (826)	0,091 (463)	0,016 (730)
HSPVE	-0,108 * (829)	-0,047 (826)	-0,042 (827)	-0,065 (825)	-0,069 (463)	-0,125 ** (729)
HSPVF	-0,074 * (829)	-0,116 ** (826)	-0,126 ** (827)	-0,077 * (825)	0,037 (463)	-0,015 (730)

BYLAAG A (vervolg)

ONAFHANKLIKE
VERANDERLIKES

AFHANKLIKE VERANDERLIKES

	Standaard 10- totaal	Afri- kaans	Engels	Moeder- taal	Geskie- denis	Biologie
HSPVG	0,137 ** (828)	0,146 ** (825)	0,129 ** (826)	0,064 (824)	0,132 ** (462)	0,119 ** (728)
HSPVH	0,040 (827)	0,040 (824)	0,036 (825)	0,023 (823)	0,027 (462)	0,062 (728)
HSPVI	-0,002 (828)	0,031 (825)	0,029 (826)	0,020 (824)	0,012 (461)	0,069 (728)
HSPVJ	-0,109 ** (828)	0,062 (825)	-0,097 ** (826)	-0,045 (824)	0,035 (463)	-0,112 ** (729)
HSPVO	0,077 * (829)	0,068 (826)	0,062 (827)	-0,005 (825)	0,030 (463)	0,037 (729)
HSPVQ2	-0,016 (829)	-0,052 (824)	-0,076 * (825)	0,011 (823)	-0,069 (461)	-0,040 (727)
HSPVQ3	0,009 (822)	-0,023 (819)	-0,048 (820)	0,070 * (818)	-0,008 (458)	0,028 (723)
HSPVQ4	0,129 ** (830)	0,098 ** (827)	0,093 ** (828)	0,050 (826)	0,034 (463)	0,113 ** (730)
Geslag	-0,036 (833)	-0,018 (830)	-0,096 ** (831)	0,099 ** (828)	-0,112 * (464)	0,034 (733)
Standaard 8- totaal	0,538 ** (833)	0,450 ** (830)	0,485 ** (831)	0,346 ** (828)	0,235 ** (464)	0,368 ** (733)
Woonarea	-0,198 ** (833)	-0,128 ** (830)	-0,136 ** (831)	0,041 (828)	-0,222 ** (464)	-0,211 ** (733)
Taalgroep 1	-0,226 ** (833)	-0,064 (830)	-0,139 ** (831)	0,023 (828)	-0,369 ** (464)	-0,322 ** (733)
Taalgroep 2	0,240 ** (833)	-0,062 (830)	0,010 (831)	-0,012 (828)	0,345 ** (464)	0,402 ** (733)

BYLAAG B

ENKELVOUDIGE KORRELASIEMATRIKS VAN AL DIE ONAFHANKLIKE VERANDERLIKES

	AAT1	AAT2	AAT3	AAT4	AAT5	AAT6	AAT7	AAT8	AAT9	BBV1	BBV2	BBV3	BBV4
AAT1	1,000 (871)	0,557** (871)	0,254** (871)	0,305** (871)	0,468** (871)	0,201** (871)	0,293** (870)	0,511** (870)	0,402** (870)	0,071** (854)	-0,117** (858)	-0,133** (853)	0,095** (850)
AAT2	0,557** (871)	1,000 (871)	0,450** (871)	0,491** (871)	0,503** (871)	0,342** (871)	0,422** (870)	0,411** (870)	0,358** (870)	0,043 (854)	-0,156** (858)	-0,151** (853)	0,067* (850)
AAT3	0,254** (871)	0,450** (871)	1,000 (871)	0,569** (871)	0,332** (871)	0,481** (871)	0,458** (870)	0,215** (870)	0,182** (870)	0,037** (854)	-0,105** (858)	-0,081* (853)	0,016 (850)
AAT4	0,305** (871)	0,491** (871)	0,569** (871)	1,000 (871)	0,322** (871)	0,477** (871)	0,498** (870)	0,255** (870)	0,224** (870)	0,042 (854)	-0,134** (858)	-0,064 (853)	0,055 (850)
AAT5	0,468** (871)	0,503** (871)	0,332** (871)	0,322** (871)	1,000 (871)	0,344** (871)	0,380** (870)	0,301** (870)	0,240** (870)	0,064 (854)	-0,184** (858)	-0,120* (853)	0,140** (850)
AAT6	0,201** (871)	0,342** (871)	0,481** (871)	0,477** (871)	0,344** (871)	1,000 (871)	0,608** (870)	0,218** (870)	0,212** (870)	0,049 (854)	-0,084* (858)	-0,072* (853)	0,077* (850)
AAT7	0,293** (870)	0,422** (870)	0,458** (870)	0,498** (870)	0,380** (870)	0,608** (870)	1,000 (870)	0,224** (870)	0,230** (870)	0,003 (854)	-0,126** (858)	-0,060 (853)	0,084* (850)
AAT8	0,511** (870)	0,411** (870)	0,215** (870)	0,255** (870)	0,301** (870)	0,218** (870)	0,224** (870)	1,000 (870)	0,485** (870)	0,117** (854)	-0,032 (858)	-0,103** (853)	0,107** (850)
AAT9	0,402** (870)	0,358** (870)	0,182** (870)	0,224** (870)	0,240** (870)	0,212** (870)	0,230** (870)	0,485** (870)	1,000 (870)	0,093** (854)	-0,085* (858)	-0,162** (853)	-0,014 (850)
BBV1	0,071* (85)	0,043 (854)	0,037 (854)	0,042 (854)	0,064 (854)	0,049 (854)	0,003 (854)	0,117** (854)	0,093** (854)	1,000 (854)	0,392** (850)	0,146** (849)	0,401** (846)
BBV2	-0,117** (858)	-0,156** (858)	-0,105** (858)	-0,134** (858)	-0,184** (858)	-0,084* (858)	-0,126** (858)	-0,022 (858)	-0,085* (858)	0,392** (850)	1,000 (858)	0,329** (849)	0,396** (846)
BBV3	-0,133** (853)	-0,151** (853)	-0,081* (853)	-0,063 (853)	-0,120** (853)	-0,072* (853)	-0,060 (853)	-0,107** (853)	-0,162** (853)	0,146** (849)	0,329** (849)	1,000 (853)	0,466** (845)
BBV4	0,095** (850)	0,067 (850)	0,016 (850)	0,055 (850)	0,140** (850)	0,077* (850)	0,084* (850)	0,107** (850)	-0,014 (850)	0,401** (846)	0,396** (846)	0,466** (845)	1,000 (850)
BBV5	-0,124** (853)	-0,088** (853)	-0,083* (853)	-0,038 (853)	-0,169** (853)	-0,006 (853)	-0,059 (853)	-0,083* (853)	-0,095** (853)	0,256** (851)	0,179** (850)	0,304** (850)	0,104** (846)
BBV6	0,004 (849)	-0,010 (849)	-0,059 (849)	-0,018 (849)	0,029 (849)	0,031 (849)	0,024 (849)	0,011 (849)	0,013 (849)	0,328** (846)	0,166** (846)	0,163** (846)	0,147** (842)
BBV7	-0,108* (852)	-0,130** (852)	-0,060 (852)	-0,056 (852)	-0,137** (852)	-0,036 (852)	-0,081* (852)	-0,091** (852)	-0,070* (852)	0,083* (848)	0,208** (848)	0,309** (845)	0,167** (842)
BBV8	-0,039 (852)	-0,079* (852)	0,066 (852)	0,048 (852)	-0,105** (852)	0,024 (852)	-0,020 (852)	0,090** (852)	-0,006 (852)	0,461** (847)	0,432** (849)	0,359** (848)	0,341** (843)
BBV9	-0,137** (851)	-0,095** (851)	-0,089** (851)	-0,078* (851)	-0,107** (851)	-0,047 (851)	-0,072* (851)	-0,051 (851)	-0,038 (851)	0,326** (847)	0,366** (848)	0,269** (847)	0,101** (843)
BBV10	-0,139** (851)	-0,108** (851)	0,033 (851)	-0,005 (851)	-0,158** (851)	0,032 (851)	-0,005 (851)	-0,067 (851)	0,040 (851)	0,107** (848)	0,293** (847)	0,500** (848)	0,330** (844)

BYLAAG B (vervolg)

	AAT1	AAT2	AAT3	AAT4	AAT5	AAT6	AAT7	AAT8	AAT9	BEV1	BBV2	BBV3	BBV4
HSPVA	0,041 (868)	-0,035 (868)	-0,066 (868)	-0,019 (868)	-0,045 (868)	-0,033 (868)	-0,016 (868)	-0,016 (868)	-0,034 (868)	-0,043 (852)	0,048 (856)	0,137** (851)	0,040 (848)
HSPVB	0,219** (866)	0,304** (866)	0,249** (866)	0,311** (866)	0,252** (866)	0,229** (866)	0,253** (866)	0,176** (866)	0,164** (866)	0,009 (852)	-0,110** (856)	-0,046 (851)	0,057 (847)
HSPVC	0,005 (868)	-0,008 (868)	-0,001 (868)	-0,015 (868)	-0,005 (868)	-0,066 (868)	-0,073* (868)	0,024 (868)	0,015 (868)	0,092** (852)	0,065 (856)	-0,036 (851)	0,030 (848)
HSPVD	-0,090** (868)	-0,106** (868)	-0,146** (868)	-0,159** (868)	-0,113** (868)	-0,136** (868)	-0,138** (868)	-0,124** (868)	-0,113** (868)	0,001 (852)	-0,021 (856)	-0,015 (851)	-0,090** (848)
HSPVE	-0,027 (866)	-0,056 (866)	-0,013 (866)	-0,059 (866)	0,002 (866)	0,010 (866)	0,022 (866)	-0,063 (866)	-0,034 (866)	-0,044 (850)	-0,054 (854)	-0,033 (849)	-0,036 (846)
HSPVF	-0,057 (867)	-0,099** (867)	-0,052 (867)	-0,051 (867)	-0,108** (867)	-0,094** (867)	-0,120** (867)	-0,038 (867)	-0,075* (867)	-0,009 (852)	0,027 (856)	-0,004 (851)	-0,070* (848)
HSPVG	0,018 (866)	0,061 (866)	0,175** (866)	0,201** (866)	0,020 (866)	0,116** (866)	0,087* (866)	0,075* (866)	0,040 (866)	0,012 (851)	0,029 (855)	0,034 (850)	0,049 (847)
HSPVH	0,034 (865)	0,040 (865)	0,097** (865)	0,088** (865)	0,027 (865)	0,068* (865)	0,066* (865)	0,014 (865)	0,039 (865)	0,005 (851)	0,054 (855)	0,038 (850)	0,118** (847)
HSPVI	-0,063 (866)	-0,066 (866)	-0,045 (866)	0,019 (866)	-0,120** (866)	-0,017 (866)	0,035 (866)	-0,129** (866)	-0,061 (866)	-0,192** (851)	0,012 (855)	0,184** (850)	-0,022 (847)
HSPVJ	-0,060 (866)	-0,059 (866)	-0,071* (866)	-0,133** (866)	-0,055 (866)	-0,075* (866)	-0,095** (866)	-0,048 (866)	0,006 (866)	0,033 (851)	0,018 (855)	-0,037 (850)	0,0363 (847)
HSPVO	0,046 (867)	0,069* (867)	-0,016 (867)	0,008 (867)	0,050 (867)	-0,017 (867)	0,040 (867)	0,068* (867)	-0,055 (867)	-0,037 (852)	-0,040 (855)	0,015 (851)	-0,042 (848)
HSPVQ2	-0,047 (865)	-0,048 (865)	0,005 (865)	-0,033 (865)	0,029 (865)	-0,020 (865)	-0,058 (865)	-0,017 (865)	0,019 (865)	0,141** (850)	0,060 (854)	0,016 (849)	0,077* (846)
HSPVQ3	-0,063 (859)	-0,010 (859)	0,038 (859)	0,020 (859)	0,030 (859)	0,039 (859)	0,022 (859)	-0,042 (859)	-0,008 (859)	0,037 (848)	0,077* (850)	0,108** (847)	0,178** (844)
HSPVQ4	0,016 (868)	0,056 (868)	0,090** (868)	0,054 (868)	0,088** (868)	0,042 (868)	0,081* (868)	0,004 (868)	-0,047 (868)	-0,073* (852)	-0,102** (856)	-0,004 (851)	-0,018 (848)
GESLAG	-0,169** (871)	-0,172** (871)	-0,246** (871)	-0,136** (871)	-0,112** (871)	-0,133** (871)	-0,022 (870)	-0,237** (870)	-0,282** (870)	-0,308** (854)	-0,105** (858)	0,271** (853)	-0,010 (850)
WOON- AREA	-0,090** (871)	-0,102** (871)	-0,125** (871)	-0,181** (871)	-0,175** (871)	-0,032 (871)	-0,125** (870)	-0,058 (870)	-0,013 (870)	0,092** (854)	0,150** (858)	-0,117** (853)	-0,052 (850)
TAAL- GROEP 1	-0,038 (871)	-0,087* (871)	-0,142** (871)	-0,137** (871)	-0,042 (871)	0,027 (871)	0,008 (870)	-0,012 (870)	0,079* (870)	0,076* (854)	0,052 (858)	-0,117** (853)	-0,082 (850)
TAAL- GROEP 2	-0,043 (871)	0,001 (871)	0,040 (871)	-0,026 (871)	-0,014 (871)	-0,188** (871)	-0,169** (870)	-0,079* (870)	-0,175** (870)	-0,115** (854)	-0,013 (858)	0,097** (853)	0,036 (850)
GEMST8	0,260** (871)	0,424** (871)	0,467** (871)	0,392** (871)	0,466** (871)	0,406** (871)	0,409** (870)	0,129** (870)	0,146** (870)	0,002 (853)	-0,060 (849)	-0,082* (852)	0,115** (852)

BYLAAG B (vervolg)

	BBV5	BBV6	BBV7	BBV8	BBV8	BBV10	HSPVA	HSPVB	HSPVC	HSPVD	HSPVE	HSPVF	HSPVG
AAT1	-0,124** (853)	0,004 (849)	-0,108 (852)	-0,039 (852)	-0,137** (851)	-0,139** (851)	0,041 (868)	0,218** (866)	0,005 (868)	-0,090** (868)	-0,027 (866)	-0,057 (867)	0,018 (866)
AAT2	-0,088** (853)	-0,010 (849)	-0,130** (852)	-0,079* (852)	-0,095** (851)	-0,108** (851)	-0,035 (868)	0,304** (866)	-0,008 (868)	-0,106** (868)	-0,056 (866)	-0,099** (867)	0,061 (866)
AAT3	-0,083* (853)	-0,059 (849)	-0,060 (852)	0,066 (852)	-0,089** (851)	0,033 (851)	-0,066 (868)	0,249 (866)	-0,001 (868)	-0,146** (868)	-0,013 (866)	-0,052 (867)	0,175** (866)
AAT4	-0,038 (853)	-0,018 (849)	-0,056 (852)	0,048* (852)	-0,078* (851)	-0,005 (851)	-0,019 (868)	0,311** (866)	-0,015 (868)	-0,159** (868)	-0,059 (866)	-0,051 (867)	0,201** (866)
AAT5	-0,169** (853)	0,029 (849)	-0,137** (852)	-0,105** (852)	-0,107** (851)	-0,158** (851)	-0,045 (868)	0,252** (866)	-0,005 (868)	-0,113** (868)	0,002 (866)	-0,108** (867)	0,020 (866)
AAT6	-0,006 (853)	0,031 (849)	-0,036 (852)	0,024 (852)	-0,047 (851)	0,032 (851)	-0,033 (868)	0,229** (866)	-0,066 (868)	-0,136** (868)	0,010 (866)	-0,094** (867)	0,116** (866)
AAT7	-0,059 (853)	0,024 (849)	-0,081* (852)	-0,020 (852)	-0,072* (851)	-0,005 (851)	-0,016 (868)	0,253** (866)	-0,073* (868)	-0,138** (868)	0,022 (866)	-0,120** (867)	0,087* (866)
AAT8	-0,083* (853)	0,011 (849)	-0,091** (852)	0,090** (852)	-0,051 (851)	-0,067 (851)	-0,016 (868)	0,176** (866)	0,024 (868)	-0,124** (868)	-0,064 (866)	-0,038 (867)	0,075* (866)
AAT9	-0,095** (853)	0,013 (849)	-0,070* (852)	-0,006 (852)	-0,038 (851)	-0,040 (851)	-0,034 (868)	0,164** (866)	0,015 (868)	-0,113** (868)	-0,034 (866)	-0,075* (867)	0,040 (866)
BBV1	0,256** (851)	0,328** (846)	0,083* (848)	0,461** (847)	0,326** (847)	0,107** (848)	-0,043 (852)	0,009 (852)	0,092** (852)	0,001 (852)	-0,044 (850)	-0,009 (852)	0,012 (851)
BBV2	0,179** (850)	0,166** (846)	0,208** (848)	0,432** (849)	0,366** (848)	0,293** (847)	0,048 (856)	-0,110** (856)	0,065 (856)	-0,021 (856)	-0,054 (854)	0,027 (856)	0,029 (855)
BBV3	0,304** (850)	0,163** (846)	0,309** (845)	0,359** (848)	0,269** (847)	0,500** (848)	0,137** (851)	-0,046 (851)	-0,036 (851)	-0,015 (851)	-0,033 (849)	-0,004 (851)	0,034 (850)
BBV4	0,104** (846)	0,147** (842)	0,167** (842)	0,341** (843)	0,101** (843)	0,330** (844)	0,040 (848)	0,057 (847)	0,030 (848)	-0,090** (848)	-0,036 (846)	-0,070* (848)	0,049 (847)
BBV5	1,000 (853)	0,726** (847)	0,186** (847)	0,349** (849)	0,474** (848)	0,394** (849)	0,067 (851)	-0,038 (851)	0,003 (851)	0,017 (851)	-0,003 (849)	0,022 (851)	-0,018 (850)
BBV6	0,726** (847)	1,000 (849)	0,041 (846)	0,266** (847)	0,498** (848)	0,200** (848)	0,012 (847)	-0,023 (847)	0,023 (847)	0,020 (847)	0,010 (845)	-0,026 (847)	-0,062 (846)
BBV7	0,186** (847)	0,041 (846)	1,000 (852)	0,390** (848)	0,158** (846)	0,366** (846)	0,186** (850)	-0,055 (850)	-0,033 (850)	0,017 (850)	-0,012 (848)	0,136** (850)	-0,008 (849)
BBV8	0,349** (849)	0,266** (847)	0,390** (848)	1,000 (852)	0,379** (848)	0,423** (848)	0,104** (850)	-0,039 (850)	0,001 (850)	-0,050 (850)	-0,024 (848)	0,061 (850)	0,054 (849)
BBV9	0,474** (848)	0,499** (848)	0,158** (846)	0,379** (848)	1,000 (851)	0,231** (849)	0,008 (849)	-0,108** (849)	0,034 (849)	0,102** (849)	0,008 (848)	0,035 (849)	-0,033 (848)
BBV10	0,394** (849)	0,200** (848)	0,366** (846)	0,423** (848)	0,231** (849)	1,000 (851)	0,118** (849)	-0,039 (849)	0,028 (849)	-0,051 (849)	-0,026 (847)	0,071* (849)	0,070* (848)

BYLAAG B (vervolg)

	BBV5	BBV6	BBV7	BBV8	BBV9	BBV10	HSPVA	HSPVB	HSPVC	HSPVD	HSPVE	HSPVF	HSPVG
HSPVA	0,067 (851)	0,012 (847)	0,186** (850)	0,104** (850)	0,008 (849)	0,118 (849)	1,000 (868)	-0,056 (866)	0,126** (868)	-0,108** (868)	0,127** (866)	0,253** (867)	0,081* (866)
HSPVB	-0,038 (851)	-0,023 (847)	-0,055 (850)	-0,039 (850)	-0,108** (849)	-0,039 (849)	-0,057 (866)	1,000 (866)	-0,021 (866)	-0,060 (866)	-0,070* (864)	-0,150** (866)	0,061 (864)
HSPVC	0,003 (851)	0,023 (847)	-0,033 (850)	0,001 (850)	0,034 (849)	0,028 (849)	0,126** (868)	-0,02101 (866)	1,000 (868)	-0,208** (868)	-0,001 (866)	0,054 (867)	0,208** (866)
HSPVD	0,017 (851)	0,020 (847)	0,017 (850)	-0,050 (850)	0,102** (849)	-0,051 (849)	-0,108** (868)	-0,060 (866)	-0,208** (868)	1,000 (868)	0,049 (866)	0,017 (867)	-0,168** (866)
HSPVE	-0,003 (849)	0,010 (845)	-0,012 (848)	-0,024 (848)	-0,008 (848)	-0,026 (847)	0,127** (866)	-0,070* (864)	-0,001 (866)	0,049 (866)	1,000 (866)	0,158** (865)	-0,099** (865)
HSPVF	0,022 (851)	-0,026 (847)	0,136** (850)	0,061 (850)	0,035 (849)	0,071* (849)	0,253** (867)	-0,150** (866)	0,054 (867)	0,017 (867)	0,158** (865)	1,000 (867)	0,001 (865)
HSPVG	-0,018 (850)	-0,062 (846)	-0,008 (849)	0,054 (849)	-0,033 (848)	0,070* (848)	0,081* (866)	0,061 (864)	0,208** (866)	-0,168** (866)	-0,099** (865)	0,001 (865)	1,000 (866)
HSPVH	0,005 (850)	-0,023 (846)	0,015 (849)	0,007 (849)	-0,023 (848)	0,141** (848)	0,316** (865)	-0,003 (864)	0,347** (865)	-0,293** (865)	0,028 (864)	0,178** (865)	0,198** (865)
HSPVI	0,102** (850)	-0,008 (846)	0,283** (849)	0,039 (849)	0,020 (848)	0,168** (848)	0,171** (866)	0,027 (864)	-0,103** (866)	0,034 (866)	-0,038 (864)	0,009 (865)	0,046 (865)
HSPVJ	0,036 (850)	0,079* (846)	-0,049 (849)	-0,006 (849)	0,012 (848)	0,043 (848)	-0,187** (866)	-0,057 (865)	-0,079* (866)	0,133** (866)	-0,076* (865)	0,038 (866)	0,053 (865)
HSPVO	-0,007 (851)	-0,006 (847)	0,079* (849)	0,011 (849)	-0,008 (849)	-0,040 (849)	-0,110** (867)	0,016 (865)	-0,371** (867)	0,221** (867)	-0,025 (865)	-0,049 (866)	-0,168** (865)
HSPVQ2	0,006 (849)	0,070* (845)	-0,072* (848)	0,009 (848)	0,033 (847)	-0,006 (847)	-0,201** (865)	-0,079* (863)	-0,043 (865)	0,044 (865)	-0,029 (864)	-0,072* (864)	-0,033 (865)
HSPVQ3	-0,023 (847)	-0,040 (843)	-0,048 (845)	0,037 (845)	-0,034 (846)	0,139** (845)	0,010 (859)	0,026 (858)	0,216** (859)	-0,172** (859)	-0,075* (859)	-0,113** (859)	0,198** (859)
HSPVQ4	-0,059 (851)	-0,077* (847)	0,063 (850)	-0,019 (850)	-0,047 (849)	-0,027 (849)	-0,114** (868)	0,061 (866)	-0,306** (868)	0,230** (868)	-0,027 (866)	-0,013 (867)	-0,099** (866)
GESLAG	-0,007 (853)	-0,089** (849)	0,165** (852)	-0,083* (852)	-0,043 (851)	-0,039 (851)	0,124** (868)	-0,004 (866)	-0,178** (868)	0,055 (868)	-0,012 (866)	-0,034 (867)	-0,023 (866)
WOON- AREA	0,040 (853)	0,012 (849)	-0,051 (852)	-0,081* (852)	0,007 (851)	-0,118** (851)	-0,013 (868)	-0,079* (866)	0,070* (868)	-0,002 (868)	-0,006 (866)	0,078* (867)	-0,064 (866)
TAAL- ROEP1	0,051 (853)	0,085* (849)	-0,156** (852)	-0,088** (852)	0,032 (851)	-0,117** (851)	-0,068* (868)	-0,108** (866)	0,004 (868)	-0,004 (868)	0,073* (866)	-0,024 (867)	-0,108** (866)
TAAL- GROEP2	-0,052 (853)	-0,075* (849)	0,066 (852)	-0,035 (852)	-0,025 (851)	0,021 (851)	0,051 (868)	0,077* (866)	0,031 (868)	0,063 (868)	-0,083* (866)	0,001 (867)	0,063 (866)
GEMST8	-0,122** (853)	-0,007 (849)	-0,084* (852)	-0,075* (852)	-0,051 (851)	-0,058 (851)	-0,023 (868)	0,285** (866)	-0,011 (868)	-0,056 (868)	-0,071* (866)	-0,134** (867)	0,099** (866)

BYLAAG B (vervolg)

	HSPVH	HSPVI	HSPVJ	HSPVO	HSPVQ2	HSPVQ3	HSPVQ4	GESLAG	WOON- AREA	TAAL- GROEP1	TAAL- GROEP2
AAT1	0,034 (865)	-0,063 (866)	-0,060 (866)	0,046 (867)	-0,047 (865)	-0,063 (859)	0,016 (868)	-0,169** (871)	-0,090** (871)	-0,038 (871)	-0,043 (871)
AAT2	0,040 (865)	-0,066 (866)	-0,059 (866)	0,069* (867)	-0,048 (865)	-0,010 (859)	0,056 (868)	-0,172** (871)	-0,102** (871)	-0,087* (871)	0,001 (871)
AAT3	0,097** (865)	-0,045 (866)	-0,071* (866)	-0,016 (867)	0,005 (865)	0,038 (859)	0,090** (868)	-0,246** (871)	-0,125** (871)	-0,142** (871)	0,040 (871)
AAT4	0,088** (865)	0,019 (866)	-0,133** (866)	0,008 (867)	-0,033 (865)	0,020 (859)	0,054 (868)	-0,136** (871)	-0,181** (871)	-0,137** (871)	-0,026 (871)
AAT5	0,027 (865)	-0,121** (866)	-0,055 (866)	0,050 (867)	0,029 (865)	0,030 (859)	0,088** (868)	-0,112** (871)	-0,175** (871)	-0,042 (871)	-0,014 (871)
AAT6	0,068* (865)	-0,017 (866)	-0,075* (866)	-0,017 (867)	-0,020 (865)	0,039 (859)	0,042 (868)	-0,133** (871)	-0,032 (871)	0,027 (871)	-0,188** (871)
AAT7	0,060* (865)	0,035 (866)	-0,095** (866)	0,040 (867)	-0,058 (865)	0,022 (859)	0,081* (868)	-0,022 (870)	-0,125** (870)	0,008 (870)	-0,169** (870)
AAT8	0,015 (865)	-0,129** (866)	-0,048 (866)	0,068* (867)	-0,017 (865)	-0,043 (859)	0,004 (868)	-0,237** (870)	-0,058 (870)	-0,012 (870)	-0,079* (870)
AAT9	0,039 (865)	-0,061 (866)	0,006 (866)	-0,055 (867)	0,019 (865)	-0,008 (859)	-0,047 (868)	-0,282** (870)	-0,013 (870)	0,079* (870)	-0,175** (870)
BBV1	0,005 (851)	-0,192** (851)	0,033 (851)	-0,037 (852)	0,141** (850)	0,037 (848)	-0,073* (852)	-0,307** (854)	0,092** (854)	0,076* (854)	-0,115** (854)
BBV2	0,054 (855)	0,012 (855)	0,018 (855)	-0,040 (855)	0,060 (854)	0,077* (850)	-0,102** (856)	-0,105** (858)	0,149** (858)	0,052 (858)	-0,013 (858)
BBV3	0,03840 (850)	0,184 (850)	-0,037 (850)	0,015 (851)	0,016 (849)	0,108** (847)	-0,004 (851)	0,271** (853)	0,117** (853)	-0,117** (853)	0,097** (853)
BEV4	0,118** (847)	-0,022 (847)	0,036 (847)	-0,042 (848)	0,077* (846)	0,178** (844)	-0,018 (848)	-0,010 (850)	-0,052 (850)	-0,082* (850)	0,035 (850)
BBV5	0,005 (850)	0,102** (850)	0,036 (850)	-0,007 (851)	0,006 (849)	-0,023 (847)	-0,059 (851)	-0,007 (853)	0,040 (853)	0,051 (853)	-0,052 (853)
BBV6	-0,023 (846)	-0,008 (846)	0,079* (846)	-0,006 (847)	0,070* (845)	-0,040 (843)	-0,077* (847)	-0,089** (849)	0,012 (849)	0,085* (849)	-0,075* (849)
BBV7	0,015 (849)	0,283** (849)	-0,049 (849)	0,079* (849)	-0,071* (848)	-0,048 (845)	0,063 (850)	0,165** (852)	-0,051 (852)	-0,156** (852)	0,066 (852)
BBV8	0,007 (849)	0,039 (849)	-0,006 (849)	0,011 (849)	0,009 (848)	0,037 (845)	-0,018 (850)	-0,083* (852)	-0,081* (852)	-0,088** (852)	-0,035 (852)
BBV9	-0,023 (848)	0,020 (848)	0,012 (848)	-0,008 (849)	0,033 (847)	-0,034 (846)	-0,047 (849)	-0,043 (851)	0,007 (851)	0,032 (851)	-0,025 (851)
BBV10	0,141** (848)	0,168** (848)	0,043 (848)	-0,040 (849)	-0,006 (847)	0,139** (845)	-0,027 (849)	-0,039 (851)	-0,118** (851)	-0,117** (851)	0,021 (851)

BYLAAG B (vervolg)

	HSPVH	HSPVI	HSPVJ	HSPVO	HSPVQ2	HSPVQ3	HSPVQ4	GESLAG	WOON- AREA	TAAL- GROEP 1	TAAL- GROEP 2
HSPVA	0,316** (865)	0,171** (866)	-0,187** (866)	-0,111** (867)	-0,201** (865)	0,010 (859)	-0,114** (868)	0,124** (868)	-0,013 (868)	-0,068* (868)	0,051 (868)
HSPVB	-0,003 (864)	0,027 (864)	-0,057 (865)	0,016 (865)	-0,078* (863)	0,026 (858)	0,061 (866)	-0,004 (866)	-0,079* (866)	-0,108** (866)	0,077* (866)
HSPVC	0,347** (865)	-0,103** (866)	-0,079* (866)	-0,371** (867)	-0,043 (865)	0,216** (859)	-0,306** (868)	-0,178** (868)	0,070* (868)	0,004 (868)	0,031 (868)
HSPVD	-0,293** (865)	0,034 (866)	0,133** (866)	0,221** (867)	0,044 (865)	-0,171** (859)	0,230** (868)	0,055 (868)	-0,002 (868)	-0,004 (868)	0,063 (868)
HSPVE	0,028 (864)	-0,038 (864)	-0,076* (865)	-0,025 (865)	-0,029 (864)	-0,075* (859)	-0,027 (866)	-0,012 (866)	-0,006 (866)	0,073* (866)	-0,083* (866)
HSPVF	0,178** (865)	0,009 (865)	-0,038 (866)	-0,049 (866)	-0,072* (864)	-0,113** (859)	-0,013 (867)	-0,034 (867)	0,078* (867)	-0,022 (867)	0,001 (867)
HSPVG	0,198** (865)	0,046 (865)	-0,053 (865)	-0,168** (865)	-0,033 (865)	0,198** (859)	-0,099** (866)	-0,022 (866)	-0,064 (866)	-0,108** (866)	0,063 (866)
HSPVH	1,000 (865)	-0,032 (864)	-0,165** (865)	-0,332** (864)	-0,103** (864)	0,158** (859)	-0,232** (865)	-0,147** (865)	0,018 (865)	-0,036 (865)	0,030 (865)
HSPVI	-0,032 (864)	1,000 (866)	-0,078* (864)	0,052 (865)	-0,121** (864)	0,007 (858)	0,079* (866)	0,296** (866)	-0,095** (866)	-0,113** (866)	0,071* (866)
HSPVJ	-0,165** (865)	-0,078* (864)	1,000 (866)	0,062 (865)	0,128** (864)	0,013 (859)	0,054 (866)	-0,069* (866)	0,078* (866)	0,044 (866)	0,012 (866)
HSPVO	-0,332 (864)	0,052 (865)	0,062 (865)	1,000 (867)	0,036 (864)	-0,246** (859)	0,287** (867)	0,110** (867)	-0,040 (867)	-0,074** (867)	0,070* (867)
HSPVQ2	-0,103** (864)	-0,121** (864)	0,129** (864)	0,036 (864)	1,000 (865)	-0,038 (859)	0,042 (865)	-0,106** (865)	0,089** (865)	0,135** (865)	-0,088** (865)
HSPVQ3	0,158** (859)	-0,007 (858)	0,013 (859)	-0,246** (859)	-0,038 (859)	1,000 (859)	-0,142** (859)	0,004 (859)	0,003 (859)	-0,063 (859)	0,108** (859)
HSPVQ4	-0,232** (865)	0,079* (866)	0,054 (866)	0,287** (867)	0,042 (865)	-0,142** (859)	1,000 (868)	0,098** (868)	-0,047 (868)	-0,096** (868)	0,068* (868)
GESLAG	-0,147** (865)	0,296** (866)	-0,069* (866)	0,110** (867)	-0,106** (865)	0,004 (859)	0,099** (868)	1,000 (871)	-0,076* (871)	-0,014 (871)	0,053 (871)
WOON- AREA	0,018 (865)	-0,095** (866)	0,078* (866)	-0,040 (867)	0,089** (865)	0,003 (859)	-0,047 (868)	-0,076* (871)	1,000 (871)	0,419** (871)	-0,169** (871)
TAAL- GROEP1	-0,036 (865)	-0,113** (866)	0,044 (866)	-0,074* (867)	0,135** (865)	-0,063 (859)	-0,096** (868)	-0,014 (871)	0,419** (871)	1,000 (871)	-0,595** (871)
TAAL- GROEP2	0,030 (865)	0,071* (866)	0,012 (866)	0,070* (867)	-0,088** (865)	0,108** (859)	0,068* (868)	0,053 (871)	-0,169** (871)	-0,595** (871)	1,000 (871)
GEMST8	0,019 (865)	-0,027 (866)	-0,030 (866)	0,026 (867)	0,025 (865)	0,075* (859)	0,100** (868)	-0,070* (871)	-0,105** (871)	-0,110** (871)	0,111** (871)

BYLAAG C

SLEUTEL VIR AFKORTINGS IN TABELLE

Afkortings: Veranderlike-name

Aanleg veranderlikes

AAT1	Nie-verbale redenering
AAT2	Verbale redenering
AAT3	Engelse woordeskat
AAT4	Engelse leesbegrip
AAT5	Getalbegrip
AAT6	Afrikaanse woordeskat
AAT7	Afrikaanse leesbegrip
AAT8	Vierkante
AAT9	Ruimtelike waarneming

Belangstellingsveranderlikes

BBV1	Tegnies
BBV2	Buitershuis
BBV3	Sosiale dienste
BBV4	Natuurwetenskap
BBV5	Kantoorwerk nie-numeries
BBV6	Kantoorwerk numeries
BBV7	Musiek
BBV8	Kuns
BBV9	Handel
BBV10	Taal

Persoonlikheidsveranderlikes

HSPVA	Fortlikheid
HSPVB	Intelligensie
HSPVC	Emosionele stabiliteit
HSPVD	Prikkelbaarheid
HSPVE	Dominansie
HSPVF	Entoesiasme
HSPVG	Pligsgetrouheid
HSPVH	Waaqhalzigheid
HSPVI	Teerhartigheid
HSPVJ	Indiuidualisme
HSPVO	Bevreesdheid
HSPVQ2	Selfgenoegsaamheid
HSPVQ3	Beheersdheid
HSPVQ4	Gespannendheid

SUMMARY: THE PREDICTION OF THE ACADEMIC ACHIEVEMENT OF BLACK PUPILS

By G.J. van der Westhuizen

1. AIM AND OVERVIEW

The aim of the research was to determine with which variables and what measure of success the academic achievement of black pupils can be predicted in different school subjects.

To achieve this aim a theoretical study was firstly made of the phenomenon, academic achievement prediction as it is manifested in the educational context. It was indicated that the action to predict is of supporting value to education, and that it assumes a central position in the teaching-learning situation. In addition it was indicated that academic achievement prediction is a difficult undertaking, that it demands exceptional knowledge of the teacher, and that it is essential that the teacher should be able to predict as accurately as possible.

Secondly a study was made of the methodology of academic achievement prediction. It was indicated that there are different procedures for the initial selection of predictor variables, procedures which are mainly variations of factor analysis. Possible usages of moderating variables for the grouping of pupils in homogeneous groups were also discussed and procedures for the identification of the best predictors of academic achievement were described.

In the third instance the academic achievement of black pupils was investigated together with the factors by which it is influenced. The indications are that the percentages of standard ten passes are relatively low, and that there are, inter alia, sex differences, language group differences and also urban/rural differences in the achievement of pupils. Then the causes of poor academic achievement by black pupils in the school and family environment were considered, and also the extent of

educational and cultural deprivation. It was concluded that the family environment does not always promote academic achievement at school.

With regard to the variables which are specifically related to the achievement of black pupils, a limited number of research results are available. In spite of this, there are indications that the pupil and milieu variables are related in the same measure to the academic achievement of black pupils as indicated by the general tendencies in research results. This conclusion was arrived at with some reservation, because there are certain indications of differences in the relative weighting of variables pertaining to achievement. In addition it was discovered that there are non-test factors which also co-determine the achievement of black pupils in psychometric tests. It transpired too, that further research is necessary as regards the sources of the unexplained variance in the academic achievement of black pupils.

In the fourth instance a study was made of the relationship between a specific selection of variables and the academic achievement of black pupils. An image was obtained of the relationship between ability, previous achievement, interest and personality, and the academic achievement of black pupils, and then some problem questions based on the relevant literature, were formulated. The empirical research which followed, attempted to find some of the answers to these questions.

2. AIM, PROCEDURE AND RESULTS OF THE EMPIRICAL INVESTIGATION.

The aim of the empirical investigation was to determine the extent to which the standard ten achievement of black pupils can be predicted with the aid of cognitive, non-cognitive and biographical variables.

Four groups of hypotheses were drafted. The group-A hypotheses investigated the contribution of the subsets of the best predictors from all the independent variables to R^2 . The groups

B, C, and D hypotheses studied respectively, the contributions of the cognitive, non-cognitive, and biographical variables to R^2 in the dependent variables.

In the research, the data was used of 871 subjects of the 19179 students who comprised the 1980 pupil population which took part in the Guidance Project of the Department of Education and Development Aid. Data was compiled of three psychometric tests, the Academic Aptitude Test, the Vocational Interest Questionnaire, and the High School Personality Questionnaire. This data was subjected to factor analysis and nine factors were identified.

To test the different groups of hypotheses, the technique of multiple regression analysis was applied in two ways. Firstly, the all possible subsets multiple regression method was used so as to identify the subset of best predictors per dependent variable, on the basis of the Cp criterion. The group-A hypotheses were tested on this basis.

Secondly, the remaining hypotheses were tested by calculating differences in R^2 and testing their significance. In the case of each dependent variable R^2_1 was calculated for a basic set of control variables which varied per group hypotheses. To this set of control variables the cognitive predictors were added and R^2_2 calculated. The difference between R^2_2 and R^2_1 then gives an indication of the contribution which was made by the cognitive variables to the prediction. The same procedure was followed to calculate the contribution of the non-cognitive and of the biographical variables to the prediction. The sets of control variables varied in the different analyses. In each case the educational significance of the contributions to R^2 was calculated with the aid of the formula for the calculation of effect sizes as drafted by Cohen (1977). With the formula of Cohen, a more precise indication was obtained of the educational significance of the contributions to R^2 . The effect sizes indicated whether contributions to R^2 were of small, medium or large educational significance.

On the basis of the results for multiple regression analyses, selections were made of the biographical variables, and the potential role of each as moderators of the prediction of dependent variables were then investigated.

In the last instance a cross validation of results was made.

The results of the statistical analyses indicate in the first instance that the subsets of best predictors of standard ten achievement, consist of cognitive, non-cognitive and biographical variables. The combinations of predictors vary from one school subject to another, although certain trends were observed, like for instance that the cognitive variables generally made the largest contribution to R^2 of all the predictors. It was also found that the best subsets of predictors provide better predictions for standard ten total, English, Afrikaans and Biology, and weaker predictions for History and the Vernacular.

In the second instance the results indicate that the cognitive variables, like aptitude and previous achievement separately and together, made a statistical- and educational-significant contribution to the prediction of achievement in the separate standard ten subjects. These contributions were made in addition to the non-cognitive and biographical variables which served as control measures. The contributions of the cognitive variables are larger in the case of standard ten total, Afrikaans and English, and smaller in the case of the Vernacular, History and Biology. It was also found that previous achievement always rendered a larger contribution to the prediction, except in the case of English and History.

In the third instance it was found that the non-cognitive variables, interest and personality separately and together, produce in isolated instances, significant contributions to the prediction of the dependent variables. These contributions to the prediction of dependent variables are produced in addition to the control variables (cognitive and biographical variables), and

they are small and also (in terms of effect sizes), of small educational significance.

In the fourth instance it was found that, sex in four cases, living area (urban/rural) in four, language group 2 (Zulu/non-Zulu) in four, and language group 1 (Sotho/non-Sotho) in six cases, made significant contributions in addition to the cognitive and non-cognitive control variables) to the prediction of standard ten achievement. These contributions vary from a small to a large measure of educational significance. Together, the variables contribute significantly to all the dependent variables, and it was found that the contributions of the biographical variables are largest with regard to History and Biology. Finally, the results of the research on the effects of moderator variables indicate that sex has a modifying effect only in the case of the Vernacular as regards the prediction. Living area has no modifying effect and the effect of language group 1 is limited to History. Language group 2 is the variable which, with regard to most dependent variables, has a moderating effect on the prediction, as regards all the dependent variables except the Vernacular.

In the validity study it was found that the degree of validity was satisfactory, with the exception of the results relating to History.

The most important conclusion made on the basis of the empirical research is that the academic achievement of black pupils and the inclusive variables can only be predicted with limited success. school subjects vary a great deal in their predictability, and in each case there is a large amount of unexplained variance of which the source probably lies outside the scope of the variables provided for in the research. A further conclusion is that the variables, which together with others (and also individually) make the greatest contribution to the prediction, are the cognitive variables. The contribution of the non-cognitive variables, interest and personality, is quite small, even smaller than the indications in present literature. As a whole this is in accordance with the results of other investigations in

developing countries. In conclusion, the inference was made as a result of the moderator study that biographical variables are indeed potentially serviceable as moderating variables and that language group 2 (Zulu/non-Zulu) probably has the greatest potential.

The results of this research have implications for teaching practice as well as for further research. Practical recommendations have been made with regard to the use of the results for guidance purposes, and with a view to the manipulation of variables for the improvement of academic achievement. Recommendations have also been made for further research on alternative variables as well as the non-test factors which influence the academic achievement of black pupils.