



(GLWRULDO

2SHQ \$F

&ULWLFDO 3RZHU (VWLDPDWHG)URP D 6LQJOH

&KLQJ)HQJ &KHQJ

'HSDUWPHQW RI \$WKOHWF 3HUIRUPDQFH 1DWLRQDO 7DLZDQ 1RUPDO 8QLYHUVLW\ 7DLSHL 7DLZDQ

&RUUHVSRLQGLQJ &DXWKRU 'HSDUWPHQW RI \$WKOHWF 3HUIRUPDQFH 1DWLRQDO 7DLZDQ 1RUPDO 8QLYHUVLW\ DQG HVFKHQJ#QWQX HGX WZ

5HF GDWDFK \$FDDDFKH 3XE GSWULO

&RSULJKW &KHQJ &) 7KLV LV DQ RSHQ DFFHVV DUWLFOH GLVWULEXWHG XQGHU WKH WHUPV RI WKH & GLVWULEXWLRQ DQG UHSURGXFWRQ LQ DQ\ PHGLXP SURYLGHG WKH RULJLQDO DXWKRU DQG VRXUFH D

&LWDVW&KHQJ &) &ULWLFDO 3RZHU (VWLDPDWHG)URP D 6LQJOH ([HUFLVH 7HVW - \$HURELFV)LWQHVV

(GLWRULDO

%XUQOH\ 0 'RXVW -+ 9DQKDWDR \$ GHWHUPLQH SHDN R[\JHQ XSWDNH DQG WKH

&DUGLRYDWHXKLDW KHDOWK SURCHMWRU (HDFG

LQVWUXFWRUV YHU\ FRPHRUDERXV DLP SCORFIDW /LHQHU 0 6FKDXHOEHUJHU) 3H FRPSRQHWR RI KWDGWRK SUHODFWULHDFG

HvHFWLXDLQLQJ SURJUDP IRU DHURELF HQGXUDQFH GHWHUPLQDWRU RI H[HUFLVH LQWHQVLW\ LV LPSRUWDQW 2PHPHWKRQ &WR= DGHVWL 50 WKH XPHU 0 FLGD

LQWHQVLW\ ZKLFK FDQ EH XVHG WR GLVFULPLQDWH WKH EHWZHHQ DHURELFUHQ DQG H[HUFLVH LQWHQVLW\ GRPDLQ & 3 FRQVW 500 RXW 3 WHW KHUHG VZLPPHQDQG

SURSRVHG E\ 0RQRG DQG 6FKHUHU > @XVHWV 5-PSOH PDWKHPDWLFDO PRGHV WR LGHQWL\ D SRZHU RXWSXW HXWVHW 5-PSOH LQGLYNGXDC&ODUN

PDLQWDLQ DW D SK\VLRRJLFDV WHDQ\ VWDFH 7DGLWLRLQDQV VHYHUDQ H[KDXVWHG H[HUFLVHG WJWKH 8HYDQXNLJHG HQRV 0LQ DOO RXW FIFOLQJ WHVW 0HG 6

RQH VLQJOH H[HUFLVH WHVW WHUPV 6KQDQ 5DQ > 07/HH &V :DQJ &< GHYHORSHG WR HVWLPDWH WKH & 3 IRU FUWLRQJ SRZHU QWUDPHU FURDQ XVLQ

HUIRPHWHU H[HUFLVH DQG VZLPPHQJ > (@ :HSDUWPHQW WKDW WKH 07 FRQFHSW FDQ EH DSSURSULDWHO\ XVHG WR WKH 7RZHU 03RPHWHN H[HUFLVH

> @ 3UHYLRXV VWXGLHV KDYH UHSRUWHG WKH 0LQDO WKDQD KDGRD PRGHU DWHWR KLJK WHVW UHWHVW UHDELDELWL > @GDQ 6SRDWW WKHFHQG WHVW SRZHU (

GHULYHG XVLQJ WKH 07 FDQ DSSURSULDWHO\ +K:W&U&KHQJ 3WK&KHQJ &)DOXH 7HVW HVWLPDWHG XVLQJ WKH WUDGLWLRQDO PZQDWRPH WHVW SRZHUHQWUDPHU &VUDFV

PRGHV > @ 7R WHVW WKH VHQLWLYLW\ & RQJHG VYD WKH (XRSWRQ & 0QHWHWR 6 RXU ODE DOVR HQYFRWWUDWLOKHH J KUR LQWHQVLW\

LQWHUYDO WUDLQLQJ LQVSLUDWRU\ PXVFRUDFLO 6KLDQ 7 &KHQJ 0HWHG H[HUFLVH QXWULWLRQDO VXSHHEDDWRQVQH J 3RZHU GXUDWRQ UHODWLRQV KLS GXULQ

SHUIRUPDQFH > @ 2XU UHVXOWV LQGLYNGXDC&ODUN 3RZHU SUHVHWHG DW WK \$QQXDO & RQI & RQI WLRQLQJ VVWRPLDWRQ 07 LV DV 0LQGLW 86S

DQG VHQLWLYLW\ PHWKRQ WR HVWLPDWH WKH FRQYHQWLRQDO & 3 YDOXH DQG &KHQJ &) +VX & XRS > 0LQ 3RZHU 86S LQWHQVLW\ LQWHVW WJWKH WUDLQLQJ PL

SHUIRUPDQFH LQ WUDLQHG URZHU > \$EVWU \$QQXDO & RQJUHVV RI WKH (XURSHDQ & ROOHJ \$PVWHUGDP \$PVWHUGDP 1HWKHUODQGV

5HIHUHQFHV 0RQRG + 6FKHUHU 0R-UN FSDFLW\ RI D \QHUJLF PXVFXODU JURXS (UJRQRPLV

%UR[WHUPDQ 50 \$GH &- 3RROH '& +DUPV &\$ %DUVWRZ 7- \$ VLQJOH WHVW IRU WKH GHWHUPLQDWRU RI SDUDPHWHUV RI WKH VSHHG WLPH UHODWLRQV KLS I

UXQLQLQJ 5HVSLU 3K\VLRO 1HXURELRO