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Parenting in the context of driving: Spanish adaptation of the Family Climate for Road Safety (FCRSS) for parents and children

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ABSTRACT

The Family Climate for Road Safety Scale (FCRSS; Taubman – Ben-Ari & Katz – Ben-Ami, 2013) is a comprehensive measure originally developed in Israel to assess parent-children relations in the specific context of driving. The scale consists of seven dimensions: Modelling, Feedback, Communication, Monitoring, Messages, Limits, and Non-commitment to Safety. While the original FCRSS examines the young drivers' perception across the seven domains, a version applicable to parents has also been developed by the same authors. The current study investigates the validity and reliability of the FCRSS-Spain for both parents and young drivers. A total of 377 parents (199 fathers and 178 mothers) and 243 of their children (143 daughters and 100 sons) responded to the FCRSS-Spain versions and provided sociodemographic data. In addition, the young drivers completed the Spanish version of the Multidimensional Driving Style Inventory (MDSI-Spain). Results from exploratory structural equation modelling (ESEM) indicate that six out of the seven FCRSS domains were replicable among Spanish drivers. The Messages dimension did not emerge as a consistent factor in the FCRSS for either parents or young drivers. All six factors demonstrated good internal consistency reliability (ordinal alpha coefficients exceeding 0.70), except for Non-commitment to safety. Significant differences were found between mothers and fathers in various FCRSS dimensions in the predicted direction, whereas no significant differences in FCRSS scores were found between young men and young women. As expected, associations were found between parents' scores in various FCRSS dimensions and the reckless, angry, dissociative, anxious, and careful driving styles reported by the young drivers, as well as between young drivers' FCRSS scores and their self-reported reckless, angry, dissociative, anxious, and careful driving styles.

1. Introduction

Road accidents represent a major public health problem worldwide due to the high number of deaths and injuries caused every year (WHO, 2018). Teens (16–17) and young (18–24) drivers have the highest fatal and non-fatal crash risks compared with other age groups (Regev et al., 2018) and young male drivers have a higher crash risk than their young female counterparts (Williams, 2003). In Spain, from 2019 to 2022, road deaths among young people aged 15 to 24 increased by about 15%, representing the highest risk group (DGT, 2022).

The increased crash risk for young drivers has been associated with higher endorsement of risky driving (Fernandes et al., 2010; Scott-Parker & Oviedo-Trespalacios, 2017). Among the factors explaining youngsters' risky driving behaviour (see Shope & Bingham, 2008, for a review), various studies have stressed the importance of parenting behaviours and the quality of parent-children relationships.

For example, Simons-Morton and Ouimet (2006) showed that young drivers who perceived high levels of parental monitoring and driving limits were less prone to engaging in a variety of risky driving behaviours, and reported fewer traffic violations and vehicle collisions than

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those with lower restrictions and monitoring. Research has also found parent-teen communication to be related to young driving behaviour, with higher parent-teen discussions about safe driving and a consensual communication pattern found to be positively associated with teens' attitude toward driving safety (Yang et al., 2013). In addition, it has been shown that young drivers' perceptions of their parents' involvement in risky driving predicted higher self-reported risky driving (Schmidt et al., 2014), indicating that parents serve as important driving role models for their children. Indeed, previous studies have shown similarities between parents' and children's Driving Styles (DS) (Taubman – Ben-Ari et al., 2005).

The Family Climate for Road Safety Scale (FCRSS) measures the quality of the parent and child relationship. This scale provides information on the strengths and weaknesses in a family's safety practices, which is useful in the development of tailored interventions to increase the parents' active participation in promoting safe driving habits in their children. This could be implemented through Parents' Supervised Driving programmes (PSD), which are useful to improve parents' and teen drivers' experience behind the wheel, and Graduated Driver Licensing (GDL) programmes. In addition, having FCRSS versions adapted for young drivers and their parents allows for a comparison between the perceptions of the two generations and helps identify possible gaps between these perceptions that could be used to promote dialogue (Taubman – Ben-Ari and Katz – Ben-Ami, 2013). Further, knowing how their children perceive safety practices within the family can help parents modify their own behaviour in ways that encourage safe driving behaviours in their children. Finally, the FCRSS could be a useful tool for applied researchers interested in gaining a deeper understanding of how families interact with their young children and shape their attitudes, perceptions, and behaviour behind the wheel. The FCRSS can also assist in examining the effectiveness of road safety interventions targeting specific aspects of the family climate.

Between others, FCRSS has been already used: 1). To better understand the complex set of antecedents of reckless driving among young drivers and addresses the practical implications of the findings for road safety (Taubman – Ben-Ari and Katz – Ben-Ami, 2012). For example, positive aspects of parent–child relationships and high levels of conformity with authority have been found to be associated with careful driving style (DS). On the contrary, reckless DS have been associated with lack of family commitment with traffic laws driving, greater peer pressure and less compliance of the norms. 2). To find out the moderate role that attitude, social norms and locus of control have in predicting risky behavior behind the wheel (Carpentier et al., 2014). 3.) To establish associations between self-efficacy, the DS of young people and the attitudes of parents towards their children driving accompanied (Taubman-Ben-Ari, 2015) or 4.) To make cross-cultural comparisons between countries analyzing risky driving (Taubman – Ben-Ari et al., 2018).

1.1. Family Climate for Road Safety: Concept and measurement

In an effort to integrate accumulated knowledge on parents' behaviour and parent-teen relationships with respect to driving, Taubman – Ben-Ari and Katz – Ben-Ami (2012, 2013) developed the concept of family climate for road safety. They borrowed the main rational behind the theoretical concept from workplace safety studies and applied it to the family context to refer to the young drivers' perceptions of their parents and family practices, values and priorities with regard to safe driving. The family climate for road safety consists of seven dimensions: (1) Modelling, which refers to the positive role model that parents provide to their children through their own safe driving behaviour and attitude towards traffic rules compliance; (2) Feedback, which relates to parents' positive reinforcement and comments to their children regarding safe driving; (3) Communication, which refers to the tendency of parents to talk openly with their sons and daughters about the potential hazards on the road, to discuss different driving issues, including risky driving, and to set agreements regarding the right way of driving; (4) Monitoring, which entails parental supervision and control of the youngsters' driving, including informing the parent who are in the car, where they are going and what time they intend to return home; (5) Commitment to safety, which refers to parents' commitment to road safety such as obeying traffic laws and investing time in safe driving education; (6) Messages, which consists of parents conveying clear verbal messages about safe driving to their children and ensuring that these messages are understood; and (7) Limits, which refers to the existence of explicit and clear family rules regarding safe driving and the young drivers' awareness of parental restrictions that will be imposed if they do not comply with these rules.

In order to measure these seven dimensions, Taubman – Ben-Ari and Katz – Ben-Ami (2013) developed a 54-item questionnaire, the FCRS Scale (FCRSS). The higher the score on each domain, the greater the young drivers' perception of a positive family climate for road safety, except for the Commitment to safety dimension, for which all indicators are negative (i.e., reflecting non-commitment to safety). Exploratory factor analysis supported the seven FCRSS domains in a sample of Israeli young novice drivers. All the FCRSS factors showed good reliability, as evidenced by Cronbach's alpha coefficients ranging from 0.71 to 0.91, and correlated as expected with various aspects of the family functioning (e.g., involvement, granting of autonomy, warmth, communication, cohesion, adaptability) on the one hand, and with several driving measures (e.g., self-reported risky driving, personal commitment to safe driving, proneness to risk-taking while driving, and DS) on the other.

The validity of the FCRSS measures has been examined across different countries, including Australia (Taubman – Ben-Ari et al., 2018), Belgium (Carpentier et al., 2014), USA (Burns et al., 2020) and Argentina (Poó et al., 2023). These studies provided further support for the FCRSS scores interpretations; however, its factor structure has not been consistently replicated. In particular, while Modelling, Feedback, Communication and Non-commitment to safety have been supported across all the studies, the evidence concerning Messages and Limits has been mixed. For example, Carpentier et al. (2014) used principal component analysis and found a six-factor solution that excluded the Messages factor, in a sample of Belgian drivers. In the USA, Burns et al. (2020) used exploratory (EFA) and confirmatory factor analysis (CFA) and identified a five-factor solution similar to the original FCRSS structure, but neither the Messages nor the Limits dimensions were identified in this study. In contrast, all seven FCRSS domains were replicated in the studies conducted in Argentina (Poó et al., 2023) and Israel (Taubman – Ben-Ari et al., 2018). The variability in the FCRSS factor structure could be explained by methodological discrepancies, such as the factor-analytic methods used or age-related differences in sample composition (see Poó et al., 2023, for a detailed review). It is also possible that the FCRSS domains are not generalisable across drivers from different countries or ages. Indeed, parenting behaviour and communication patterns within families vary across cultures (Rubin & Chung, 2006) and parent-children relationships may change from adolescence to young adulthood (Shulman & Ben-Artzi, 2003), which presumably affects parents' involvement and communication with young people on different issues, including driving.

Further, Taubman – Ben-Ari (2015) developed a FCRSS version almost identical to the original FCRSS, for assessing parents' perception of the family climate for road safety. Results from CFA indicated that the original seven-factor structure (save for two items which were removed) fitted well to the data, and reliability coefficients were acceptable and very similar to those found in the sample of young drivers (Cronbach' alpha values ranging from 0.77 to 0.89 for the FCRSS-parents dimensions). In addition, significant associations were found between parents' and young drivers' FCRSS scores on the one hand, and between parents' FCRSS scores and their self-reported DS on the other.

1.2. FCRSS dimensions, DS and sociodemographic factors

Driving style refers to the drivers' typical driving behaviour or their customary driving mode, including driving speed, level of attention, headway (what is this?) and obedience to traffic rules (Elander et al., 1993). Taubman – Ben-Ari et al. (2004) proposed four broad domains of driving style: (a) Reckless and careless, which involves ignoring traffic rules and deliberately engaging in risky driving to seek thrills; (b) Angry and hostile, which refers to drivers' tendency to become irritated and display anger and hostility to other road users; (c) Anxious, which is characterised by feelings of anxiety, tension and alertness while driving, along with the incapacity to engage in relaxing activities during driving; and (d) Patient and careful, which reflects a well-adjusted mode of driving characterised by calmness, politeness, planning ahead and compliance with traffic rules. Taubman – Ben-Ari et al. (2004) developed the Multidimensional Driving Style Inventory (MDSI) to assess these four broad domains. Further studies on the MDSI factor structure (Padilla et al., 2020; Poó et al., 2013; van Huysduynen et al., 2015) showed slightly different factor structures that, however, maintain the four basic domains originally proposed. Several studies have shown significant associations between the FCRSS dimensions and the DS of the young drivers. In particular, parents' and young drivers' perception of the positive FCRSS dimensions (Modelling, Feedback, Communication, Monitoring, Messages and Limits) have been associated with young drivers' greater endorsement of careful driving and lower endorsement of risky, angry and anxious driving. On the other hand, the negative FCRSS dimension of Non-commitment to safety displayed the opposite pattern of relations with DS, whereby the less committed to safety parents are - either as perceived by the young drivers or by themselves - the higher the young drivers' tendency to engage in reckless, angry and anxious driving, and the lower their tendency to engage in careful driving (Taubman – Ben-Ari and Katz – Ben-Ami, 2013; Taubman – Ben-Ari, 2015).

The FCRSS has also been investigated in relation to various sociodemographic factors, including sex. The results regarding sex have been somewhat contradictory, with some studies showing young women have more positive perceptions of their parents as driving role models, providing more feedback, maintaining more open communication, delivering clearer safety messages, monitoring their driving more closely, setting more limits on them and being more committed to safety than young men (Poó et al., 2023; Taubman – Ben-Ari & Katz – Ben-Ami, 2013), while others found no differences between young men and women (Burns et al., 2020). With regard to sex differences in parents, a study conducted by Taubman – Ben-Ari (2015) revealed differences in all FCRSS dimensions except for Feedback, whereby mothers perceived themselves as better role models, established more open communication, conveyed clearer messages, set more limits and monitored their children more, and were more committed to safety than fathers.

1.3. The present study

The critical influence of parents on the driving behaviour of their children is well-established in the literature (Ferguson et al., 2001; Taubman – Ben-Ari, 2014). One of the most comprehensive assessment tools for examining the influence of parents' attitudes and behaviour on their children's driving is the FCRSS. In Spain, studies examining how parents influence the driving behaviour of the young are limited. It is important to note that each country has its own cultural model of parenting (Levine et al., 1994), which affects parent–child interactions. These cultural differences imply that findings stemming from studies in a particular country may not be generalisable elsewhere and stress the importance of studying parenting behaviour in the specific contexts in which it takes place (Richaud, 2010). Accordingly, this study examines the validity and reliability of the FCRSS for assessing parents' behaviour and parent–child interactions with regard to young drivers' behaviour in Spain. Although a Spanish-language FCRSS version has been developed and validated in Argentina (Poó et al., 2023), there are well-known differences in language, culture and driving habits between Spain and Argentina that justify the adaptation and validation of the FCRSS in Spain (ITF, 2022). Additionally, previous research has typically examined the family climate for road safety through the lens of young drivers (e.g., Burns et al., 2020; Poó et al., 2023) and few studies have examined it from parents' point of view. Assessing both parents' and young drivers' perceptions may help identify similarities and differences in the family climate perceived by the two generations, identify possible gaps and use this information to promote behavioural change.

The current study therefore aimed to examine the validity and usefulness of the FCRSS for assessing perceptions of the family climate for road safety from both parents and young drivers in Spain. The objectives were: (1) to translate the FCRSS for parents and young drivers into the Spanish spoken in Spain; (2) to examine the factor structure and reliability of the translated versions of the FCRSS; (3) to investigate associations between FCRSS dimensions and sociodemographic variables, and in particular, to examine differences in FCRSS scores between young men and young women on the one hand, and between mothers and fathers on the other; and (4) to examine associations between parents' and young drivers' FCRSS scores and the young drivers' self-reported DS. Based on the most common findings reported in the literature, we hypothesised that young women would score higher on the positive FCRSS dimensions and lower in Non-commitment to safety than young men. Similarly, it was predicted that mothers would score higher on the positive FCRSS dimensions and lower on the negative dimension of Non-commitment to safety than fathers. It was also hypothesised that young drivers' and parents' scores on the positive FCRSS dimensions would be positively associated with young drivers' careful driving style and negatively associated with the reckless, angry, anxious, dissociative and distress reduction DS. The opposite pattern of correlations was hypothesised for the negative dimension of Non-commitment to safety.

2. Method

2.1. Participants

A total of 620 drivers from Granada, Spain, were recruited for the study. The sample consisted of 377 parents of young drivers (199 fathers and 178 mothers) aged 38 to 79 (M = 51.98; SD = 4.88), and 243 children (100 sons and 143 daughters) aged 18 to 25 (M = 21.17; SD = 1.96). Most parents (97.3%) drove regularly and had >5 years' driving experience. The majority of the young drivers drove almost every day and had less than two years' driving experience (52.7%). The educational level: 22.2% of the young drivers and 31% of their parents had "College education or equivalent" the remainder of both groups having "Non-College Education".

2.2. Measures

2.2.1. Family Climate for Road Safety Scale (FCRSS)

The FCRS Scale (FCRSS; Taubman – Ben-Ari & Katz – Ben-Ami, 2013) consists of 54 items assessing young drivers' perceptions related to the seven domains of the FCRS: Modelling (11 items, Cronbach's alpha = 0.87); Feedback (5 items, Cronbach's alpha = 0.91); Communication (9 items, Cronbach's alpha = 0.83); Monitoring (7 items, Cronbach's alpha = 0.83); Non-commitment to Safety (8 items, Cronbach's alpha = 0.71); Messages (8 items, Cronbach's alpha = 0.83); and Limits (6 items, Cronbach's alpha = 0.74). The FCRSS for parents (Taubman – Ben-Ari, 2015) consists of the same items, rephrased to measure parents' own perceptions. For example, the item "My parents set an example by obeying traffic laws" was replaced by "I set an example by obeying traffic laws". Two items, one corresponding to Monitoring ("I make sure that my son/daughter doesn't fool around on the road") and the other to Feedback ("I'm proud of my son/daughter when they drive safely") were deleted in the FCRSS for parents. Thus, the final version consists of 52

items. In both FCRSS versions, participants were asked to read the instructions and to rate the extent to which each item stem applied to them, using a 5-point Likert scale ranging from "not at all" to "very much". The Spanish language items corresponding to FCRSS for young drivers and for their parents are presented in Appendices I and II.

2.2.2. Driving styles (MDSI)

The Spanish version of the Multidimensional Driving Style Inventory (MDSI-Spain; Padilla et al., 2020) was used in this study. It consists of 34 items assessing six DS: Reckless (7 items); Anxious (4 items); Careful (7 items); Angry (4 items); Dissociative (8 items); and Distress Reduction (4 items). Participants are asked to read each statement (e.g., "I purposely tailgate other drivers") and to indicate on a 6-point Likert scale (ranging from "not at all" to "very much") the extent to which it reflected their feelings, thoughts and behaviours while driving. The six MDSI dimensions were supported using EFA and CFA across independent samples of Spanish participants and internal consistency reliability coefficients ranged from 0.65 to 0.81. In addition, meaningful associations between MDSI scores on the one hand and several driving measures (driving anger, traffic risk perception, violations, lapses, and errors) on the other, supported its convergent and concurrent validity. In the current sample, Cronbach's alpha coefficients were as follows: 0.81 for Reckless style, 0.74 for Anxious style, 0.72 for Careful style; 0.71 for Angry style, 0.74 for Dissociative style, and 0.68 for Distress reduction style.

2.2.3. Sociodemographic data and driving history

Sociodemographic (age, sex, educational level) and driving-related information (driving experience, driving frequency, self-reported traffic collisions and fines) were obtained using an ad-hoc questionnaire.

2.3. Procedure

A translation of the FCRSS to the Spanish language spoken in Spain and Spanish driving culture was first carried out using a committee-translation approach (Nasser, 2005). The translation team consisted of three psychologists and a native English translator. The first psychologist, who specialises in road safety, translated the scale instructions, items and response options into the Spanish spoken in Spain. A second psychologist (expert in psycholinguistics) took into account not only the language specificity but also the habits and Spanish traffic norms. In addition, the translation considered the two intended "voices" (fathers/mothers and children). (See Appendices I and II). The native English translator (the reviewer) then reviewed and made suggestions to improve the translated version of the scales. Lastly, the third psychologist (expert in psychology methods) played the role of adjudicator and met the group and they agreed on the final version of the scales.

Data were collected using a convenience sampling method. An envelope containing the FCRSS for young drivers and their parents, the MDSI and the sociodemographic questionnaire was given to a sample of college students from Granada, Spain, who distributed them among friends, family members, acquaintances and people casually contacted at bus stations and on the University of Granada campus. Once the questionnaires had been completed, they were returned by the students to the researchers by post. Two inclusion criteria were considered for participation: (1) the young drivers had to be aged between 18 and 25 years; and (2) the parent and the young driver had to have valid driving licenses. All participants voluntarily agreed to take part in the study and drivers who filled out the questionnaires as requested (at least one parent and the young driver) were entered into a draw for an iPad. This study was approved by the Ethics Research Committee and the Human Research Committee of the University of Granada (n° 195/CEIH/2016).

2.4. Data analysis

The FCRSS factor structure was examined using CFA and exploratory structural equation modelling (ESEM). As Marsh et al. (2014) noted, CFA relies on independent cluster model, which assumes that each item is a perfect indicator of a latent variable and therefore cross-loadings on the remaining factors are assumed to be zero. However, items are rarely perfect indicators of their intended constructs and tend to display small residual correlations with other constructs, which are typically expressed through minor but non-zero correlations. In some cases non-zero cross-loadings between indicators can be logically anticipated, particularly when assessing inherently complex constructs involving multiple related factors (Asparouhov & Muthén, 2009), such as the FCRSS. In any case, the presence of cross-loadings when they are forced to zero, as in the CFA, results in model misspecifications that may lead to poor fit even when substantive theory is appropriate. Consequently, more flexible factor-analytic approaches to CFA have been developed, such as ESEM. In ESEM, factor loadings of the items on their respective factors are freely estimated, as in CFA, but cross-loadings are not constrained to be zero.

A recent study examining the FCRSS factor structure (Poó et al., 2023) showed that a seven-factor model consistent with the original FCRSS domains fits data poorly using CFA while ESEM resulted in a significant improvement of data fit of the model. These results indicate that more flexible approaches such as ESEM appear more appropriate for testing the dimensionality of the FCRSS. However, as Marsh et al. (2014) pointed out, CFA and ESEM are complementary rather than opposites and using them together is recommended. Accordingly, both approaches were used in the present study. In CFA models, factor loadings of the items on the factor they are intended to measure were freely estimated and cross-loadings were forced to zero, in accordance with the independent cluster model assumptions underlying CFA. In the ESEM model, factor loadings were freely estimated on their a-priori factor and cross-loadings were allowed but targeted to be close to zero (≈ 0) using an oblique target rotation procedure (Browne, 2001).

According to Alamer (2022), ESEM factor loadings on target factors should ideally exceed 0.50 for item retention, although values between 0.30 and 0.50 are acceptable in cases where previous psychometric research supports retaining the item. Another criterion for item retention or deletion relies on the magnitude of the cross-loadings, as substantial cross-loadings suggest that the items are multidimensional (i.e., they measure more than one latent factor) and may therefore be difficult to interpret. There are no specific guidelines in the context of ESEM about what constitutes a "substantial" cross-loading, although some studies have used 0.30 as a cut-off (e.g., Arens & Morin, 2016). Alternatively, Howard (2016) has proposed a difference of at least 0.20 between primary and secondary (i.e., cross-loading) factor loadings for item retention. In the present study, items in the ESEM solution were retained if they met the following criteria: (a) load$>$0.30 on their target factor, (b) load below 0.30 on their non-target (i.e., cross-loading) factors; and (c) the magnitude of the difference between the target and non-target factor loadings was at least 0.20. Exceptionally, items with non-target factor loadings ranging from 0.30 to 0.40 were also retained when the discrepancy between target and non-target loadings exceeded 0.30 (e.g., 0.70/0.35; see Lloret-Segura et al., 2014).

The ESEM model is preferable to CFA when (1) the fit indices are improved (e.g., ΔCFI and ΔTLI increase by at least 0.01, ΔRMSEA decreases by at least 0.015), (2) the magnitude of the ESEM factor correlations decreases substantially compared to CFA factor correlations; (3) there are only small to moderate cross-loadings that are easy to explain; (4) the factors are adequately defined by the items. Otherwise, the CFA model is preferable. The analysis was conducted using Mplus version 6.12. Although different latent factor structures have been identified in the literature, the original seven domains of the FCRSS were used as the starting point in the current study. The models were estimated using the weighted least square mean and variance adjusted (WLSMV) estimator based on the polychoric correlation matrix, which has been specifically designed for categorical data (e.g., binary or ordinal). This method has been demonstrated to outperform Maximum Likelihood (ML) and other

popular estimation methods for ordinal observed variables with five or fewer answer options (Finney and DiStefano, 2013; Li, 2016). Given the over-sensitivity of the chi-square test to sample size and minor misspecifications (Marsh et al., 2005), the model fit was evaluated using the comparative fit index (CFI), the Tucker-Lewis index (TLI), the root mean square error of approximation (RMSEA) and its 90% confidence interval (CI), and the weighted root mean square residual (WRMR). According to common guidelines (e.g., Browne & Cudeck, 1993; Hu & Bentler, 1998; Marsh et al., 2005) CFI and TLI values >0.90 and 0.95 are interpreted as an adequate and excellent fit to the data, respectively, whereas RMSEA values smaller than 0.08 and 0.06 indicate good and excellent model fit, respectively. For WRMR, values smaller than 1.00 are expected to be indicative of good model fit (DiStefano et al., 2018). Importantly, since the performance of the fit statistics may vary under different conditions (Heene et al., 2011; Shi et al., 2019), the above cut-off values are rough guidelines that should be complemented by a detailed examination of model parameters, considering their statistical plausibility and theoretical adequacy (Morin et al., 2016).

Once the FCRSS factor structure had been established, an internal consistency reliability analysis was conducted by computing ordinal alpha coefficients for each factor (Zumbo et al., 2007). The associations between parents' and young drivers' FCRSS scores on the one hand and the young drivers' driving style scores on the other were examined using bivariate Pearson correlations. Finally, one-way MANOVAs were used to examine differences in FCRSS scores between mothers and fathers on the one hand, and between daughters and sons on the other.

3. Results

3.1. Factor structure and reliability of the FCRSS for the young drivers

Goodness of fit indices for the FCRSS measurement models tested in the sample of young drivers are reported in Table 1. The 7-factor CFA model (Model 6 [M6]) showed an acceptable degree of fit to the data according to the RMSEA (<0.08) but unacceptable according to the CFI, TLI (<0.90) and WRMR (>1.00). The equivalent ESEM model (Model 7 [M7]) yielded a clearly improved level of fit according to all fit statistics (CFI and TLI > 0.95, RMSEA < 0.05, and WRMR < 1.00), thus providing an apparently better representation of the data. The ESEM factor correlations diminished substantially (ranging from 0.03 to 0.41, $M = 0.21$) compared to the CFA factor correlations (ranging from 0.14 to 0.97, $M = 0.57$), so arguing in favour of the ESEM model. A detailed examination of parameters from this model, reported in Appendix IV, indicate that latent Modelling, Feedback, Communication, Non-commitment, Monitoring, and Limits factors are well-defined by three or more items with strong (>0.50) target factor loadings (λ ranging from 0.01 to 0.92, $M = 0.52$), and generally small cross-loadings (ranging from 0.001 to 0.67, $M = 0.12$; 80% of the cross-loadings were below 0.20). Seven out of the eight items originally corresponding to Messages did not load strongly on their target factor (λ ranging from 0.01 to 0.57, $M = 0.23$) and six items had at least one cross-loading of strong magnitude (>0.30) that was difficult to explain theoretically. Thus, the validity of the Messages factor was not supported by data. In addition, a total of 12 items corresponding to Modelling (items 22 and 46), Communication (item 37), Non-commitment (items 9, 21, 28, 39 and 41), Monitoring (item 54) and Limits (items 16, 26 and 44) showed weak target factor loadings, strong cross-loadings on two or more factors, or both; they were therefore eliminated. Accordingly, a new FCRSS model consisting of six factors (excluding Messages) and 35 observed indicators was tested.

Table 1
Goodness of fit indices for FCRSS-children measurement models using CFA and ESEM.

Model	χ^2	df	CFI	TLI	RMSEA (90% CI)	WRMR
(M6) 7-factor CFA (54 items)	2695.599***	1356	0.850	0.842	0.064 (0.060, 0.067)	1.557
(M7) 7-factor ESEM (54 items)	1290.245***	1074	0.976	0.968	0.029 (0.022, 0.036)	0.598
(M8) 6-factor CFA (35 items)	930.359***	545	0.944	0.932	0.054 (0.048, 0.060)	1.122
(M9) 6-factor ESEM (35 items)	512.456***	400	0.984	0.976	0.034 (0.025, 0.042)	0.516
(M10) 6-factor ESEM (33 items)	449.821***	345	0.985	0.976	0.035 (0.025, 0.044)	0.487

Note. CFA = Confirmatory factor analysis; ESEM = Exploratory structural equation modelling; χ2 = Chi-square; df = Degrees of freedom; CFI = Comparative fit index; TLI = Tucker-Lewis index; RMSEA = Root mean square error of approximation; 90% CI = 90% confidence interval for the RMSEA; WRMR = Weighted root mean square residual

***p <.001

The results indicated acceptable fit for the 6-factor CFA model (Model [M8]) according to the CFI, TLI and RMSEA, while the WRMR value was slightly above the recommended cut-off value of 1.00 (see Table 1). The 6-factor ESEM model (Model [M9]) showed an excellent fit to the data according to all fit statistics. The pattern of factor correlations was substantially lower in ESEM (ranging from 0.03 to 0.52, $M = 0.23$) compared to CFA (ranging from 0.08 to 0.81, $M = 0.46$). Consequently, the ESEM model was retained. An inspection of the parameter estimates showed that Modelling, Feedback, Communication, Monitoring and Limits remain well-defined by the strong target factor loadings (ranging from 0.32 to 0.94, $M = 0.70$) and minor cross-loadings (ranging from 0.001 to 0.29, $M = 0.09$). The Non-commitment factor appeared less defined, as two out of the four items displayed weak target factor loadings (<0.30). Considering that these items are poor indicators of Non-commitment, they were excluded and thus the final model (Model 10 [M10]) retained six factors and 33 items. The standardised solution for the final model is presented in Table 2.

Reliability estimates (ordinal alpha) were acceptable for Modelling (9 items, 0.87), Feedback (5 items, 0.90), Communication (8 items, 0.83) and Monitoring (6 items, 0.93), marginally below than recommended for Limits (3 items, 0.66) and unacceptable for Non-commitment to safety (2 items, 0.31).

3.2. Factor structure and reliability of the FCRSS for parents

A 7-factor model consistent with the original FCRSS factor structure was tested via CFA (Model 1 [M1]) and ESEM (Model 2 [M2]). The results indicate poor fit of the 7-factor CFA model according to CFI, TLI (<0.90) and WRMR (>1.00), but not for RMSEA (<0.08). In contrast, the 7-factor ESEM model showed excellent fit to the data according to all fit indices (CFI and TLI > 0.95, RMSEA < 0.05 and WRMR < 1.00; see Table 3). The ESEM factor correlations were substantially lower (ranging from 0.01 to 0.43, $M = 0.20$) than the CFA factor correlations (ranging from 0.23 to 0.90, $M = 0.64$), which provides further support for the ESEM model. A detailed examination of parameters from the 7-factor ESEM model (see Appendix III) shows well-defined factors by the presence of generally moderate to strong target factor loadings (ranging from 0.01 to 0.92, $M = 0.50$) and weak cross-loadings (ranging from 0.001 to 0.49, $M = 0.12$; 85% of the cross-loadings were below 0.20). The only exception was the Messages factor, which appears poorly defined by its indicators, as indicated by weak target factor loadings (ranging from 0.004 to 0.37, $M = 0.12$). In addition, various items did not perform as expected. In particular, 10 items (8, 11, 16, 21, 23, 27, 36, 46, 33 and 41) had weak target factor loadings and strong cross-loadings that are difficult to justify, 4 items (items 9, 10, 30, and 37) had strong factor loadings on different factors, and 3 items (22, 35 and 47) had weak factor loadings on all factors. Accordingly, a 6-factor

Table 2
Standardised factor loadings for the final 6-factor ESEM representation of the FCRSS for young drivers.

# Item	Modelling	Feedback	Communication	Monitoring	Non-commitment	Limits
1	**0.45*****	-0.06	0.15*	0.13*	0.04	-0.07
5	**0.80*****	-0.10	0.11	0.01	-0.15*	-0.07
14	**-0.69*****	-0.03	0.31**	0.08	0.01	0.04
19	**0.80*****	0.04	-0.09	0.07	0.02	-0.04
23	**-0.52*****	-0.07	0.14*	-0.06	-0.12	-0.04
29	**0.77*****	-0.01	0.15*	-0.04	-0.03	-0.02
30	**-0.75*****	0.05	-0.06	0.05	0.01	0.09
38	**0.32*****	0.04	0.19*	0.02	0.14*	0.29***
49	**0.78*****	0.02	-0.03	-0.03	0.22**	0.07
13	-0.09*	**0.89*****	-0.15*	0.05	0.11	-0.02
25	0.06	**0.94*****	-0.09*	0.02	-0.03	-0.03
34	-0.04	**0.82*****	0.08	-0.01	-0.13**	0.05
48	-0.10	**0.77*****	0.10	-0.03	0.06	0.01
53	0.08	**0.64*****	0.21**	-0.01	0.06	-0.11
2	0.17**	0.09	**0.57*****	0.11*	-0.09	-0.03
3	-0.09	-0.01	**0.84*****	0.09*	0.04	-0.13**
7	-0.05	-0.11	**0.65*****	0.06	0.25***	0.05
32	0.10	0.15*	**0.49*****	0.06	-0.27***	0.29***
33	0.00	0.07	**0.51*****	-0.03	-0.27***	0.16*
35	0.06	0.07	**0.57*****	-0.06	0.27**	-0.17*
45	0.02	0.11*	**0.76*****	-0.03	-0.24**	0.04
50	-0.09	0.02	**0.59*****	-0.09	0.36**	-0.03
6	0.01	-0.01	0.12*	**0.86*****	0.06	-0.18***
12	-0.02	-0.02	-0.09*	**0.89*****	0.03	0.09*
17	-0.08	-0.03	0.01	**0.68*****	-0.17*	0.39***
20	0.00	0.03	0.00	**0.89*****	0.12*	-0.08
24	-0.03	0.06	-0.08	**0.75*****	-0.11*	0.09*
52	0.08*	-0.01	0.04	**0.91*****	0.01	-0.15***
11	0.36***	0.07	0.10	-0.03	**0.46*****	0.37***
51	0.30***	0.14*	0.22**	0.02	**0.34*****	0.17*
18	-0.04	-0.01	0.00	0.13*	0.22*	**0.64*****
31	0.05	0.04	0.04	0.15**	0.07	**0.70*****
42	0.07	0.12*	0.18**	0.10	0.09	**0.53*****

Note. Target factor loadings are in bold
*p <.05. **p <.01. ***p <.001

Table 3
Goodness of fit indices for FCRSS-parents measurement models using CFA and ESEM.

Model	χ^2	df	CFI	TLI	RMSEA (90% CI)	WRMR
(M1) 7-factor CFA (52 items)	2509.271***	1253	0.895	0.889	0.052 (0.049, 0.055)	1.472
(M2) 7-factor ESEM (52 items)	1288.469***	983	0.974	0.966	0.029 (0.024, 0.033)	0.690
(M3) 6-factor CFA (35 items)	1042.570***	545	0.945	0.939	0.049 (0.045, 0.054)	1.182
(M4) 6-factor ESEM (35 items)	617.284 ***	400	0.976	0.964	0.038 (0.032, 0.044)	0.657
(M5) 6-factor ESEM (34 items)	570.644***	372	0.977	0.965	0.038 (0.031, 0.045)	0.642

Note. CFA = Confirmatory factor analysis; ESEM = Exploratory structural equation modelling; $\chi 2$ = Chi-square; df = Degrees of freedom; CFI = Comparative fit index; TLI = Tucker-Lewis index; RMSEA = Root mean square error of approximation; 90% CI = 90% confidence interval for the RMSEA; WRMR = Weighted root mean square residual

***p <.001

model (excluding Messages) was tested using CFA (Model 3 [M3]) and ESEM (Model 4 [M4]). In these new models, items from the original FCRSS were either removed or reassigned onto a different factor than the one supposedly measured, based on the consistency between the factor and the item content. Specifically, (a) items 22, 23, 30 and 46 from Modelling were deleted, (b) items 33, 35 and 37 from Communication were deleted, (c) items 9, 21 and 42 from Non-commitment were deleted, (d) all items from the original Messages factor were deleted (items 8, 10, 11, 27, 36 and 47) except items 4 and 15, which were reassigned to Communication, and (e) item 16 from Limits was deleted. Thus, the 6-factor model retained 35 items from the original scale.

The results indicate acceptable fit indices for the 6-factor CFA model (M3), except for WRMR. The 6-factor ESEM model (M4) provided a better fit, with all fit statistics meeting their criterion (see Table 3). The ESEM correlations were generally lower (ranging from 0.16 to 0.45, M = 0.30) than in CFA (ranging from 0.29 to 0.72, M = 0.54), which suggests that the ESEM model provides a better representation of the data. The parameter estimates of the 6-factor ESEM model showed all clearly defined factors by the presence of strong factor loadings (ranging from 0.36 to 0.93, M = 0.60) and small cross-loadings (ranging from 0 to 0.38, M = 0.09). However, one item (item 51) had substantial cross-loadings on different factors, for which reason it was deleted. Thus, the final model consisted of six factors and 34 items (Model 5 [M5]). This model was retained for subsequent analysis. The standardised solution is presented in Table 4.

Reliability was examined by computing ordinal alpha for each FCRSS factor. Results showed good reliability coefficients for Modelling (7 items, 0.77), Feedback (4 items, 0.84), Communication (8 items, 0.82), Monitoring (6 items, 0.90), and lower than recommended for Non-commitment to safety (4 items, 0.61) and Limits (5 items, 0.54).

In the current study, some of the FCRSS dimensions had lower reliabilities, especially the Non-commitment factor, which should be taken into account when interpreting their associations with driving styles. The problem may be the factor's small number of items. In the FCRSS young drivers' version, the Non-Commitment Factor has only 2 items

Table 4
Standardised factor loadings for the final 6-factor ESEM representation of the FCRSS for parents.

# Item	Modelling	Feedback	Communication	Monitoring	Non-commitment	Limits
1	**0.45*****	-0.17**	0.23*	0.05	-0.01	-0.10
5	**0.75*****	0.08	0.03	0.05	-0.01	-0.13*
14	**-0.61*****	-0.12	0.17*	0.03	0.20**	0.11
19	**0.63*****	0.01	-0.08	0.01	0.04	0.22***
29	**0.49*****	0.07	0.06	-0.04	0.09	0.08
38	**0.42*****	0.04	0.19***	0.05	-0.13**	0.19***
49	**0.63*****	-0.01	0.04	-0.03	-0.04	0.20**
13	0.14**	**0.72*****	-0.01	0.01	-0.10*	-0.07
25	0.01	**0.93*****	0.02	0.00	0.08*	-0.03
34	0.02	**0.82*****	0.08*	0.00	0.05	0.01
48	-0.05	**0.55*****	0.22**	0.03	-0.11*	0.18***
2	0.14**	-0.05	**0.69*****	0.04	0.12*	-0.12*
3	0.01	0.06	**0.84*****	0.02	-0.04	-0.20***
7	-0.01	-0.04	**0.75*****	0.00	-0.15**	-0.01
32	0.00	0.28***	**0.45*****	0.08	0.06	0.20***
45	0.00	0.13**	**0.57*****	0.04	0.02	0.15**
50	-0.19***	0.13*	**0.48*****	-0.04	-0.14**	0.28***
4	0.17**	-0.04	**0.67*****	0.07	0.06	-0.07
15	0.11	0.09	**0.35*****	0.03	0.03	0.22**
6	-0.08	0.06	0.17**	**0.71*****	-0.07	-0.06
12	0.01	-0.03	-0.03	**0.86*****	-0.08*	-0.04
17	-0.07	-0.11**	0.03	**0.73*****	-0.06	0.10
20	0.14**	0.00	-0.06	**0.76*****	-0.04	0.02
24	0.05	-0.03	-0.03	**0.78*****	0.21***	0.05
52	-0.08	0.09*	0.02	**0.81*****	-0.01	-0.01
28	-0.04	0.00	-0.09	0.11	**0.31*****	-0.11
39	-0.21***	-0.10	-0.02	0.02	**0.72*****	0.11
40	0.06	-0.06	0.24***	-0.09	**0.46*****	0.02
43	0.01	0.13*	-0.15**	-0.09	**0.65*****	-0.09
18	-0.03	0.06	-0.10	0.10	-0.09	**0.45*****
26	0.11	0.08	0.09	0.20***	0.12*	**0.33*****
31	0.21***	0.08	-0.04	0.08	-0.04	**0.50*****
42	0.15*	0.11	0.04	0.10*	-0.06	**0.44*****
44	0.10	-0.03	0.25***	-0.12**	0.03	**0.46*****

Note. Target factor loadings are in bold
*p <.05. **p <.01. ***p <.001

(see Table 5). Therefore, it would be beneficial to add items, preferably direct items, in order to increase the reliability of the factor.

3.3. Sex differences in FCRSS

We next examined differences in FCRSS scores between mothers and fathers on the one hand, and between young women and men on the other, using one-way MANOVAs. Results indicated a significant main effect for sex among parents, Pillai's Trace = 0.083, F(6,370) = 5.56, p <.001, $\eta_p^2 = 0.083$. Univariate ANOVAs for each FCRSS factor revealed significant differences in Modelling, Feedback, Communication and Monitoring. The results are shown in Table 6. As seen in the Table, mothers perceived themselves to be better role models, to provide more feedback, to engage in more open communication and to monitor their children more than fathers. No differences were found between young women and men in FCRSS scores, Pillai's Trace = 0.024, F(6,236) = 0.975, p =.443, $\eta_p^2 = 0.024$.

3.4. Pearson correlations between parents' and young drivers' FCRSS scores and the young drivers' driving styles

Pearson correlations between FCRSS scores and DS scores are

Table 5
Cronbach Alpha (Number of items) of FCRSS factors, Countries (Original, USA, Argentina, Spain) and Versions (Young drivers/Parents).

Cronbach Alpha (N° of items)							
FCRSS Young drivers	Modelling	Feedback	Communication	Monitoring	Non-commitment	Messages	Limits
Original	0.87	0.91	0.83	0.83	0.71	0.83	0.74
(Taubman–Ben-Ari & Katz–Ben Ami, 2013)	(11)	(5)	(9)	(7)	(8)	(8)	(6)
USA	0,88	0,93	0,81	0,91	0,87	Removed	Removed
(Burns et al., 2020	(4)	(5)	(3)	(6)	(9)		
Argentina	0,86	0,95	0,89	0,91	0,74	0,7(	0,8
(Poó et al., 2023)	(8)	(5)	(8)	(7)	(10)	8)	(6)
Spain	0.87	0.90	0.836	0.93	0.31	Removed	0.66
(Doncel et al., 2023)	(9)	(5)	(8)	(6)	(2)		(3)
FCRSS							
Parents							
Original	0,86	0,89	0,85	0,84	0,75	0,8	0,77
Taubman – Ben-Ari (2015)	(11)	(4)	(9)	(6)	(8)	(8)	(6)
Spain	0.77	0.84	0.82	0.90	0.61	Removed	0.54
(Doncel et al., 2023)	(7)	(4)	(8)	(6)	(4)		(5)

Table 6
Means, standard deviations and one-way MANOVAs for FCRSS dimensions by sex, among parents (top) and young drivers (bottom).

FCRSS	Men		Women		F	Df	p	η_p^2
	M	SD	M	SD				
Modelling	3.95	0.61	4.26	0.45	30.47	1, 375	0.000	0.075
Feedback	3.93	0.84	4.18	0.77	9.17	1, 375	0.003	0.024
Communication	3.90	0.63	4.13	0.64	11.62	1, 375	0.000	0.030
Monitoring	3.20	1,00	3.40	1.03	3.91	1, 375	0.049	0.010
Non-commitment	1.91	0.71	1.87	0.73	0.265	1, 375	0.607	0.001
Limits	3.91	0.75	4.03	0.65	2.75	1, 375	0.098	0.007
Modelling	4.03	0.66	4,00	0.68	0.075	1, 241	0.785	0,00
Feedback	3.29	0.93	3.45	1	1.65	1, 241	0.199	0.007
Communication	3.8	0.68	3.87	0.77	0.549	1, 241	0.459	0.002
Monitoring	3	1.17	3	1.17	0.474	1, 241	0.492	0.002
Non-commitment	1.48	0.70	1.34	0.61	2.83	1, 241	0.094	0.012
Limits	3.80	1.03	3.90	1.01	0.648	1, 241	0.421	0.003

presented in Table 7. Significant associations were found between parents' FCRSS scores and their children's DS. In line with our hypothesis, the parents' perceptions on various positive FCRSS dimensions were positively correlated with careful driving style and negatively with maladaptive (risky, angry, anxious, dissociative) DS reported by their children. In addition, a positive association emerged between parents' perception of Non-commitment to safety and their children's maladaptive DS, on the one hand, and a negative association between parents' Non-commitment to safety and their children's careful driving style on the other.

As shown in Table 7, a similar pattern of associations was found between young drivers' FCRSS scores and their self-reported DS, with higher scores on most of the positive FCRSS dimensions being related with higher endorsement of careful driving and lower endorsement of maladaptive DS. Conversely, higher scores on Non-commitment to safety were associated with lower endorsement of careful driving and higher endorsement of maladaptive DS. A more complex association was found between Monitoring and self-reported DS by the young drivers, as it was positively associated with both adaptive (careful) and maladaptive (anxious) DS.

4. Discussion

The present study was designed to provide evidence of the validity and reliability of the FCRSS measures for young drivers and their parents in Spain. In its original conceptualisation, the FCRSS consisted of seven dimensions: Modelling, Feedback, Communication, Monitoring, Non-commitment to safety, Messages, and Limits. Overall, the ESEM results showed that the original seven-factor model represents fairly well the factor structure of the FCRSS in the Spanish sample. In particular, six of the seven dimensions originally proposed by Taubman – Ben-Ari and Katz – Ben-Ami (2013) could be replicated in the Spanish sample. These dimensions were Modelling, Feedback, Communication, Monitoring, Non-commitment to safety, and Limits. The Messages dimension did not emerge as a consistent and valid factor in the present study, either for the young drivers or for their parents. Rather, the items originally corresponding to Messages were spread across different factors, particularly Communication. These results are similar to those found by Carpentier et al. (2014) in which most items from Messages were absorbed by the Communication factor. As Messages relates to parents verbalising their own opinions on the importance of road safety, it makes theoretical sense that the items are also reflecting the level of communication, a dimension which involves parent-children discussions in which parents express their own views on safe driving. Past research has also shown that these dimensions are strongly correlated (Poó et al., 2023; Taubman – Ben-Ari & Katz – Ben-Ami, 2013). In the present study, the fact that three items from Messages had a clear association with Communication (i.e., strong cross-loadings onto this factor), particularly in the sample of parents, may suggest that Messages represents a facet of Communication. Clearly, more research is needed to bring clarity on the Messages factor, as the results across the studies have been inconsistent.

Even though the overall factor structure converged with the original FCRSS and all dimensions are composed of the items that correspond to the original factors in the FCRSS (except for two items from Messages that were reallocated onto the Communication factor in the FCRSS for parents), there are also some discrepancies. The most noticeable difference is the substantial reduction in the number of items, since only 34 items in the FCRSS for young drivers and 33 items in the FCRSS for parents were retained. Previous studies have also shown a significant reduction in the number of items. In particular, Carpentier et al. (2014) retained 36 items and Burns et al. (2020) retained 27 items out of the 54 items from the original scale. It is possible that whereas most of the dimensions of the FCRSS are generalisable across different countries, the items content is less so. In addition, some items proved to be poor indicators of the FCRSS dimensions among the young drivers but not among parents, and vice versa. Thus, it appears that the validity of some

Table 7
Pearson correlations between parents' and young drivers' FCRSS scores and the young drivers' Driving Styles.

MDSI/FCRSS		Modelling	Feedback	Communication	Monitoring	Non-commitment	Limits
Reckless	Parents	-0.36**	-0.09	-0.14**	-0.10	0.13*	-0.17**
	Children	-0.19**	-0.06	-0.10	-0.18**	0.23**	-0.24**
Anxious	Parents	-0.20**	-0.18**	-0.09	-0.02	0.17**	-0.10
	Children	-0.20**	-0.01	-0.13*	0.14*	0.18*	-0.03
Angry	Parents	-0.35**	-0.14**	-0.16**	-0.02	0.14**	-0.11*
	Children	-0.19**	-0.03	-0.10	-0.16*	0.09	-0.15*
Careful	Parents	0.39**	0.25**	0.36**	0.13*	-0.22**	0.26**
	Children	0.17*	0.26**	0.30**	0.13*	-0.30**	0.24**
Dissociative	Parents	-0.36**	-0.25**	-0.21**	-0.03	0.18**	-0.20**
	Children	-0.33**	-0.06	-0.14*	0.10	0.21**	-0.09
Distress Reduction	Parents	-0.14**	0.02	0.02	-0.08	-0.06	0.03
	Children	-0.020	-0.02	0.06	-0.24**	-0.06	-0.01

*$p < .05$. **$p < .01$. ***$p < .001$

FCRSS indicators is country- or sample-specific. To examine this issue in more depth and suggest potential refinements of the content scale for use in specific contexts or populations, a measurement invariance test using samples of drivers from different countries and samples of young drivers and their parents, would be worthwhile.

Reliability estimates revealed acceptable to excellent internal consistency reliability for all FCRSS dimensions for both the young drivers and their parents, except for Non-commitment to safety. The ordinal alpha for this factor was 0.61 in the sample of parents and 0.31 in the sample of young drivers, which is unacceptable. It should be noted that in the FCRSS for young drivers, the final Non-commitment factor was composed of two items. Since the magnitude of the alpha coefficient is influenced by different factors, including the number of items (Abdelmoula et al., 2015; Shevlin et al., 2000), it is possible that the small number of items explains the poor reliability for the Non-commitment factor in the FCRSS for young drivers. On the other hand, the Non-commitment factor contains both direct and reversed items, that is, items that are phrased in the same direction as the construct being measured ("My parents don't spend time teaching me how to drive safely") and items that are phrased in the opposite direction to the construct being measured ("My parents make it clear that driving safely is more important than getting somewhere on time"). While the use of reversed items is useful for controlling acquiescence responses, it can also lead to misresponse bias (i.e., inconsistency in responses to regular and reversed items; Weijters et al., 2010) and reduce the internal consistency of the scale due to lower item-total correlation (Dueber et al., 2022; Vigil-Colet et al., 2020). Thus, another reason that might account for the low reliability in the Non-commitment factor is the use of direct and reversed items. In any case, these possible explanations require further examination in future studies.

As expected, significant associations were found between various FCRSS dimensions and self-reported DS by the young drivers. Specifically, young drivers who perceived their parents as providing positive role models for safe driving, to enable more open communication, to convey explicitly messages regarding safe driving, to provide more feedback, to supervise their driving more closely and to set and maintain clear limits, reported more careful driving and less reckless, aggressive, dissociative and anxious driving. On the other hand, drivers who perceived their parents to be less committed to safety reported more reckless, aggressive, dissociative and anxious driving, and less careful driving. A similar pattern of results was found between parents' FCRSS scores and their young children's DS, except for Monitoring and the anxious driving style. While no significant associations emerged between the anxious driving style of the young drivers and the parents' own perception of monitoring of their children's driving, a significant positive association was found when Monitoring was assessed through the perception of the young drivers. Although this finding is somewhat counterintuitive, it is not entirely surprising. Indeed, Burns et al. (2020) found that higher levels of parents' Monitoring, as perceived by the young driver, predicted higher levels of negative emotionality while driving. It may be that higher levels of monitoring are perceived negatively by the young drivers, specifically for novice teen drivers, and lead to negative emotions while driving, such as anxiety. A further argument supporting this idea is the negative association between Monitoring and distress-reduction driving style, meaning that young drivers who perceive greater monitoring are less able to relax and engage in activities aimed at reducing stress while driving. Interestingly, Monitoring was also positively associated with careful driving. This double-edged effect of Monitoring on driving is another issue that deserves further attention in future studies. On the whole, the findings are in line with previous FRCSS studies (Poó et al., 2023; Taubman – Ben-Ari and Katz – Ben-Ami, 2013; Taubman – Ben-Ari, 2015) and with the broader literature showing a positive impact of parental involvement on the safe driving of their young children (Beck et al., 2006; Ferguson et al., 2001; Simons-Morton & Ouimet, 2006, Yang et al., 2013).

The examination of FCRSS by sex indicated significant differences between mothers and fathers, largely consistent with our hypothesis. As predicted, mothers perceived themselves to provide more positive role models for their children, to support their safe driving by encouraging feedback, to engage in more open discussions with their children regarding driving and to monitor their driving more closely, compared to fathers. These findings are in agreement with the results of Taubman – Ben-Ari (2015) and with previous literature showing women's greater emphasis on safe driving attitudes and behaviour as compared to men (Liu et al., 2016; Taubman – Ben-Ari & Yehiel, 2012). Contrary to our hypothesis, no significant differences were found between young men and young women. However, it is important to note that previous findings on this issue have been inconsistent, with some studies showing significant differences between young male and young female drivers (Poó et al., 2023; Taubman – Ben-Ari & Katz – Ben-Ami, 2013) and others not (Burns et al., 2020). Clearly, further research on this issue is needed.

4.1. Conclusion

Taken together, the results of this study support the validity and reliability of the FCRSS in Spain. Having a valid and reliable measure of FCRS has many implications for practice. The Family Climate for Road Safety Scale measures the quality of the parent and child relationship. The assessment of not only the parents' DS, but also of their forms of control, and the parenting practices with respect to driving may help detect their children's susceptibility to risky driving. The results of this screening could help make parents aware of their family's driving styles. This knowledge may be used to plan interventions and training programs that reduce the risk that parents and children assume while driving and, as a result, decrease expected road accidents.

4.2. Limitations and suggestions for future research

There are certain limitations of the present investigation that should be acknowledged. First, the sample was relatively small and selected by convenience. It would therefore be of value to attempt to replicate the findings in larger samples. Second, some of the FCRSS dimensions had lower reliabilities, particularly Non-commitment, which should be taken into account when interpreting their associations with DS. To this end, it would be beneficial to add items, preferably direct items, in order to increase the reliability of the factor examination of the surprising results found in this study, especially those regarding the positive association between Monitoring with both anxious and careful driving, is warranted. Future studies might investigate this issue by examining the conditions under which Monitoring can promote anxiety rather than careful and well-adjusted behaviour on the road. Fourth, it would be valuable in future research to examine associations between FCRSS and other driving variables not addressed in this study, such as young drivers' risky attitude, risk perception and driving-related self-efficacy.

Despite the limitations, the current study confirms the FCRSS as an appropriate assessment tool for examining the road safety climate among Spanish families. It also provides an adequate linguistic and psychometrically adapted version to Spanish drivers that, hopefully, will stimulate research on this issue in Spain, where studies are currently lacking. It could also be used in cross-cultural research to assess how the relation between FCRS and youngsters' driving is influenced by culture.

CRediT authorship contribution statement

Pablo Doncel: Data curation, Methodology, Writing – review & editing. **Mario A. Trógolo:** Methodology, Writing – review & editing. **Candida Castro:** Conceptualization, Investigation, Writing – review & editing, Supervision, Funding acquisition. **Ruben D. Ledesma:** . **Orit Taubman – Ben-Ari:** Conceptualization, Writing – review & editing, Supervision. **Maria-Teresa Blanch:** Investigation. **Jose-Luis Padilla:** Conceptualization, Investigation, Writing – review & editing,

Supervision.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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Appendix I. FCRS Scale-Spain (Parents' version)

Instructions: Different families have different attitudes to driving and even members of the same family may have different opinions and feelings around driving. We would like to know your opinion and feelings about driving. There are no right or wrong answers and we are only interested in your personal opinion. For each of the following sentences, mark your response with a cross against the number that best reflects your answer.

Instrucciones: Familias distintas tienen actitudes diferentes acerca de la conducción, y las personas aunque sean miembros de una misma familia tienen opiniones y sentimientos distintos hacia la conducción. Queremos saber su opinión y sentimientos acerca de la conducción. No hay respuestas correctas e incorrectas y solo nos interesa su opinión personal. Para cada una de las siguientes frases, marque su respuesta haciendo una cruz (X) sobre el número que mejor refleja su respuesta.

1 = *En absoluto* Not at all, 2 = *Un poco* A little, 3 = *Moderadamente* Moderately, 4 = *Bastante* Quite a lot, 5 = *Mucho* Very much.

Factor	Spanish adaptation item	Original FCRSS items
Modelado/ Modelling	1. "Programo bien el tiempo de forma que luego no tengo que ir con prisas mientras conduzco."	1. "I plan my time well so I won't be pressed for time when I'm driving".
	5. "Doy ejemplo obedeciendo las normas de tráfico."	5. "I set an example by obeying traffic laws."
	14. "Sólo cumplo las normas de tráfico para evitar ser pillado/a."	14. "I only follow the rules for safe driving because I don't want to get caught."
	19. "Conduzco de forma segura incluso cuando tengo prisa."	19. "I drive safely even when I'm in a hurry."
	29. "Soy un modelo de conducir de forma segura."	29. "I serve as a role model for safe driving."
	38. "Nuestra familia se toma muy en serio cualquier infracción de tráfico, incluso aunque no ocasione un accidente."	38. "Our family takes every traffic violation very seriously, even when it doesn't result in a crash."
	49. "Cumplo las normas de circulación aunque esté cansado/a o me sienta estresado/a."	49. "I obey the traffic laws even when I'm tired or feeling stressed."
Retroalimentación/ Feedback	13. "Alabo a mi hijo/a cuando conduce de forma segura y prudente."	13. "I praise my son/daughter when they drive safely and carefully."
	25. "Felicito a mi hijo/a por conducir de forma segura."	25. "I compliment my son/daughter for driving safely."
	34. "Animo y aplaudo a mi hijo/a cuando veo que se esfuerza en conducir con seguridad."	34. "I encourage my son/daughter and applaud them when I see they make sure to drive safely."
	48. "En nuestra familia, siempre que nuestro/a hijo/a conduce de forma segura reaccionamos de forma positiva."	48. "In our family, we give positive feedback whenever we see our son/daughter drives safely."
Comunicación/ Communication	2. "Explico a mi hijo/a cómo anticipar posibles problemas en la carretera antes de que ocurran."	2. "I teach my son/daughter how to anticipate potential problems on the road before they occur."
	3. "En nuestra familia se habla abiertamente de errores o de accidentes que hemos estado a punto de tener en la carretera para que podamos aprender de ellos."	3. "In our family we talk openly about mistakes on the road or near accidents so we can learn from them."
	7. "En nuestra familia se habla abiertamente de todo lo relacionado con la conducción."	7. "In our family we talk openly about anything related to driving."
	32. "Hablamos con nuestro/a hijo/a sobre riesgos potenciales en la carretera."	32. "We talk to our son/daughter about possible hazards on the road."
	45. "En casa hablamos sobre cómo prevenir o evitar situaciones peligrosas en la carretera."	45. "We talk at home about how to prevent or avoid dangerous situations on the road."
	50. "Nuestro/a hijo/a nos cuenta las situaciones peligrosas que le han sucedido en la carretera."	50. "Our son/daughter tells us about dangerous situations they've been in on the road."
	4. "Decimos a nuestro hijo/a cuando corre riesgos innecesarios en la carretera."	4. "We tell our son/daughter when they take unnecessary risks on the road."
	15. "Le decimos a nuestro/a hijo/a cuando pensamos que conduce de forma peligrosa."	15. "We tell our son/daughter when we think they are driving dangerously."
Supervisión/ Monitoring	6. "Siempre que nuestro hijo/a coge el coche, tiene que llamarnos para decir si va a llegar tarde."	6. "Whenever our son/daughter takes the car, they have to call and tell us if they are going to be late."
	12. "Siempre que nuestro hijo/a coge el coche, tiene que decirnos a dónde va."	12. "Whenever our son/daughter takes the car, they have to tell us where they are going."
	17. "Nuestro/a hijo/a tiene que conseguir nuestro permiso siempre que quiere salir con el coche."	17. "Our son/daughter has to get our permission every time they want to go out in the car."
	20. "Siempre que nuestro/a hijo/a coge el coche, tiene que llamarnos si cambia de planes y va a un sitio diferente al planeado."	20. "Whenever our son/daughter takes the car, they have to call and tell us if there's a change in where they are going."
	24. "Siempre que nuestro/a hijo/a lleva el coche, no importa donde vaya, tiene que decirnos con quién va."	24. "Whenever our son/daughter takes the car, they have to tell us who they are taking with them wherever they go."
	52. "Siempre que nuestro/a hijo/a coge el coche tiene que decirnos cuándo llegará a casa."	52. "Whenever our son/daughter takes the car, they have to tell us when they'll be home."

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Factor	Spanish adaptation item	Original FCRSS items
Falta de compromiso/ Non-commitment	28. "No dedicamos tiempo a enseñar a nuestro/a hijo/a cómo conducir de forma segura."	28. "As parents, we don't spend time teaching our son/daughter how to drive safely."
	39. "En nuestra familia, sólo nos preocuparíamos de si conducimos de forma segura si hubiese ocurrido un accidente."	39. "In our family, we will only pay attention to whether someone is driving safely if something like a car crash happens."
	40. "A los miembros de mi familia no les gusta que alguien se queje de que no conducen de forma segura."	40. "The people in my family don't like it if someone complains that they're not driving safely."
	43. "No prestamos atención cuando nuestro/a hijo/a conduce de forma arriesgada."	43. "We ignore it when our son/daughter drives dangerously."
Límites/ Limits	18. "No permitiríamos a nuestro/a hijo/a coger el coche si condujera de forma imprudente, aunque eso nos facilitara la vida (por ejemplo, porque podría hacer la compra o recoger a alguien)."	18. "As parents, we wouldn't let our son/daughter take the car if they drove recklessly, even if it would make it easier for us if they drove (to go to the store, to pick someone up)."
	26. "Existe un acuerdo implícito (no escrito) entre nuestro/a hijo/a y nosotros para que conduzca de forma segura."	26. "There's an unwritten contract between us and our son/daughter about driving safely."
	31. "Si nos enteráramos de que nuestro/a hijo/a no conduce de forma segura, le impondríamos límites en el uso del coche."	31. "If we found out our son/daughter wasn't driving safely, we would impose limits on their driving."
	42. "Dejamos claro a nuestro/a hijo/a que si no cumple las normas de circulación restringiremos su uso del coche."	42. "We made it clear that if our son/daughter didn't obey the traffic regulations we would restrict their driving."
	44. "Dejamos a nuestro/a hijo/a coger el coche con mayor frecuencia cuando pensamos que conduce con seguridad."	44. "We let our son/daughter take the car more often when we feel they drive safely."

Appendix II. FCRS Scale- Spain (Children's version)

Instructions: Different families have different attitudes to driving and even members of the same family may have different opinions and feelings around driving. We would like to know your opinion and feelings about driving. There are no right or wrong answers and we are only interested in your personal opinion. For each of the following sentences, mark your response with a cross against the number that best reflects your answer.

Instrucciones: *Familias distintas tienen actitudes diferentes acerca de la conducción, y las personas aunque sean miembros de una misma familia tienen opiniones y sentimientos distintos hacia la conducción. Queremos saber su opinión y sentimientos acerca de la conducción. No hay respuestas correctas e incorrectas y solo nos interesa su opinión personal. Para cada una de las siguientes frases, marque su respuesta haciendo una cruz (X) sobre el número que mejor refleja su respuesta.*

1 = *En absoluto* Not at all, 2 = *Un poco* A little, 3 = *Moderadamente* Moderately, 4 = *Bastante* Quite a lot, 5 = *Mucho* Very much.

Factor	Spanish adaptation item*	Original FCRSS items
Modelado/ Modelling	1. "Mis padres programan bien el tiempo de forma que luego no tengan que ir con prisas mientras conducen."	1. "My parents plan their time well so they won't be pressed for time when they're driving."
	5. "Mis padres me dan ejemplo obedeciendo las normas de circulación."	6. "My parents set an example by obeying traffic laws."
	14. "Mis padres sólo cumplen las normas de circulación para evitar ser pillados."	15. "My parents only follow the rules for safe driving because they don't want to get caught."
	19. "Mis padres conducen de forma segura incluso cuando tienen prisa."	20. "My parents drive safely even when they're in a hurry."
	23. "Mis padres no están muy comprometidos con el tema de la seguridad vial."	24. "My parents aren't very committed to the issue of safe driving."
	29. "Mis padres son un modelo de conducir de forma segura."	30. "My parents serve as role models for safe driving."
	30. "Mis padres hablan sobre conducir de forma segura pero ellos mismos no conducen de forma tan segura."	31. "My parents talk about safe driving, but they don't drive so safely themselves."
	38. "Mis padres se toman muy en serio cualquier infracción de tráfico, incluso aunque no ocasione un accidente."	39. "My parents take every traffic violation very seriously, even when it doesn't result in a crash."
	49. "Mis padres cumplen las normas de circulación aunque estén cansados o se sientan estresados."	50. "My parents obey the traffic laws even when they're tired or feeling stressed."
Retroalimentación/ Feedback	13. "Mis padres me alaban cuando conduzco de forma segura y prudente."	14. "My parents praise me when I drive safely and carefully."
	25. "Mis padres me felicitan por conducir de forma segura."	26. "My parents compliment me for driving safely."
	34. "Mis padres me animan y aplauden cuando ven que me esfuerzo en conducir con seguridad."	35. "My parents encourage me and applaud me when they see I make sure to drive safely."
	48. "Siempre que mis padres me ven conduciendo de forma segura reaccionan de forma positiva."	49. "I get positive feedback from my parents whenever they see me drive safely."
	53. "Siento que mis padres están orgullosos de mi cuando conduzco de forma segura."	53. "I feel that my parents are proud of me when I drive safely."
Comunicación/ Communication	2. "Mis padres me explican cómo anticipar posibles problemas en la carretera antes de que ocurran."	2. "My parents teach me how to anticipate potential problems on the road before they occur."
	3. "En mi familia se habla abiertamente de errores o de accidentes que hemos estado a punto de tener en la carretera para que pueda aprender de ellos."	4. "In my family we talk openly about mistakes on the road or near accidents so I can learn from them."
	7. "En mi familia se habla abiertamente de todo lo relacionado con la conducción."	8. "In my family we talk openly about anything related to driving."
	32. "Mis padres hablan conmigo sobre riesgos potenciales en la carretera."	33. "My parents talk to me about possible hazards on the road."
	33. "Participo en la elaboración del acuerdo familiar sobre mi uso del coche."	34. "I share in framing the family contract about my driving."
	35. "Puedo hablar abiertamente con mis padres sobre posibles situaciones al conducir."	36. "I can talk freely with my parents about different driving situations."
	45. "En casa hablamos sobre cómo prevenir o evitar situaciones peligrosas en la carretera."	46. "We talk at home about how to prevent or avoid dangerous situations on the road."
	50. "Les cuento a mis padres las situaciones peligrosas que me han sucedido en la carretera."	51. "I tell my parents about dangerous situations I've been in on the road."
Supervisión/ Monitoring	6. 2Siempre que cojo el coche tengo que llamar a mis padres para decirles si voy a llegar tarde."	7. "Whenever I take the car, I have to call my parents and tell them if I'm going to be late."
	12. "Siempre que cojo el coche tengo que decir a mis padres a dónde voy."	13. "Whenever I take the car, I have to tell my parents where I'm going."

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Factor	Spanish adaptation item*	Original FCRSS items
	17. "Tengo que conseguir el permiso de mis padres siempre que quiero salir con el coche." 20. "Cuando cojo el coche, siempre tengo que llamar a mis padres si cambio de planes y voy a un sitio diferente al planeado." 24. "Siempre que llevo el coche, no importa donde vaya, tengo que decir a mis padres con quién voy." 52. "Siempre que cojo el coche tengo que decir a mis padres cuando llegaré a casa."	18. "I have to get my parents' permission every time I want to go out in the car." 21. "Whenever I take the car, I have to call my parents and tell them if there's a change in where I'm going." 25. "Whenever I take the car, I have to tell my parents who I'm taking with me wherever I go. 54. "Whenever I take the car, I have to tell my parents when I'll be home.
Falta de compromiso/ Non-commitment	11. "A mis padres les importa mucho que conduzca de forma segura." 51. "Mis padres dejaron claro que es más importante conducir de forma segura que llegar a un lugar a tiempo."	12. "My parents really care that I drive safely." 52. "My parents make it clear that driving safely is more important than getting somewhere on time."
Límites/ Limits	18. "Mis padres no me dejarían coger el coche si condujera de forma imprudente aunque eso les facilitara la vida (por ejemplo, porque podría hacer la compra o recoger a alguien)." 31. "Si mis padres se enteraran de que no conduzco de forma segura me impondrían límites en el uso del coche." 42. "Mis padres me dejaron claro que si no cumplía las normas de circulación restringirían mi uso del coche."	19. "My parents wouldn't let me take the car if I drove recklessly, even if it would make it easier for them if I drove (to go to the store, to pick someone up)." 32. "If my parents found out I wasn't driving safely, they would impose limits on my driving." 43. "My parents made it clear to me that if I didn't obey the traffic regulations they would restrict my driving."

*Numeration between the original scale and adapted scale was changed so it matched with FCRSS-Parents numeration.

Appendix III. Standardised factor loadings for the original 52-item 7-factor ESEM representation of the FCRSS for parents

Item	Modelling	Feedback	Communication	Monitoring	Non-commitment	Messages	Limits
1	**0.44*****	-0.17**	0.23***	0.09	-0.03	0.14*	-0.13
5	**0.70*****	0.04	0.12**	0.11*	-0.00	0.04	-0.12*
14	**-0.67*****	-0.13*	0.14*	0.01	0.23***	0.09	0.17*
19	**0.56*****	0.03	-0.01	0.06	0.05	-0.06	0.24**
22	**-0.11**	-0.10	-0.04	0.07	0.27**	0.19*	0.11
23	**0.05**	0.16*	-0.19*	-0.09	0.49**	0.46**	-0.06
29	**0.47*****	0.05	0.11*	-0.03	0.16*	-0.19*	0.17
30	**-0.38*****	0.02	0.08	0.01	0.32**	0.33*	-0.03
38	**0.39*****	0.07	0.22***	0.12**	-0.10	0.09	0.18*
46	**0.01**	0.06	0.24***	0.12*	-0.27**	0.19	0.41**
49	**0.59*****	-0.01	0.08	0.09	-0.08	0.31**	0.09
13	0.11*	**0.70*****	0.01	0.03	-0.04	-0.02	-0.02
25	-0.05	**0.92*****	0.07	0.01	0.07	-0.11*	-0.01
34	-0.01	**0.84*****	0.12**	0.02	0.05	-0.03	-0.02
48	-0.11	**0.61*****	0.21***	0.12**	-0.16	0.26***	0.04
2	0.20***	-0.02	**0.67*****	0.04	0.11*	-0.00	-0.14**
3	0.12*	0.08	**0.78*****	0.03	0.01	-0.01	-0.20***
7	0.07	-0.02	**0.72*****	0.02	-0.09	-0.12	0.02
32	0.04	0.35***	**0.44*****	0.11**	0.06	-0.06	0.12
33	0.19**	0.07	**0.29*****	0.01	0.34***	-0.28**	0.40**
35	0.05	0.29***	**0.24*****	-0.15**	-0.19***	0.01	0.28***
37	0.07	0.19***	**0.31*****	0.06	-0.16*	0.16	0.31***
45	0.04	0.18***	**0.55*****	0.09*	0.00	0.04	0.07
50	-0.17**	0.20***	**0.43*****	0.02	-0.20**	0.13	0.15
6	-0.04	0.08	0.12*	**0.72*****	-0.07	0.02	-0.09
12	0.04	-0.03	-0.10*	**0.86*****	-0.08	-0.03	0.02
17	-0.06	-0.10*	-0.02	**0.75*****	-0.05	0.01	0.13**
20	0.14**	0.01	-0.09	**0.78*****	-0.05	-0.05	0.02
24	0.10*	-0.05	-0.07	**0.77*****	0.21***	-0.03	0.11*
52	-0.03	0.12**	-0.03	**0.82*****	-0.05	0.08	-0.07
9	-0.44***	-0.12	0.08	0.02	**0.42*****	-0.01	0.28***
21	-0.38***	-0.23**	0.27***	0.13*	**0.28*****	0.02	0.03
28	0.05	-0.02	-0.15*	0.07	**0.35****	0.29*	-0.07
39	-0.21**	-0.08	0.02	-0.07	**0.60*****	0.01	0.08
40	0.09	-0.09	0.22***	-0.13**	**0.41*****	0.14	0.13
41	0.14	-0.09	0.14*	-0.07	**-0.14**	0.29	0.42**
43	0.08	0.14*	-0.15**	-0.16**	**0.69*****	0.17	-0.10
51	0.20**	0.13*	0.19**	0.05	**-0.32****	0.28	0.20
4	0.19**	-0.01	0.66***	0.08	0.01	**-0.02**	-0.08
8	0.12*	0.07	0.40***	0.11*	-0.07	**-0.13**	0.13
10	0.11	0.05	-0.21**	0.03	0.33*	**0.37***	-0.12
11	0.18*	0.22**	-0.01	-0.05	-0.30**	**0.20**	0.31**
15	0.06	0.13*	0.35***	0.06	-0.05	**0.03**	0.23***
27	0.41***	0.25***	-0.01	-0.14**	-0.14*	**-0.10**	0.40***
36	-0.33***	0.04	0.08	0.15*	0.48***	**-0.00**	-0.12
47	-0.10	0.15*	0.21**	-0.07	0.24**	**0.13**	-0.01
16	0.38***	0.16**	0.25***	0.09*	0.03	-0.09	**0.15***
18	-0.12	0.16*	-0.06	0.16**	-0.13*	-0.06	**0.30*****
26	0.11	0.07	0.09	0.23***	0.26***	-0.17*	**0.52*****

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Item	Modelling	Feedback	Communication	Monitoring	Non-commitment	Messages	Limits
31	0.14*	0.19**	-0.05	0.15**	-0.07	-0.06	**0.42****
42	0.09	0.19**	0.07	0.19***	-0.08	0.10	**0.32****
44	0.03	-0.00	0.28***	-0.06	-0.09	0.27	**0.45****

**p <.05; ** p <.01; *** p <.001*

Note: Target factor loadings are in bold

Appendix IV. Standardised factor loadings for the original 54-item 7-factor ESEM representation of the FCRSS for young drivers

Item	Modelling	Feedback	Communication	Monitoring	Non-commitment	Messages	Limits
1	**0.42****	-0.08	0.24**	0.14*	−0.15	-0.23*	0.07
5	**0.81****	-0.07	0.16*	0.00	0.10	-0.01	-0.03
14	**-0.62****	-0.05	0.33***	0.09	0.10	-0.13	0.06
19	**0.76****	0.03	0.04	0.02	0.03	-0.08	0.11
22	**-0.20***	-0.33***	0.01	0.10	0.20	-0.32	0.50***
23	**-0.43****	-0.07	0.12	-0.09	0.20	-0.12	0.00
29	**0.72****	0.01	0.22***	-0.05	-0.05	-0.01	0.05
30	**-0.68****	0.02	-0.11*	0.01	0.18	-0.06	0.15*
38	**0.33****	0.02	0.20*	0.01	0.10	0.28*	0.29**
46	**-0.02**	0.08	0.19	-0.14*	-0.52***	0.17	0.39**
49	**0.73****	0.00	0.10	-0.05	-0.13	-0.09	0.21***
13	-0.18***	**0.85****	-0.08	0.08	-0.17	-0.00	-0.06
25	0.02	**0.92****	-0.02	0.05	-0.01	-0.08	-0.03
34	-0.02	**0.82****	0.12*	0.02	0.10	-0.12	0.08
48	-0.06	**0.77****	0.10	-0.00	0.01	-0.09	0.05
53	0.09	**0.64****	0.23***	-0.00	-0.04	0.02	-0.07
2	0.16**	0.11*	**0.53****	0.11*	0.11	0.32***	-0.07
3	-0.00	0.03	**0.79****	0.11**	-0.00	0.13*	-0.19***
7	0.01	-0.06	**0.58****	0.10	-0.26*	0.02	0.06
32	0.17*	0.22***	**0.37****	0.13**	0.22**	0.09	0.24**
33	0.12	0.13	**0.43****	-0.00	0.27	-0.02	0.20*
35	0.07	0.11	**0.56****	-0.04	-0.34***	-0.01	-0.15
37	0.05	0.41***	**0.22****	0.06	0.03	0.30***	0.25**
45	0.13*	0.19***	**0.64****	0.01	0.19*	0.08	0.03
50	0.01	0.07	**0.54****	-0.05	-0.20	-0.02	-0.05
54	0.11	0.20**	0.19*	**0.15***	0.08	0.25*	0.23**
6	-0.03	-0.04	0.17**	**0.85****	-0.11	-0.03	-0.16*
12	-0.11**	-0.03	-0.10*	**0.91****	-0.09*	0.03	0.08
17	-0.06	0.01	-0.11	**0.72****	0.18*	0.18	0.28**
20	0.02	0.03	0.04	**0.89****	-0.02	-0.12*	-0.04
24	-0.05	0.06	-0.08	**0.75****	0.13*	-0.01	0.08
52	0.08	0.00	0.06	**0.90****	-0.01	-0.06	-0.14**
9	-0.67***	0.04	0.30***	0.03	**0.10**	-0.06	-0.10
21	-0.29***	0.01	0.15	0.24***	**0.24**	-0.27	0.09
28	-0.26***	-0.14*	0.07	-0.16*	**-0.01**	-0.08	-0.17*
39	-0.06	-0.18*	0.09	0.04	**0.23**	-0.44**	-0.16*
40	-0.27***	-0.08	0.04	-0.06	**0.31**	-0.15	0.32***
41	-0.06	0.14*	0.29**	-0.20**	**-0.35****	0.08	0.19
43	-0.21**	-0.02	-0.040	-0.11	**0.39***	-0.23	-0.12
51	0.25***	0.17**	0.24**	0.04	**-0.37****	-0.07	0.27*
4	-0.03	-0.02	0.52***	0.09	0.17	**0.44****	-0.01
8	0.02	0.02	0.20	-0.02	-0.34	**-0.13**	0.25
10	0.13	0.10	0.08	-0.15*	0.33	**-0.41**	-0.16
11	0.25**	0.05	0.11	0.01	-0.47***	**0.05**	0.45***
15	-0.12*	-0.14	0.35***	0.05	-0.19	**0.57****	0.15*
27	0.38***	0.18**	0.10	0.04	-0.11	**0.10**	0.35***
36	-0.38***	0.01	0.17	-0.01	0.37*	**-0.12**	0.09
47	-0.58***	0.03	0.02	-0.09	0.23*	**0.01**	0.18*
16	0.18***	-0.11	0.25***	0.16**	-0.11	0.28**	**0.27****
18	-0.04	0.02	-0.10	0.22***	-0.16*	0.12	**0.52****
26	-0.01	0.30***	0.21**	0.11	-0.01	-0.20*	**0.27****
31	0.04	0.09	-0.13*	0.25***	-0.04	0.20**	**0.58****
42	0.13*	0.15**	0.08	0.16**	0.11	0.18	**0.49****
44	0.07	0.19**	0.18**	0.01	-0.24**	0.03	**0.23****

**p <.05; ** p <.01; *** p <.001*

Note: Target factor loadings are in bold

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