

Measured Effects of Path Investigation of Big Five Factor on Early Adolescents' Rebelliousness in Ibadan, Nigeria

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Abstract: The study sampled 200 early adolescents' (120 males and 80 females) rebelliousness using a developed and tested model that provided a causal explanation on Five-Factor Model of personality (neuroticism, extraversion, openness to expression, agreeableness and conscientiousness) and gender. Data collection was done through the use of 2 valid and reliable instruments (NEO Five-Factor Inventory = 0.83; Social Reactivity Scale = 0.72). The data were analyzed using multiple regression and path analysis in order to estimate the coefficient of structural equations of the hypothesized model. Results from the analysis indicated that the most meaningful causal model was tenable. And that the 6 predicting variables accounted for 33.5 (direct effect) and 66.5% (indirect effect) of the variability in the criterion. Although, the significant causal influence of the Five-Factor Model and gender investigated suggested that early adolescents' rebelliousness could be predicted using the variables, openness to expression and agreeableness have the most direct causal influence on early adolescents' rebelliousness. The implications of the findings for counselling, education and development of early adolescents were discussed.

Key words: Early adolescents, rebelliousness, five-factor model, Nigeria

INTRODUCTION

A good number of studies linking adolescents with rebelliousness have always been on late adolescence stage and in Europe and America (Apter, 1982; Griffin and McDermott, 1998). Till date, there has not been any known study on early adolescents' rebelliousness in Nigeria. Besides, what researchers have even investigated in Nigeria, Europe and America is mainly bullying among adolescents (Aremu and Oladosu, 2006; Espelage *et al.*, 2001; Olweus, 1993, 1979), psychology of conformity and obedience (McDavid and Harari, 1986) and physical aggression (Craig, 1998; Bjorkqvist, 1994). Amplifying this, Braman (1995) observes that rebelliousness or negativism as it is called in reversal theory is a relatively neglected psychological construct. McDermott (1988) notes that with the exception of the work of Gamson *et al.* (1982), a comparative little attention has been directed at some socio contextual conditions under which people could rebel. Wener (1982) emphasises the unwarranted lack of attention which rebelliousness has received in literature and he is of the opinion that negativism is currently the most neglected of the major personality

developments. From this conclusion, the primary purpose of the present study is to investigate early adolescents' rebelliousness using Big Five-Factor Model as a causal influence.

Rebelliousness according to Apter (1982) is wanting or feeling compelled to do something contrary to that required by some external agency. Apter (1982) remarks that the import of this definition is on the individual actor's self-perception and experience (rather than on a value judgment of an external observer) and on the necessary precondition of an external requirement. Balswick and Macrides (1975) define it as aggressive behaviour and being hostile. Braman (1982) describes it as being non-compliant and defiant. He further refers to children manifesting such a behaviour as oppositional children. In his submission, McDermott (1998) describes rebelliousness as a socially facilitated and learned disposition to respond to social influences in what can become a characteristic and cross-situationally consistent manner.

The foregoing definitions and descriptions of rebelliousness show some difficulties in arriving at an all-inclusive definition. The reason being that there is a wide

range of its (rebelliousness) behavioural forms and varied psychological functions, which it serves (Apter and Smith, 1976). Nevertheless, rebelliousness extends to all age groups. It is implicated in various etiology of psychological phenomena like disruptive behaviour in school (Rafky, 1979); expressive alienation (Stinchcombe, 1964) and obsessive-compulsive behaviour (Braman, 1995). In what looks like a good justification of been rebellious, Apter and Smith (1976) suggest that it serves a variety of functions like heightened of arousal, gaining independence and autonomy and as a means by which a reaction to an unreasonable requirement can be expressed. Reimer (1982) argues that being rebellious can be for fun. That is, for the pleasure of the moment and perhaps inner satisfaction the individual derives from doing so. It is therefore, a social problem.

From the foregoing review, it can be logically deduced that rebelliousness is not independent of personality domains. Adolescence being a stage laden with crises, cannot but be engulfed in rebelliousness. The period is characterised by accelerated physical and emotional growth, which more often than not predispose adolescents to rebelliousness.

Adolescence is often defined as a developmental transition between childhood and adulthood. This stage of development is characterised by physiological, cognitive, emotional and physical changes that affect negatively or positively on adolescents' wellbeing. In early and mid-adolescence, teens experience profound changes in their cognitive abilities. During this period, adolescents transit from concrete thinking, which focuses on immediate concerns, to formal operational thinking, the ability to think in the abstract and to construct hypotheses (Erikson, 1968). Adolescents also undergo profound changes in their emotions. These changes, according to Green and Palfrey (2002), may be erratic and unexplainable.

Adolescence has long been viewed as time of transition from childhood to adulthood. Generally, it is a time of exploration and identity formation, which is always, characterised by untoward behaviours not only among themselves, but also to significant others (parents, guardians and constituted authorities). At this period, Shaver (2003) notes that relationships with peers become increasingly important, while those with parents evolve into a more mature form, permitting greater responsibility and freedom for the adolescents. For some teens, however, adolescence is a period characterised by increased risk-taking, rebelliousness, norm violations and delinquencies of varying degrees. Affirming this, Gottfredson and Hirschi (1994) observe that violations of

constituted rules and norms begin to increase in early adolescence, peak in late adolescence and declines in adulthood. Thus, making early adolescence to be more risky.

The contexts of the review made so far shows that there are covert traits that predispose youngsters to rebelliousness. This indicates that personality traits can be used to explain rebelliousness. It is therefore, germane to exposit how personality domains influence rebelliousness in early adolescence.

Personality structure constitutes a fairly stable phenomenon in the life of an individual. Newman and Newman (1983) are of the opinion that personality has to do specifically with behaviours, thoughts, feelings and general life adjustment that are relatively stable overtime. Similarly, Phares (1991) remarks that it is that pattern of characteristic thoughts, feelings and behaviours that distinguish one person from another and that which persists overtime and situation. Mayer (1998) refers to it as a template of an individual's behaviour. McCrae and Costa (1997) hypothesise in the same direction. In sum, it is the totality of an individual's behaviour in a given context.

Several models of personality have been developed and used to explain human behaviours. The most recent being the Big Five or the Five-Factor Model (FFM). The Big 5 personality factor model is an empirically derived model of personality based on the trait work of Allport (1958), Cattell (1943) and Eysenck (1997). According to Stenberg (2001), Warren Norman first proposed the Big 5 traits in 1963. Thereafter, it was championed and popularised by other psychologists (Costa and McCrae, 1992, 1995; Digman, 1995; McCrae and Costa, 1997; McCrae and John, 1992; Peabody and Goldberg, 1989; Watson, 1989). This is increasingly well documented in literature.

In the Big Five-Factor, it is proposed that personality can be factored into 5 dimensions-neuroticism, extraversion, openness to experience, agreeableness and conscientiousness (McCrae and Costa, 1982, 1997; Hergenhahn and Olson, 1999). Hergenhahn and Olson (1999) also propose that every individual falls between two extremes of each of the dimension. This means that no individual is absolutely tied down to a particular trait in the Big Five Factor Model, nor an individual is exclusive of any of the factor. The understanding here is that any of the Five-factor is resident in every individual. McCrae and John (1992) then conclude that almost all the personality tests measure one or more of the 5 factors. For the purpose of clarity, each of the factors is briefly discussed in this study.

Neuroticism: It is sometimes reversed and called as emotional stability because it characterised negative traits. Neuroticism (N) plays a vital role in the contemporary factor models of personality. It refers to the tendency to experience negative affects such as fear, sadness, embarrassment, anger, tense and moodiness. It is a measure of affect and emotional control. Neuroticism is thought to be less central to social experiences (Funder and Dobroth, 1987). Bolger and Schilling (1991) suggest that individuals who are high in neuroticism are particularly sensitive to social stressors. That is, they are reactive and more easily bothered by stimuli in their environment. McCrae and John (1992) refer to neuroticism as negative affectivity or nervousness.

Extraversion: It is also called surgency and it encompasses traits like talkativeness, energy and assertiveness. According to Costa and McCrae (1992), extraversion (E) is the most socially relevant personality dimension. It is related to the quantity of social interactions. This means that warmth and positive feelings to significant others are central to extraversion. People with extraversion tend to be more physically and verbally active, adventurous, frank, assertive, sociable and talkative.

Openness: Openness (O) refers to how willing people are to make adjustments in accordance with new ideas or situations that confront them. It is a measure of depth, breadth and variability in a person's imagination and urge for experiences. Its dimension includes having wide interests and being imaginative and insightful when dealing with people. Individuals with a high openness to experience are liberal, novel and have broad interests.

Agreeableness: This is characterised by traits like sympathy, kindness and affection. Agreeableness is found to strongly predict prosocial and aggressive behaviours. Agreeableness (A) is the tendency to have faith in other people and being eager to help them. It is linked to altruism, nurturance, caring and emotional support.

Conscientiousness: It refers to the degree to which an individual pushes towards personal goals. Individuals with high conscientiousness (C) tend to be well organised, thorough and planful. The more conscientious a person is, the more competent, dutiful, orderly, responsible and thorough (Costa and McCrae, 1992).

Literature indicates that a number of studies have been conducted using Big Five-Factor Model on both children and adults and in countries like Austria, China, Germany, Israel, Japan and South Korea (Johnson and

Ostendorf, 1993; McCrae *et al.*, 1996; Noller *et al.*, 1987; Ostendorf and Angleitner, 1994; Wiggins and Trapnell, 1997). Costa and McCrae (1998) report that the Big Five-Factor traits appear to stick around throughout the entire life span, even up to the mid 90s, the highest ages that have been studied.

Overall, some of the traits have been reported to be associated with personal feelings of well-being, most especially openness to experience, agreeableness and extroversion (Magnus *et al.*, 1993; McCrae, 1996; McCrae and Costa, 1991). In another study, neuroticism is found to be associated with poor life adjustment. Magnus *et al.* (1993) also report that high scores on extraversion, especially the aspect that relates to positive emotions, predict positive mood in everyday life.

As a matter of emphasis on the rationality of the Five-Factor Model (FFM), especially in this study, del Barrio (2004) reports that, the Five-Factor Model is considered as the dominant paradigm in personality research. This suggests that the significance of the Five-Factor Model in research cannot be over emphasised. As a corollary to this, the 5 dimensions of personality in the 5-Factor Model have proved to be replicable over different theoretical frameworks using different instruments and with ratings obtained from different sources, a variety of samples and with a high degree of generality (Barrick and Mount, 1991; Conn and Ramanaiah, 1990; Costa and McCrae, 1998; Goldberg, 1990).

Gender influence on personality is well documented in literature. Maccoby and Jacklin (1974) conducted the first major review of research on sex-related differences in cognition, temperament and social behaviour in children and adults. They conclude that men are more assertive and less anxious than women are. Conversely, Feingold (1994) reports that women score lower than men on assertiveness do and higher on gregariousness (extraversion), anxiety, trust and tender-mindedness (nurturance). In a similar study, Lynn and Martin (1997) report that they are lower on the same traits. Reacting to this seeming research controversy, Costa *et al.* (2001) note that it is expected that clear gender differences would be found in specific facets of extraversion. They then submit that men should score higher on assertiveness and women on warmth.

Similarly, gender differences on traits related to neuroticism have been consistently reported, with women scoring higher than men (Lynn and Martin, 1997). For example, Nolen-Hoeksema (1987) report that women score higher in symptoms of depression. del Barrio *et al.* (1997), Gullone and Moore (2000) and Margalit and Eysenck (1990) affirm that adolescent girls show higher levels of neuroticism than boys. Although, the researchers'

submissions show that neuroticism cuts across ages in women, Wink and Helson's (1993) longitudinal study has revealed that women become less emotionally dependent and more competent with age; while in contrast, men start adulthood less dependent and more competent than women. While this controversy rages on, no study has really been age-specific like the current study as to gender differentials and influence in personality traits.

However, 2 classes of theories, biological and social psychological, have been used to explain gender differences in personality traits. The biological theories consider sex-related differences as arising from innate temperamental differences between the sexes, evolve by natural selection. According to Buss (1995), evolutionary psychology predicts that the sexes will differ in domains in which they have faced different adaptive problems throughout evolutionary history. On the other hand, Eagly (1987) explains that most gender differences in personality result from the adaptation of gender roles, which define appropriate conduct for men and women. That is, gender roles are shared expectations of men's and women's attributes and social behaviour and are internalised early in development. Based on this theoretical postulation, the objectives of the present study are contextualised. More importantly, there is no known study on the path influence of Big Five-Factor on early adolescents' rebelliousness in Nigeria.

The current study: Given the paucity of research on the 2 concepts in the current study-rebelliousness and Big Five-Factor as related to early adolescents in Nigeria, the goal of the study is to fill the research gap. To achieve this, the study was embarked upon with a view to investigating this area of knowledge. Secondly, to investigate the influence of the Big 5 personality domains (neuroticism, extraversion, openness to experience, agreeableness and conscientiousness) on early adolescents' rebelliousness, a non-conventional hypothesised model approach was adopted. The direct causal effects of the 5 factors and gender were measured on a broad spectrum with a view to identifying the most meaningful causal linkages among the dummy variables and early adolescents' rebelliousness. This, would not only enrich the theoretical postulations on Big Five-Factor and rebelliousness, it would also add to the empirical assertions and this time with a special reference to a special group of population, early adolescents and to Nigeria in particular.

From the foregoing and with the insights to the objectives of the study, it is assumed that the study's participants have traits of the Big Five-Factor and were also naturally prone to rebellious acts like not taking to

instructions from parents and significant others, obstinacy, strong-headedness and tendency not to conform. Based on these, the following research questions were answered in the study:

- What is the most meaningful causal model involving the Big Five-Factor, gender and early adolescents' rebelliousness?
- What are the directions and estimates of the strengths of the causal paths of the factors in the model?
- What are the direct and indirect effects of the factors on early adolescents' rebelliousness?
- What proportions of the total effects of the factors are (i) direct and (ii) indirect on the early adolescents' rebelliousness?
- What is the relative effect of the factors on early adolescents' rebelliousness?

MATERIALS AND METHODS

Participants: Participants in this study were randomly recruited from 4 public Junior Secondary Schools in Ibadan, the capital city of Oyo State, Nigeria during the second school term of 2005/2006 academic session. In Nigeria, there are 2 school terms every academic session. 200 Junior Secondary School 1 and 2 early adolescents (120 boys and 80 girls) who ranged between 10 and 13 years (Mean age = 11.34 years) participated in the study. The inclusion criteria for eligibility in the study were: return of properly filled consent forms; participants must not be suffering from emotional problems; they must not be truants and must have at least spent a term in the school.

Measures: The quantitative data gathering involve the use of questionnaire, NEO 5-Factor Inventory and Social Reactivity Scale.

Neo 5-factor inventory: It is a 60-item instrument developed by Costa and McCrae (1990). Items in the instrument represent each of the 5 personality domains. They are as follows: Neuroticism-I am not a worrier; Extraversion-I like to have a lot of people around me; Openness to experience-Once I find the right way to do something, I stick to it; Agreeableness-I try to be courteous to everyone I meet and Conscientiousness-I waste a lot of time before settling down to work. The response formats of the instrument are graded as follows: Strongly Agree = 5; Agree = 4; Neutral = 3; Disagree = 2 and Strongly Agree = 1. Costa and McCrae (1998) reported 0.87 as a convergent correlation coefficient on

the 5 personality domains measured by the instrument. In the current study, using split-half, a convergent value of 0.83 was observed.

Social reactivity scale: The Social Reactivity Scale (SRC) developed by is designed to measure the degree of rebelliousness. It is a 18-item instrument structured on 3-short phrase response formats (e.g., a = stop breaking the rule any further; b = go ahead and still break the rule? and c = not sure; a = rarely, b = often, c = not sure and a = yes often, b = no, hardly ever and c = not sure) depending on the structure of the statement-items (e.g., When you are told that you are breaking a rule (for example, ‘No Smoking’) is your first reaction to; If people are unkind to you, do you feel you should be..... and How often do others say that you are a difficult person?). The SRC had a test-retest reliability coefficient of 0.77 on British students. In the current study, a split-half reliability coefficient value of 0.72 is recorded on a normative sample of early school-going adolescents in Ibadan, Nigeria. A high score on the scale indicates a high negativistic dominant or rebellious dominant.

Demographic information: The demographic information of the participants was accessed by requiring them to provide information on a section preceding the 5-Factor instrument. The following demographic information was collected: gender, age and class. Of all these, it was only information on gender that was used as a causal dummy variable alongside neuroticism, extraversion, openness to experience, agreeableness and conscientiousness.

Procedure: The data collection took place during the school session in the classes of the respondents. Participants were each administered with copies of the 5-Factor and Social Reactivity Scale and were assured of confidentiality. Through the assistance of 2 research assistants and the classroom teachers, a convenient sample of students was made in each of the classes used. None of the students who consented to participate in the study and who turned up during questionnaire administration, refused to participate in the study. This gave the study a 100% success rate in the administration of the questionnaire.

RESULTS

In this study, the most meaningful causal model involving neuroticism, extraversion, openness to experience, agreeableness, conscientiousness, gender and rebelliousness among early adolescents is shown in

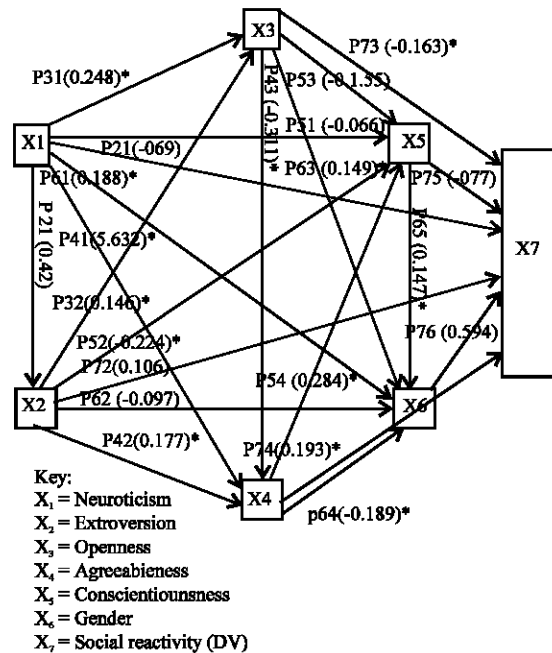


Fig. 1: Hypothesized recursive path model (2) paths of a six-variable system showing path coefficient and zero order correction

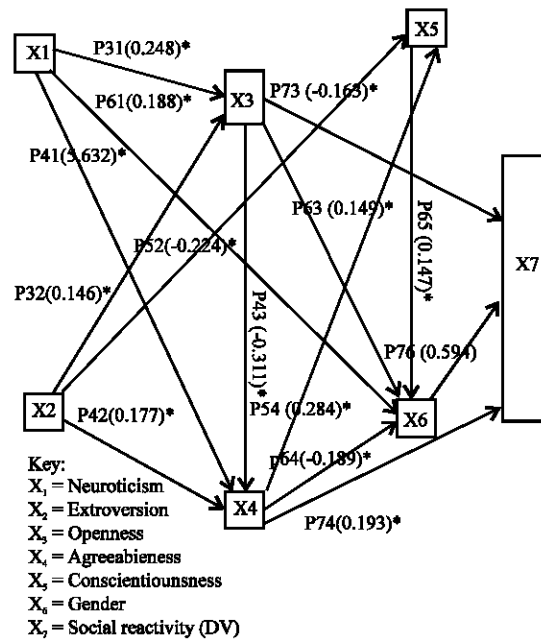


Fig. 2: Empirical model showing the 14 surviving paths

Fig. 2 (trimmed from Fig. 1 based on statistical significance and meaningfulness of the paths). From Fig. 2, it is shown that 14 out of 21 hypothesised paths met the criteria of significance at 0.05 level of significance. The more parsimonious model therefore, has 14 surviving paths.

Table 1: Correlation matrix for the model

Variables	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇
X ₁	1.000	0.092	0.091	0.003	0.125	0.020	0.556**
X ₂	-0.069	1.000	0.255**	0.486**	0.531**	-0.019	-0.184**
X ₃	-0.160	0.034	1.000	0.336**	0.358**	-0.211**	-0.046
X ₄	-0.163*	0.248	0.182*	10.000	0.509**	-0.098	0.099
X ₅	0.193*	0.398*	0.247*	0.349*	1.000	0.084	0.35
X ₆	-0.77	-0.047	-0.197*	-0.110	0.179*	1.000	145*
X ₇	0.594	0.191	-0.123	0.152	-0.172	0.210*	1.000

Correlation is significant at 0.05; Note: X₁ = Social Reactivity; X₂ = Neuroticism; X₃ = Extraversion; X₄ = Openness; X₅ = Agreeableness; X₆ = Conscientiousness; X₇ = Gender

The original correlations which were reproduced in the new path model are represented in Table 1.

The upper half of the Matrix harbours original correlations while the lower half contains computed correlations.

DISCUSSION

The results of this study provide compelling assertion that early adolescents' rebelliousness is a function of personality traits and gender ($F = 17.715$, $p < 0.05$). Specifically, 2 of the 5-factor's traits, openness to expression (0.163, $p < 0.05$) and agreeableness (0.193, $p < 0.05$) and gender (0.594, $p < 0.05$) correlate significantly to rebelliousness in early adolescents. Although, other traits in the measured Big 5-Factor interrelated to correlate significantly to rebelliousness, their effects are not as pronounced as openness to expression and agreeableness in this study. This is discussed in detail below.

The results of this study showed that out of 21 hypothesised paths (Fig. 1), 14 significant pathways survived in the model. The survived pathways were derived from the unreported structural equations. With this, the most meaningful causal model (Fig. 2) of the study was produced. The results showed that the proportion effects of the 6 independent variables on the dependent variable (not shown) are accounted for 33.5% of the total variance in early adolescents' rebelliousness. This statistically implied that the remaining 66.5% of the total variance of the dependent variable might be due to other factors not reported in the current study.

The results on the multivariate effects of the independent variables showed that all the variables could significantly predict rebelliousness in early adolescents. This empirical fact suggests that the Big 5-Factor and gender are a function of rebelliousness at early stage of adolescence. Although, studies on the Big 5-Factor have consistently confirmed the dominance of the 5 factors on human behaviour (Funder and Dobroth, 1987; Bolger and Schilling, 1991; McCrae *et al.*, 1996; Costa and McCrae, 1998) and reported the same across ages (Noller *et al.*, 1987; Ostendoif and Angleitner, 1994), no study till date

has ever been conducted on the causal influence of the Big 5-Factor and gender on early adolescents' rebelliousness. Nevertheless, the results in the present study further confirm the influence and potency of neuroticism, extraversion, openness to expression, agreeableness and conscientiousness on a somewhat different, but similarly related behaviour, rebelliousness.

Given that rebelliousness is generally perceived negatively and its consequential effects on the wellbeing of adolescents most especially at the early stage are more often than not catastrophe, it is suggestive that parents should make efforts in directing them accordingly. Evidence from this finding is an indication that the stage of early adolescence is equally stormy as in late adolescence. It is during early adolescence that rule-violating behaviour begins. Efforts should therefore, be made by parents, guardians and teachers to impact positively at this period.

The results of the direct and proportional magnitude of the causal variables on the dependent variable showed that gender had the most effective causal influence on early adolescents' rebelliousness. With a correlation coefficient of 0.556 (significant at 0.05) as shown in Table 1 and path causal coefficient of 0.594 (direct effect on rebelliousness), it is conclusive that gender of early adolescents significantly correlated with rebelliousness. This result confirms similar ones reported by Ellickson and McGuigan and Guerra. Whilst this result appears to be independent of the big 5-factor, 4 of the factors, agreeableness, neuroticism, openness to expression and conscientiousness have indirect influence on gender in the study. This shows that the affected personality traits indirectly influenced early adolescents' rebelliousness. The implication of this underscores the import of these personality traits in influencing early adolescents' rebelliousness. Thus, the significance influence of these traits can be explained in terms of how early adolescents would perceive rebelliousness. For instance, while agreeableness and conscientiousness are germane and akin to been rebellious because of adolescents' tendencies to 'challenge' constituted authorities (which is a 'normal' developmental process), openness to expression and conscientiousness in early adolescents

could be as a result of adventurism and risk-taking behaviours during adolescence. In the school setting in Nigeria (most especially in the cities), adolescents are faced with a lot of challenges like peer group pressures, gambling, truancy, betting and pornography that might provoke them to be more assertive. Incidentally, these are social vices that go with rebelliousness.

IMPLICATIONS

These findings have implications for theory, practice and future research. First, in view of the controversy that trails the Big 5-Factor Model, the present findings have further confirmed the relevance of the model. In essence, this has advanced the growing body of literature on the theory. Specifically, with these findings, an empirical basis is now suffice on the relatedness of the Big 5-Factor in the Nigerian setting (although limitedly). Through this, future researchers in Nigeria could take a cue from the study. Doing so, would confirm or dispute the outcomes of the present study. Second, school counsellors, educational and correctional psychologists and teachers would with the understanding of these findings further understand the challenges of dealing with early adolescents. On this assertion, it behooves theoreticians in counselling psychology to provide psychological packages through which early adolescents' rebelliousness could be managed successfully in the school.

LIMITATIONS AND FUTURE DIRECTIONS

Although, the present study contributes to the on-going knowledge base on the Big 5-Factor Model and rebelliousness of a population which is under researched in Nigeria, it should be recognised that good as these are, the study has some limitations. First, the study's population is limited to 200 early adolescents from 4 Junior Secondary Schools in Ibadan, Nigeria. This necessitates caution in generalising the findings of the study to the large population of early adolescents in Nigeria. Given this limitation, it is recommended that in view of the import of the present findings, a much larger population should be investigated in the future.

Second, while the present findings as reported in this study are themselves not exhaustive and could not be wholly taken as a true representation of early adolescents' perceived rebelliousness from the Big 5-Factor and gender point of assessment, it is so recommended that in view of the relevance of the findings to the development of adolescents, future research could as well be directed to adolescents generally. This suggests a potential area of research in the future.

CONCLUSION

In conclusion, it is shown in the present study that rebelliousness which could be influenced by the Big 5-Factor and gender could be managed if there is proper understanding of the personality of the early adolescents. This would not only make the stage to be stress-free and less stormy, it would also enable teachers and parents have appropriate insights into the personality traits that influence rebelliousness at this stage. Understanding and managing this, would put early adolescents into socially-sanctioned behaviour.

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