

Link between smoking and eysencks personality dimensions



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The investigation sets out to discover whether or not personality types such as extroversion-introversion, introduced by that of Carl Jung, play any role in individuals taking up smoking. Looking at which out of the two personality dimension are more prone to nicotine consumption and if either of the personality dimensions have a link to impulsiveness, in the context of smoking. The way this will be investigated is by means of questionnaire, comparing a non-smokers and smokers. There will be two separate questionnaires for each group where they will answer a range of questions to determine their personality dimension, smoking habits and personality aspects such as impulsivity. Results show there is no significance for either personality dimension being a factor in the initiation and maintenance of cigarette smoking there were also no links shown between that of the smokers and impulsivity, due to this secondary analysis were carried out excluding certain participants to see if this had an impact upon the output of results.

The latest statistics from 2007 show that around 9.5 million adults within Britain smoke cigarettes, It has been reported that 60-70% of UK smokers want to quit smoking however only a small percentage of these succeed, those who do succeed take 5 to 7 attempts before finally "kicking the habit". Smoking is highest between the ages of 20 to 24 (31%) and lowest in those aged 60 and over. This investigation sets out to find what type of personality, if any, smokers hold, specifically looking at two fundamental dimensions extroversion-introversion, and impulsivity as a trait. Those who are said to hold an extrovert personality tend to be outgoing, assertive, look for excitement and show concern for things externally such as the

environment, rather than their own thoughts and feelings. In contrast the typical Introvert is reserved, less outgoing and sociable; unlike the extrovert they are concerned with their own thoughts and feelings.

Smoking is widely investigated by psychologists; common factors linked to smoking include age, occupation and class. Eysenck and Eaves (1980) investigated biological links to smoking and found non-smokers and smokers differ in terms of their genetic characteristics. From this an investigation was carried out on 1000 participants into genetics being an underlying foundation to smoking, the investigation included monozygotic twins and dizygotic twins, classified into non-smokers and smokers. In terms of smoking status the concordance rate for the monozygotic twins was that of 74% and 50% for dizygotic twins. It was found that the concordance rate of smoking status for monozygotic twins was the same even if reared apart, suggesting that a determinant for smoking may be that of a genetic basis. It has also been suggested that the closer you are in relation to a smoker the more likely you are yourself to become a smoker. Matarazzo and Saslow (1960) formerly proposed correlations between relations and differences in behaviour suggest inheritance/genes to be a factor in the disparity of smoking habits thus affecting individual differences in personality.

Personality dimensions can be seen as an underlying foundation of whether or not an individual is likely to be a smoker or non-smoker. The dimensions of extroversion-introversion are used extensively in research into smoking with many correlations found, one being that there is a strong positive correlation between extroversion and smoking, in that if the individual is extrovert they are more likely to become a smoker. Eysenck, Tarrant, Woolf <https://assignbuster.com/link-between-smoking-and-eysencks-personality-dimensions/>

and England (1960) carried out an investigation on 2400 participants with a range of smoking levels from light to heavy smokers and also included pipe smokers, non-smokers and ex-smokers. A 31-item questionnaire was filled out by all participants covering all personality characteristics including that of extroversion and neuroticism. Eysenck found the extroversion score on the questionnaire increased for those who were heavy smokers and ex-smokers, whereas pipe smoker's scores swayed to that of introversion, finally concluding that smokers and non-smokers can therefore be defined by particular dimensions of personality. Smith (1970) studied smokers in Britain, Australia and the USA, it was found compared to the non-smokers, smokers possess an extrovert personality and there was no difference in this finding whether they were adolescent or adult, male or female. Further investigation carried out, supporting Smith, was a longitudinal study including 3000 participants a preliminary questionnaire was filled out in 1946 when all participants were 16 years of age, again completing the questionnaire at 20 and 25 years of age, providing information of their smoking habits. Findings proposed a strong likelihood that the individuals had begun smoking by the age of 25 with a link to the personality dimensions highlighted in the preliminary questionnaire, suggesting the more extrovert the individual the more likely they would become a smoker. (Cherry and Kiernan, 1976). Thus the assumption can be made that certain personality characteristics result in individuals developing a predisposition to smoking, however types of smoking may be linked to the personality "needs" of the person.

A factor researched to be linked to personality and smoking is the biological differences between that of extroverts and introverts in terms of their

cortical arousal. Eysenck and O'Connor (1979) hypothesised that extroverts would be characterised by having low cortical arousal and introverts high arousal. EEG readings support this hypothesis showing introverts to have lower amplitudes and higher alpha frequencies compared to extroverts who show higher amplitudes and lower alpha frequencies (Gales, Coles and Blaydon, 1969). Thus extroverts will experience under arousal and introverts over arousal this results in the individuals adapting their lifestyle in order to reinforce the levels of arousal they are experiencing seeking different satisfactions. Due to the low arousal experienced by extroverts they take part in certain events and habits that cause an increase in their cortical arousal and for introverts to lower their arousal, such as drugs, one being nicotine which has a primarily arousing effect. In terms of psychology nicotine has an effect largely on the arousal system for addiction effect on the reward and punishment systems. The greater the individual's extroversion is, the more likely they are to seek out optimal arousal, thus there has been found higher cigarette consumption within extroverts as nicotine causes the increase in arousal which they seek. Therefore extroverts are more likely to smoke due to the positive reinforcement created by the nicotine on our reward system, In contrast introverts are seen to smoke however due to their over arousal the depressant effect of nicotine on their cortical systems is of greater importance as they seek to lower their arousal. Heather Ashton and Rob Stepney support the above findings linked to that of the cortical arousal and reward systems concluding that the " Effects of nicotine on the brain and or behaviour along with individual difference, suggest smokers can manipulate their psychological state through the effects of smoking on arousal and reward punishment systems." (Ashton and <https://assignbuster.com/link-between-smoking-and-eysencks-personality-dimensions/>

Stepney, 1982). Pomerleau, Hariharan, Pomerleau, Cameron and Guthrie (1993) show support for Eysenck's above theory stating from findings that extroverts are more likely to smoke due to their sensitivity to nicotine and the reinforcing effects it has. Therefore it can be said that is the arousal levels experienced by the individual, due to their personality dimension, result in the individual to be more likely to end up smoking, particularly extroverts.

From the above research into extroversion-introversion and smoking, psychologists have been able to use findings to further investigation into finer areas of personality dimensions with focus on certain traits. It had been proposed that any drug users are more impulsive than non-users. Williams (1973) studied 400 senior students in terms of risk-taking and impulsivity and their relation to smoking. It was found that risk-taking in boys and girls were positively correlated to smoking however impulsivity was only found in boys. Schubert (1965) found smokers to be more thrill seeking and dislike routine compared to those who are non smokers. It can be said these two findings can be linked to that of the typical extrovert in terms of risk-taking and thrill seeking as the individual would have these traits in order to increase their state of arousal. Mitchell (1999) studied non-smokers and smokers investigating whether or not smokers were more impulsive than never smokers, using behavioural and personality measures of impulsiveness. It was found statistically on the majority of scales smokers were seen to be more impulsive than non smokers however there were no differences found between the two groups on behavioural tasks. Fields, Collins, Leraas and Reynolds (2009) proposed impulsiveness as being a

factor in the commencement of cigarette smoking. It was suggested that there are 3 specific aspects of impulsive behaviour (disinhibition, decision-making and carelessness) and smoking. Fields et al found more impulsive smokers in the adolescents on the measures of decision making and that those more impulsive in terms of carelessness and least in disinhibition were males. Doran, Cook, McChargue and Spring (2009) as support to previously discussed research believed smoking being linked to a number of personality traits, specifically impulsiveness, Doran et al also stated that smokers especially endorse in excessive levels of impulsivity, and those smokers who are more impulsive have greater issues when quitting. Using smoking cues and control cues an investigation was carried out on regular smokers to assess aspects of impulsivity such as sensation seeking and whether these are related to cue-induced cravings. It was found that there was a greater increase in craving for those smokers who were higher sensation seekers after being presented a smoking cue. Following on from previous findings Eysenck (1976) found a link between that of the personality dimensions extroversion and psychoticism and risky behaviours. It was concluded that drug taking often begins in that of groups of persons who are extroverted and impulsive sensation seekers. Rondina, Gorayeb and Botelho (2007) found a strong link between that of nicotine consumption and personality traits such as sensation seeking, which has previously been mentioned by Doran et al as an aspect of impulsivity. Individuals with high scores in this particular aspect have shown to have low levels of cortical arousal which can be linked back to Eysenck and Gale et al who discussed the levels of cortical arousal in extroversion and introversion, thus suggesting sensation seekers are in fact extrovert in personality therefore prone to nicotine consumption.

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Rondina et al also proposed the idea that impulsivity and sensation seeking can in fact be seen as a wider personality dimension joining the two together denominated impulsivity-sensation seeking supporting that of Eysenck's (1976) findings. Carton, Jouvent and Widlocher (1994) investigated male and female smokers compared to non-smokers and their sensation seeking. They proposed that disinhibition and experience seeking are aspects of sensation seeking, and sensation seeking is seen to be conjoined to the trait of impulsivity. They found higher levels of sensation seeking in male and female smokers compared to that of the non-smokers and females showing significantly higher levels of experience seeking than males. From this they furthered investigation looking into the relationship between motives for smoking, sensation seeking and nicotine dependency. Within females higher correlation was found between experience seeking, disinhibition and nicotine dependency compared to males, concluding that females with high experience seeking, compared to males, may be more prone to that of smoking. This research supports the findings of Rodina et al (2009) and Doran et al (2009) who suggest sensation seeking to be an aspect of the personality trait impulsivity. This research could also be linked to that of the findings of Eysenck et al (1979) and Gales et al (1969) as sensation seeking and experience seeking can be seen as a way to increase that or cortical arousal, linked to the extravert personality. Zuckerman (1969) suggested that nicotine holds many stimulant properties leading to the increase of cortical arousal thus appealing to those who are sensation seekers.

Zuckerman proposed that those with high levels of sensation seeking tend to participate in more risky activities, such as smoking as although a legal social behaviour health risks are high; it is this attitude towards risk that <https://assignbuster.com/link-between-smoking-and-eysencks-personality-dimensions/>

could explain the relationship between smoking and sensation seeking.

Concluding that sensation seeking is a trait to maintain the level of arousal that an individual seeks, linking to that of the extravert personality previously mentioned and consequently Carton et al (1994) being empirical evidence for this proposal. Doran, Cook, McChargue et al (2006) at an earlier date stated more impulsive smokers experience higher levels of negative affect compared to those who are less impulsive, nicotine acts as a greater means of relief from these negative affects. Thus for more impulsive smokers nicotine can be said to be a powerful negative reinforcer promoting nicotine dependency and as a result inhibits smoking cessation. It can be said impulsive individuals are more likely to turn to smoking in order to alleviate the negative affect they experience on average more than others. Support by Cooper, Agocha and Sheldon (2000) found that adolescents with high levels of impulsiveness are more likely than others to use alcohol to cope with negative affect. Hussong and Chassin (1994) concluded that impulsive adolescents had increased alcohol consumption on the days they reported elevated negative affect compared to those who were less impulsive. Negative affect increases for smokers during nicotine abstinence and it is suggested that negative affect is in fact the result of smoking (Wretter et al, 2000).

Although there is no strong evidence for a link between extroversion-introversion smokers and whether or not either are more impulsive, from the evidence gathered above it is suggested from the research into impulsivity and smokers, collected by Doran et al that those who are more impulsive smokers are so due to the fact that they experience negative affect thus

seeking stimulation for their level of arousal. Linking strongly to the proposed theory by Eysenck that those with an extrovert personality have low levels of arousal resulting in the individuals to take up smoking as nicotine provides the stimulation to increase their cortical arousal. It is from this that this investigation aims to find a correlation between that of smoking and extroversion-introversion and impulsivity in order to close the gap. Thus the first hypothesis proposed are as follows it is predicted there will be significantly more individuals with extrovert personality that are smokers compared to those individuals with introvert personality. A second hypothesis predicts that those who are extrovert smokers will be found to be more impulsive than those who are introvert smokers, other variables will in fact be tested alongside this including rebelliousness, extravagance and variety seeking. Thus a third hypothesis predicting that there will be significantly more extravert smokers found to have higher levels of rebelliousness, extravagance and variety seeking compared to that of introverts.

Method

PARTICIPANTS

The majority of participants used within the investigation will be that of undergraduate students aged between 18 years and 25, there will be a small minority of participants that will not attend university. The way participants will be selected is by means of self selection and altogether there will be 60 participants 30 smokers and 30 non-smokers. If possible the investigation will attempt to include a third group of participants including that of those

aged 60 plus with the intention to see if the personality dimension linked to smoking is different compared to the younger age.

DESIGN

The design used will be between-subject design as the participants will only be used once in one of the conditions. The independent variable within the study is whether or not the participant is a smoker or non-smoker. The investigation will include two dependant variables one being the measurement to determine whether or not the participants have that of an extrovert personality or introvert personality and also the level of impulsivity each participant possesses.

MATERIALS

Materials comprise of two questionnaires one for non-smokers, (Appendix A) and one for the smokers (Appendix B). The questionnaires consist of 4 short questionnaires assessing demographic information, smoking behaviour, extraversion-introversion and impulsivity. Section A asks general questions about their background, participants are to circle the relevant answer to them, adapted from a smoking clinic questionnaire used by the Smoking Cessation Services Research Network (SCSRN). The section also includes questions to determine whether or not they are extrovert personality, determined using a like-ert scale of 1 to 5, 1 being not like myself at all to 5 being very true of myself, section B again uses the same like-ert scale to determine whether or not participants show that of an introvert personality, both the extraversion and introversion questions were taken from the of the International Personality Item Pool. Section C has both yes no questions and <https://assignbuster.com/link-between-smoking-and-eysencks-personality-dimensions/>

like-ert scale questions, these all refer to the participants smoking behaviour and habits, in terms of the like-ert scale, 1 being no desire/strongly agree and 5 very strong desire/strongly disagree, this questionnaire was collaborated from smoking urges produced by that of Cox, Tiffany & Christen (2001). The final Section D, measures a variety of aspects linked to that of the personality dimensions such as impulsivity, to see if these show any correlation to personality and smoking. The control group questionnaire includes all sections except that of section c which refers to smoking habits.

PRODEDURE

Firstly all participants must sign a letter of consent explaining a brief outline of the investigation, it also states that they have the right to withdraw at anytime, if they feel uncomfortable with any part of the investigation that all data is anonymous and confidential and they are at no risk (Appendix C). Each participant then must fill out the questionnaire appropriate to them taking approximately 10 minutes for the non-smokers and 15 minutes for the smokers, answering each section as honestly as possible.

DATA ANALYSES

Three statistical analyses will be used to determine the research aims, firstly as there are only two groups a t-test is a suitable measure as this enables the establishment of significant differences between the means of the two groups on a single variable. Thus within the experiment two t-test will be carried out on the data collected from the smokers and non-smokers in order to determine whether or not one group is more extravert than the other and secondly to see whether or not there are any links to that of the variables <https://assignbuster.com/link-between-smoking-and-eysencks-personality-dimensions/>

included being that of a predictor for smokers. A third and final statistical analysis used to test the data will be that of a Univariate ANOVA which allows for three means to be compared, thus this being the most suitable analyses as the research intends to test that of impulsivity in relation to that of not only smokers and non-smokers but also extraversion in terms of that of high and low levels. As a preliminary measure for the ANOVA the high and low levels of extraversion were determined by finding the medium of all 60 participants' extraversion scores. Once the medium was found all scores above that of the midpoint were classed as having low levels of extraversion and scores below the midpoint high levels of extraversion. Secondary analysis was carried which saw the removal of selection of participants.

Results

Presented below in table 1 are the descriptive statistics for all variables tested within the research. (Appendix D)

Table 1

Means and Std. Deviations for all variables tested in relation to being predictors of that of smokers and non-smokers. Data are Mean (SD).

Total

(n= 60)

Smokers

(n= 30)

Non-smokers

(n= 30)

Extraversion

28. 95(6. 76)

27. 53(6. 35)

30. 37(6. 98)

Introversion

35. 25(5. 57)

36. 43(5. 88)

34. 07(5. 06)

Impulsivity

29. 53(5. 53)

29. 67(5. 55)

29. 40(5. 59)

Rebelliousness

31. 85(6. 54)

32. 93(6. 37)

30. 77(6. 63)

Extravagance

13. 17(3. 82)

13. 63(3. 31)

12. 70(4. 29)

Variety Seeking

33. 17(4. 06)

33. 33(3. 72)

33. 00(4. 44)

The initial t-Test results show for the personality dimension extraversion $t(58) = 1.645$ $p = 0.105$ for introversion $t(58) = 1.670$ $p = 0.100$ and the second t-test carried out for the main variable investigated, impulsivity, $t(58) = 0.185$ $p = 0.854$. For the various other variables tested within the research it was shown that $t(58) = 0.942$ $p = 0.350$ for extravagance, variety seeking $t(58) = 0.315$ $p = 0.754$ and finally rebelliousness $t(58) = 1.290$ $p = 0.202$. (Appendix E)

The ANOVA results measuring smokers and non-smokers level of extraversion in relation to that of impulsivity show that for the Levene's test of equality and error of variance $F(1, 56) = 0.597$ $p = 0.620$ as this is above the alpha level 0.05 the results do not violate the homogeneity of

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variance assumption. There was no main effect for the smoking condition $F(1, 56) = 0.010$ $p = 0.922$ nor for High/low extraversion $F(1, 56) = 1.959$ $p = 0.167$: and there was no significant interaction $F(1, 56) = 2.328$ $p = 0.133$. (Appendix F)

Secondary analyses were carried out on the participants excluding those who categorised themselves as social smokers in the smokers group and those in the non smokers group who had initiated in cigarette smoking once.

The secondary t-Test results show for the personality dimension extraversion $t(58) = 1.210$ $p = 0.233$ for introversion $t(58) = -1.239$ $p = 0.222$. The second t-test carried out for the main variable investigated, impulsivity, $t(58) = -0.732$ $p = 0.468$. For the various other variables tested within the research it was shown $t(58) = -0.913$ $p = 0.366$ for extravagance, variety seeking $t(58) = -0.844$ $p = 0.403$ and finally rebelliousness $t(58) = -1.303$ $p = 0.200$. (Appendix G)

A secondary ANOVA analysis measuring smokers and non-smokers level of extraversion in relation to that of impulsivity show for the Levene's test of equality and error of variance $F(1, 56) = 1.109$ $p = 0.357$ as this is above that of 0.05 it can be said it has not violated the homogeneity of variance assumption. There was no main effect for the smoking condition $F(1, 56) = 0.288$ $p = 0.595$ nor for High/low extraversion $F(1, 56) = 1.057$ $p = 0.310$: and there was no significant interaction $F(1, 56) = 1.210$ $p = 0.278$.

(Appendix H)

Discussion

From the initial t-Test carried out, set out to seek whether or not smokers are seen to hold that of a more extravert personality and non-smokers that of a more introvert personality, the results suggest there is no significant difference between the smokers and non-smokers in terms of their personality dimensions thus this does not support that of the first hypothesis proposed. It also contrasts to that of early research previously discussed carried out by Eysenck et al (1960) who suggested smokers and non smokers can be linked to that of certain personality dimensions and Smith (1970) who found that compared to non-smokers, smokers possess a extrovert personality.

The second t-Test carried out, set out to find that compared to non-smokers there would be a strong link found between smokers, impulsivity and all other variables. From the results shown above, it is shown there is no significant difference between that of smokers and non-smokers and the variables listed previously. As the t-Test carried out on these variables included that of multiple testing there may have been a chance of type one error however as the results are shown to be nowhere near to being significant there was no need to carry out further testing on the results as it would not produce any different output.

The ANOVA results, testing whether or not high levels of extraversion in smokers can be seen to show a strong link to that of impulsivity compared to low levels of extraversion in smokers and non-smokers. The figures show there is no significant link between smokers with high levels of extraversion and impulsivity in comparison to all other participants and their levels of <https://assignbuster.com/link-between-smoking-and-eysencks-personality-dimensions/>

extraversion, this is supported further by the estimated marginal means graph which shows no interaction between the smokers and non-smokers and their impulsivity, with the lines showing participants being of high extraversion or low extraversion, therefore the second hypothesis predicted is not supported by the findings presented. The findings also reject the hypothesis proposed by Doran, Cook, McChargue and Spring (2009) who suggested smoking being linked to a number of personality traits, specifically impulsiveness.

The influence of social smokers and those who had initiated in smoking and not maintained was considered as having a possible effect on the overall results. Once the initial results were carried out 8 participants from both groups were removed, these included those who had initiated in smoking and those who classed themselves as social smokers. As the results were shown as not significant in the original results this was carried out with the aim that it could have made a difference to the results showing that smokers are in fact more extrovert than non-smokers. Therefore a third t-Test was carried out as a secondary analysis on the new smokers and non-smokers group, showing that the significance level in fact was even further away from that of alpha level 0.05 with $p = 0.233$ for extraversion and $p = 0.222$ for introversion compared to the original results gathered for all 60 participants with $p = 0.105$ for extraversion and $p = 0.100$ for introversion, supported further by the ANOVA. Thus suggesting that the social smokers and those who have initiated previously in smoking and not maintained did not have an effect on the original results however if there were more participants who classed themselves in these two levels of smoking status allowing the

research to then include them as two separate groups a difference may have been found.

In terms of the research design there were a few limitations experienced in relation to the participants and the use of the EPR system as a way of gathering data. The most problematic limitation was that of not being able to gather together enough smokers using the EPR system, it was found that non-smokers would assigned themselves to that of the smokers questionnaire as well as the non-smokers in order to gain credits for their course, it was not until after the questionnaire was completed that it was discovered the participants had in fact made up the data, to which that questionnaire had to then be discounted. Thus due to this issue it cannot be said that all of those questionnaires filled out by undergraduate students, who had signed up through the EPR system, is genuine data.

The above points can therefore be link to that of one of the fundamental limitations of a questionnaire based study being the validity of the participants, the majority of participants that take part are not 100% truthful and reluctant at answering certain questions, this can be highlighted even more so within this research as it involves that of smoking, many people who are smokers do not want to fully admit the extent to which they participate in the social behaviour and example question of this would be " how many cigarettes do you smoke in a typical day?".

Collecting data from the smokers became time consuming, to speed the process up and ensure there were participants of " true" smokers the research had to resort to that of opportunity sampling instead of that of self

selecting. A further issue caused by that of the lack of smokers meant that the research could not include all groups that were initially intended to be used, as it was highly challenging gathering smokers between the age of 18-25 years old, where statistically 31% are recorded smokers, it was assumed to find smokers of at the aged of 60 years plus would be an even greater challenge therefore the third group of participants were unfortunately not studied. As a result of the above problems age within the group's overall became a issue, compared to the non-smokers group the smokers group has a much wider age range being 18-50 years due to changing to opportunity sampling, where as the research was able to use the EPR system and self selecting sampling for the whole of the non-smokers group as originally planned therefore the research did not have to consider adapting the age range it intended for the initial groups. Another limitation linking to that of the participants is that the ratio of females to males is very high with less than half of each group being males. The research has low temporal validity as the majority of participants tested within the investigation were that of white British undergraduate students, thus from a westernised background and it can be assumed that all have similar social economic status thus cannot be generalized to the population worldwide, this can also be linked to that of cultural relevance, as the results gathered from this research may be very different if carried out in a different culture.

The issues above have been experienced due to a number of reasons, firstly statistically in the United Kingdom, since the introduction of the smoking ban in 2007, each year there are less and less individuals initiating and maintaining smoking. Secondly there could be a link to the level of education

and the social influences experienced within the different educational sectors. It became obvious during research that the number of undergraduate students that smoke is somewhat low, however when various other options were looked at as improving the level of smokers it was found that much higher levels of smokers were found in that of a college setting, with individuals aged between that of 16-18 years of age. Suggesting the level of education may have effect upon the individual's initiation and maintenance of cigarette smoking; this could be down to social influences such as peer pressure, conformity to the group and smoking being seen as a "norm" within this age group, through further research it could be found that those at a lower educational level are more likely to smoke than those in higher education.

Throughout testing there were a number of different levels of smoking status found, that cannot be narrowed down to smokers and non-smokers. A number of participants that completed the smoker's questionnaire, classed themselves as "social smokers" only having between 1 and 10 cigarettes in a week, within the non-smokers group there were participants that had smoked in their past but now classed themselves as non-smokers and those who had tried a cigarette once in their life. From this a new theory could be proposed, there could be quite possibly a significant difference between those who initiate in smoking however don't maintain it and those who initiate and maintain. As a point of further research, it would involve investigating those who have just initiated in smoking and those who have ini