The acceptance of and factors associated with the adherence to a campus-wide smoking ban at the University of Twente among students

Bachelor Thesis

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Abstract

Background. In 2020, a new smoking ban was introduced at the University of Twente to reduce (passive) smoking, which disallows smoking on the whole campus, excluding the living areas. The aim of this study was to research whether the acceptance of the smoking ban after implementation changed by comparing it to existing data on acceptance before the smoking ban was introduced, provided by the study of Ditzel et al. (2019). Acceptance was defined by attitude and the intention to enforce the ban. In addition, it was investigated if habitual smoking on campus, the presence of other smoking restrictions at home, and the influence of perceived smoking among peers could have an impact on the acceptance and thus compliance with the ban. Also, smoking status (as a moderator) was added to these analyses.

Method. The study was conducted by implementing a cross-sectional survey design with an integrated longitudinal observational (2 waves) cohort study. Data was collected from students at the University of Twente by using a survey. Pre-ban respondents (n=29) and post-ban respondents (n=34) were divided into smokers (n=4 in the pre-ban survey; n=8 in the post-ban survey) and nonsmokers (n=25 in the pre-ban survey; n=26 in the post-ban survey).

Results and discussion. A significant difference in acceptance between smokers and non-smokers was observed ($p<.01$). This was also observed in several other studies. Additionally, acceptance did not change comparing acceptance of the smoking ban before and after its implementation ($F(1,28) = 1.322$, $p=.260$). Possible reasons are that during the lockdown in response to COVID 19, interaction on campus and behaving according to the campus-free smoking ban, was limited. Habitual smoking ($r=-.236$, $p=.179$; $r=-.175$, $p=.323$;) and the occurrence of a smoking ban at home ($r=.229$, $p = .193$; $r=.172$, $p=.330$) did not influence the acceptance of the ban. This can be explained by the main role of lacking self-efficacy beliefs, which determine behaviour especially when feeling stressed and when not trained efficiently. Peer perception could be interpreted as a predictor of acceptance with the smoking ban but peer perception is confounded by smoking status due to collinearity ($r=.851$, $p=.000$; $r=.695$, $p=.000$). Thus, the perceived favourability of peers has an influence on acceptance with the ban.

Key words: smoking ban at university, smoke free campus, acceptance of a smoking ban, enforcement of a smoking ban, factors influencing acceptance of a smoking ban

Introduction

Prevalence and the health consequences of smoking

Products containing tobacco are the reason for more than seven million deaths per year, which is one in ten deaths globally caused by smoking (World Health Organisation, 2017). Thus, smoking presents the most prominent cause of preventable mortality (Cobos-Campos et al., 2021; Samet, 2013). This is because illnesses such as cancer, stroke, and respiratory as well as heart disease can be generated by the toxic substances found in tobacco (Darby et al., 1984; U.S. Department of Health and Human Services, 2014). Furthermore, tobacco is not only known for its bodily damage but also its addictive compound. Nicotine as a substance is the main origin of a physical and psychological tobacco dependence (Kolenda, 2020). Therefore, mainstream smoke includes several side effects on its consumer.

In addition, sidestream smoke poses a risk factor for smokers as well as non-smokers, showing that the smoker's social environment is also negatively affected by their smoking behaviour. For illustration, environmental tobacco smoke consists of 85% second-hand smoke and 15% first-hand smoke (DiGiacomo et al., 2019). The World Health Organisation (2017) states that non-smokers' occasional passive smoking can lead to the same illnesses smokers are more receptive to. For smokers, second-hand smoke can increase their craving and reduce chances of quitting. Also, ex-smokers' probability of relapse is heightened through second-hand smoke (Ordoñana et al., 2012).

Smoking bans as a favourable intervention at universities

The World Health Organisation (2019) stresses that effective smoke free laws can help to protect non-smokers from bad air quality and improve health benefits of both smokers and non-smokers. Since many students start smoking at university, adolescents in particular are more at risk towards smoking cigarettes than other age groups (Cairney & Lawrance, 2002; Rogers et al., 2020). This is because many students do not consider the protection of their own and others' health (Cairney & Lawrance, 2002). Additionally, students are more regularly passive smokers due to their lifestyle, as for example by living in university housing (Wolfson et al., 2009). In response to this high prevalence of (passive) smoking among students, the Tobacco and Smoking Products Act was introduced in the Netherlands, which does not allow

smoking in and around educational facilities anymore (Willemsen, 2018).

For a campus-wide smoking ban to be effective, the acceptance of it is crucial since it influences the overall compliance with the ban (Borland et al., 1989). Therefore, if a smoking ban is accepted and complied with, it is considered even more effective than educational programs at schools (Leão et al., 2020). As an example, Berg et al. (2011) showed that college students, after a campus-wide smoking ban was implemented, perceived benefits of a cleaner campus, the protection of non-smokers and the possibility of smokers to reduce their cigarette consumption. Further, a campus-wide smoking ban at university can prevent and reduce the consumption of tobacco products and decrease the addiction to nicotine (Farkas et al., 2000; Hahn et al., 2008; Heloma & Jaakkola, 2003; Lechner et al., 2012). This can be explained by restricting habitual smoking behaviour at university or the fact that peer role models can convey a favourable image of non-smoking behaviour on campus (Buonanno & Ranzani, 2013; Wills et al., 2007). Also, the existence of other smoking restrictions students have to comply with, for example following smoking restrictions at home, influence the acceptance of a smoking ban at university (Berg et al., 2011).

Habitual smoking on campus. It is shown that a smoking ban has an influence on the reduction of smoking behaviour and is able to change personal smoking habits. In a study of Buonanno and Ranzani (2013), smoking decreased by 1.3% overall, and 8% of daily consumed tobacco products could be reduced on average 15 months after the smoking ban was introduced. Therefore, habit could influence the acceptance and compliance with the smoking ban. Habit can be defined as behaviour that is frequently repeated with a low amount of cognitive effort, leading to an automatization of behaviour that is difficult to change (Jager, 2003; Van Wijk et al., 2020). Bad habits, as if smoking in particular, are even less susceptible to change (Jager, 2003). As Verplanken and Faess (1999) state, intentions of quitting or following the smoking ban will not be executed when existing habits are present. This can be supported by the habit formation model, which indicates that stimulus-response relationships, for example being on university campus (S) leading to smoking and thus not complying with the ban (R), drive behaviour, which is then defined as habitual smoking behaviour (Ikard et al., 1969; Sjoerds et al., 2014). This means that if students are used to smoking around campus, the existence of a previous habit of smoking on campus could hinder the adherence to the smoking ban.

Perceived smoking among peers. Additionally, the perception of peer smoking behaviour could also have an influence on the acceptance of a smoking ban at university. This is because the individual perception of peer tobacco consumption and its prevalence forecasts the smoking behaviour in adolescents (Chassin et al., 1991). Students are typically susceptible to peer influence when starting university since they lose their friends from home and aim to fit in (Colder et al., 2006). In this way, the social perception theory argues that the impression of our social environment directly influences our behavioural choices and could lead us to imitate the actions that we observe from others (Dijksterhuis & Bargh, 2001). Thus, a young person perceiving an especially favoured or charming similar aged peer who smokes, is more likely to initiate tobacco consumption in an attempt to adopt the perceived social reputation of the favourable other (Wills et al., 2007). Hence, it is possible that the smoking bans effectiveness could be reduced. Contrastingly, this effect could work the other way around if peers perceived as role models are in favour of the smoking ban. This can lead to a higher acceptance rate of the smoking ban, resulting in reduced initiated smoking behaviour on campus (Dijksterhuis & Bargh, 2001).

Smoking restrictions at home. Furthermore, a smoking ban at university could be effective because it can complement other existing smoking restrictions. It has been researched that private smoking restrictions at home, where parents ban tobacco consumption inside, correlate with receptivity to smoke free policies on campus (Berg et al., 2011). The indirect influence of another smoking ban students have to comply with, could have an effect on their self-efficacy of also adhering to the smoking ban at university, making a smoking ban more effective (Bandura 1997; Luszczynska & Schwarzer, 2005). It would be a socio-structural factor that has an influence on the enacted behaviour, either as a barrier or opportunity according to the social cognitive theory (Bandura, 1997). Therefore, if a smoking policy would have been introduced at a student's home, it could indirectly support the acceptance of the smoking ban at university by having an influence on cognitions and perceiving the smoking ban as another opportunity to reduce, or a barrier to start smoking (Bandura, 1997).

Introduction of a campus-wide smoking ban at the University of Twente

Since a smoking ban at university is shown to be effective in reducing the tobacco

consumption as well as the exposure to second-hand smoke among students (Farkas, et al., 2000; Rogers et al., 2020), the University of Twente in Enschede announced their campus to be smoke free from the 30th of March 2020 onwards. Thus, the UT changed their prior smoking policy of only being allowed to smoke in the green marked areas in front of building entrances to a smoking ban that includes the whole study and working areas on campus, only sparing the living areas. This is in line with the study results of Bauer et al. (2005), who stress the importance of a complete smoke free area in order to reach a smoking reduction.

Acceptance of and factors associated with adherence to the campus-wide smoking ban at the University of Twente

Implementing a smoking ban requires acceptance to lead to compliance (Borland et al., 1989). Therefore, the current study researches the level of acceptance of the smoking ban among the students of the University of Twente and change in acceptance after ban implementation. Collecting data routinely will allow a critical evaluation of the acceptance of the smoking ban and further challenges that need to be overcome in order to increase acceptance (World Health Organisation, 2017). For this, one survey has already been conducted before implementation of the ban that aimed to investigate the acceptance of students based on the attitude scale of Ditzel et al. (2019) which yielded the result that 70% of the respondents thought positively about a campus-wide smoking ban. Next to the overall acceptance, the specific attitude items were also of interest in the study by Ditzel et al. (2019). Based on those, respondents argued for example that the new smoking ban would have a favourable impact on health, the reduction of nuisance and trash, and would increase the role model function of students towards younger people. The aim of this study is to find relevant items that inform an intervention to improve the acceptance of the smoking ban. Therefore, the overall attitude and the attitude on the specific items should be investigated to assess in which items smokers and non-smokers differ as compared to 2019.

Acceptance is not only dependent on the attitude towards the smoking ban but also the intention to enforce the ban is important since it increases compliance with the ban on campus (Harris et al., 2009). The study of Ditzel et al. (2019) found that 16% of the respondents have the intention to enforce the ban sometimes, however 70% have no intention to enforce the ban. Without active enforcement, the violation of rules happens frequently with disbenefits for the

whole campus community (Douhou et al., 2011; Fehr & Fischerbach, 2004). Therefore, it is of interest in this study to find out the students' intention to enforce the ban. Hence, acceptance is operationalized based on two dependent variables, namely attitude and the intention to enforce the ban. This was done because the intention to enforce may be more representative of the non-smokers' role, while the attitude scale better reflects the position of smokers. Smokers display stronger attitudes against a smoking ban that could lead to less compliance, as Ditzel et al. (2019) concluded that smokers opposed to non-smokers perceive the smoking ban as patronizing and even discriminatory. Opposingly, 30% of non-smokers will sometimes enforce the new smoking ban after its introduction (Ditzel et al., 2019). The readiness of non-smokers to enforce the ban could give a clearer picture on acceptance since it would show their willingness to increase compliance among all students, especially non-complying smokers (Fischbacher et al., 2013; Harris et al., 2009).

Overall, it is necessary to include the non-smokers' acceptance of the ban next to those of smokers as well. This is because some non-smokers are ex-smokers who can identify with the view of smokers or possibly relapse and start smoking again (García-Rodríguez et al., 2013). Additionally, the ban also aims to protect non-smokers' health, and if they are in favour of it, smokers could possibly recognize its importance (DiGiacomo et al., 2019; Shields, 2007). Lastly, they also influence peer perception and could function as role models next to the smoking students on campus (Wills et al., 2007). Hence, it could be considered whether different interventions should target both groups separately. Based on the aforementioned argumentation, the following research questions can be stated.

1. To what extent is the smoking ban accepted by both smoking and non-smoking students at the University of Twente based on the attitude scale and the intention to enforce the ban?

1a. What is the acceptance of non-smoking and smoking students at the University of Twente on the individual attitude items?

2. Has the acceptance of the smoking ban based on attitude at the University of Twente changed for students since the implementation of this policy one year ago?

2a. Did the acceptance based on the individual attitude items change among the non-smoking and smoking students?

Furthermore, the driving factors that determine the acceptance of the smoking ban need to be understood to inform interventions that may enhance acceptance and increase the effectiveness of a smoking ban. In this regard, the influence of habitual smoking on campus, the occurrence of a smoking ban at home, and the individual perception of one's peers' acceptance of the smoking ban will be researched. Also, the individual items could be informative for this aim to see where smokers and non-smokers differ. In regard to habit, it needs to be mentioned that the non-smokers were included by asking them to imagine the situation from a smoker's perspective in order to reach a higher response rate and to include their viewpoint of how habitual smoking could lead to a possible violation of the smoking ban. Also, some non-smokers could be ex-smokers who are able to imagine this situation for smokers similarly well.

3. What is the influence of habitual smoking on campus, perception of peer smoking behaviour on acceptance, and a smoking ban at home on acceptance (attitude and intention to enforce) of the smoking ban at the University of Twente for students?

3a. Do smokers and nonsmokers score differently on the individual items of the constructs (habitual smoking on campus, and the perception of peer smoking behaviour)?

The smoking ban clearly has different consequences for smokers compared to non-smokers as a study of Hall et al. (2015) reports. The study states that it is common that non-smokers are more in favour of a smoking ban on campus and express stronger attitudes towards it, whereas smokers are not. Several other studies support these results (Fichtenberg & Glantz, 2002; Heloma & Jaakkola, 2003; Seo et al., 2011). Therefore, it will be explored whether smoking status acts as a moderator on the determinants of acceptance. The research question can be stated as follows and is shown graphically in Figure 1 and 2.

4. Do the determinants of acceptance (habitual smoking on campus, a smoking ban at home, perception of peer smoking behaviour) differ for smokers as compared to non-smokers on acceptance (attitude and intention to enforce) of the smoking ban?

Figure 1

A graphic illustration of the moderation effect by smoking status on acceptance (attitude)

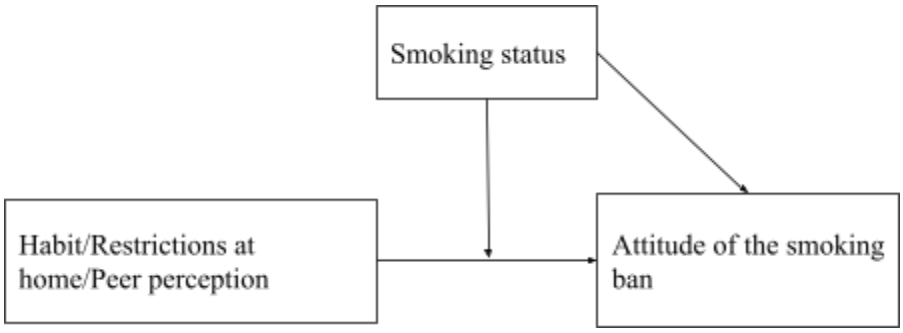
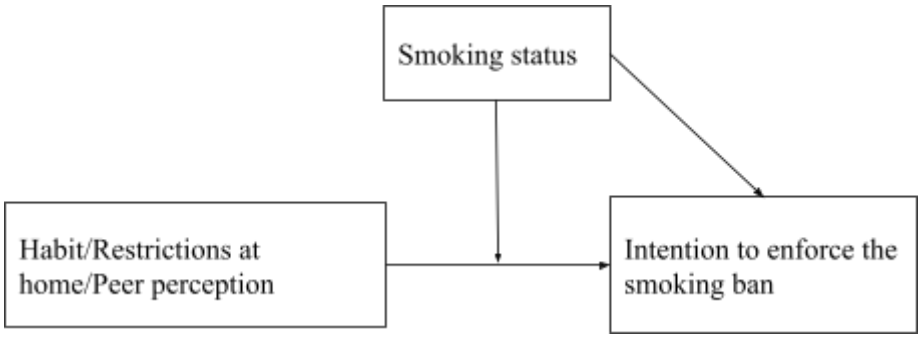


Figure 2

A graphic illustration of the moderation effect by smoking status on acceptance (intention to enforce)



Methods

Design

In this study, a questionnaire/cross-sectional study design was employed in order to investigate the research questions. In addition to that, a two-wave longitudinal and observational cohort design was used to compare the data from previous research in 2019 and current results from 2021. To do so, cohort (responded pre - and post the introduction of the ban) and the

post-ban sample (all respondents of 2021) were separated. The first and follow up data collection was done in the same season (summer).

Cohort. The results of the cohort sample (1st and 2nd wave) were used to investigate a possible change in acceptance as a within-subjects variable before and after the introduction of the ban. As it was measured among smokers and non-smokers, a between-subjects variable was employed. The results of the cohort sample before ban introduction are based on the study of Ditzel et al. (2019).

Post-ban sample. The post-ban sample's (2nd wave) results on the survey were used to test the current acceptance of the smoking ban among smokers and non-smokers. Also, it was used to assess if the determinants habitual smoking on campus, smoking restrictions at home, and perceived smoking among peers have an influence on the acceptance of the smoking ban. This was done on the basis of the data from the post-ban sample since these items are only part of the revised survey. The same is the case for investigating the possible effects of the determinants on acceptance of the ban by researching if those effects were moderated by being a smoker or nonsmoker.

Respondents

The respondents can be divided into cohort and UT wide. For the cohort study, only the data from respondents was used who filled in both surveys (2019 and 2021). All respondents were reached through convenience sampling. Table 1 displays the number of respondents in the pre-ban sample and the post-ban sampel. In the post-ban sample, all respondents on the second wave of the cohort study were added to the 2021 UT wide sample. The research was approved by the Ethics Committee of the University of Twente, and all participants have given informed consent prior participation voluntarily.

Table 1

All respondents divided in cohort respondents and new respondents from the first and second wave in numbers and percentages

	Pre-ban respondents			Post-ban respondents		
	Smokers	Nonsmokers	Total	Smokers	Nonsmokers	Total

Cohort	4 (13.8%)	25 (86.2%)	29 (100%)	4 (13.8%)	25 (86.2%)	29 (100%)
UT wide new data	/	/	/	8* (23.5%)	26* (76.5%)	34* (100%)

*Including the survey link in the UT wide newsletter gained five new respondents (four smokers, one non-smoker)

Materials

For this study, a survey has been created on the basis of the questionnaire from 2019 for the purpose of data collection in 2021 by adding certain items and constructs, which will be explained in more detail in the following sections. The survey in 2019 was based on previously used comparable studies in this subject area and pre-tested with volunteers (Ditzel et al., 2019). The responses on the survey from 2019 have been used to make comparisons among the cohort respondents (Ditzel et al., 2019). Both questionnaires were generated in Qualtrics, which is an online platform to produce and publish surveys.

Measures

Demographic variables. The information of the respondents on smoking status was collected by using a multiple choice question ("Are you a smoker, ex-smoker, or non-smoker?"). Smoking status was coded as smokers and non-smokers (including ex-smokers).

Smoking ban acceptance. Acceptance of the smoking ban was operationalized by the dependent variables attitude and intention to enforce. To measure attitude, the survey of Ditzel et al. (2019) was used. In their study, attitude was asked for by closed-ended questions with a five-point Likert scale for each item. The item "A smoke-free campus contributes to a healthy lifestyle" was added to the revised survey. In total, 15 items needed to be answered, for example "It protects non-smokers" (see Table 3 for the list of item contents). The first nine items (eight in the pre-ban study) were re-coded (1=completely disagree, 5=completely agree). The other items were coded in the opposite direction (1= completely agree, 5= completely disagree). Thus, a higher mean described a more positive attitude towards the smoking ban. Then, the mean of all items was calculated, and a construct created. For the post-ban sample, the Cronbach's alpha with

all attitude items was α=.96. For the cohort sample, the Cronbach's alpha coefficient for the attitude items in t0 (responses in 2019) reported α=.949 including all 14 items. In t1 (responses in 2021), the overall Cronbach's alpha with all items is α=.950. Since the study of Ditzel et al. (2019) excluded the item "A smoke-free campus contributes to a healthy lifestyle", this item was excluded from the attitude scale to compare the result of the cohort study

The intention to enforce was asked for by a five-point Likert scale question, namely "Do you intend to call on smokers who smoke within the smoke free area (as implemented since 30th of March 2020) after returning to campus?" with the answer option ranging from "no, never" (coded as 1) to "yes, always" (coded as 5). This item, based on the study by Ditzel et al. (2019), was re-coded in the opposite direction, so a higher score indicated a higher likelihood of addressing others.

Habitual smoking on campus. All items on the determinants were added to the survey by Ditzel et al. (2019). Habitual smoking was researched by using a closed-ended question. The way it was stated is "Even when someone is motivated to comply with the new smoking ban, they may fail to do so at times. In the following situations, how likely do you think that this may happen?", and the respondents had the opportunity to use a five point Likert scale (very unlikely =1, very likely=5) to rate six different items (e.g., "When I am feeling stressed"), which can be seen in Table 6. For the analysis, those items were re-coded in the opposite direction, resulting in higher scores indicating a higher likelihood of violating the ban due to habitual smoking on campus. Cronbach's alpha took into account the total number of items by calculating means and creating a scale with an α=.69.

Smoking restrictions at home. This determinant was included by focusing on one multiple choice question, namely "If it concerns your home (including indoor and outdoor areas such as a garden), smoking may or may not be subject to restrictions. By restrictions, we mean both rules drawn up by third parties (such as the owner of an apartment building, or inmates, or parents), and rules that you set yourself. Which of the following statements best describes your current situation?" The answer options included smoking as being completely unrestricted (coded as 1), partially restricted (coded as 2), and completely restricted (coded as 3). Thus, a higher score indicated a more present smoking ban at home.

Perceived smoking among peers. The variable was measured by applying four questions, which could be answered in the form of a five-point Likert scale (e.g. "How many of your

friends/colleagues at the UT regularly smoke on campus?"). The item contents are displayed in Table 11. Also, each item was coded differently, but they were re-coded in order to interpret a higher score with a social environment that is more accepting of the smoking ban (see Table 11). These items were re-coded to interpret a higher score with a social environment that is more accepting of the smoking ban. Cronbach's alpha was calculated of all four items as a construct by calculating means on the perceived smoking among peers with α=.54. An alpha around .5 could be seen as acceptable since .7 is not a universal standard for the calculation of reliability estimates (Lance et al., 2006). Also, it is common that Cronbach's alpha will be less for a lower number of items taken together, so it needs to be interpreted according to the included variables (Brown, 1998; Brown, 2001).

Procedure

The participants were gathered in two different ways. The cohort respondents received an email and were asked to fill out the survey, which was indicated by a link. The email addresses were available since the respondents of the study in 2019 by Ditzel et al. (2019) were able to fill them in if they were open to participate in an upcoming questionnaire. The new respondents were invited to fill out the survey by receiving the newsletter of the University of Twente. It was mentioned that it will take ten to fifteen minutes to complete the questionnaire and that the information gained will only be used for research purposes, thus ensuring confidentiality. In addition to that, the respondents had to give their consent manually. It has also been mentioned that the student can withdraw from the survey at any time without providing a reason and their data can also be deleted two weeks after doing the survey, if requested by them. After filling in all the questions and statements, which are most applicable to them, the respondents were asked for further participation in the future by inserting their email addresses.

Analysis

Smoking ban acceptance. Descriptive statistics were calculated to gain the mean values of the students' attitude and their intention to enforce in the post-ban sample. In this case, the means of smoking and not smoking students were differentiated. In addition to that, an independent sample t-test was conducted to see if there is a significant difference in acceptance (attitude scale and intention to enforce) between the smoking and non-smoking students. Next to

scale level, the singular item means of attitude were investigated by performing a t-test comparing smoking and non-smoking students. Due to a low sample size, it is problematic to meet the demands of doing parametric analyses. Therefore, the parametric t-test was duplicated by performing a Mann - Whitney U test. This was also done for all following t-test analyses. If the results show to be incompatible with the result of the parametric test, it will be reported in the results section.

Change in acceptance. To test the within-subject change in acceptance over time among the cohort sample, the descriptive statistics on the attitude scale were compared at both points in time. Additionally, a t-test was done to investigate if a significant difference between smokers and non-smokers regarding the attitude scale is present at both points in time. Also, a repeated one-way measure ANOVA was performed to infer if the acceptance of the smoking ban according to attitude in students differed between the two times the survey was distributed in 2019 and 2021 significantly. In addition, the test was duplicated by performing Friedman's test since it is problematic to meet the demands of doing parametric analyses with a low sample size. The results will only be displayed when they should contradict the findings of the repeated one-way measure ANOVA. Also, the individual item means of attitude were investigated by performing a t-test in order to find out if (in)significant differences between smokers and non-smokers changed over time or stayed constant regarding each individual item.

Research on determinants. The determinants were researched by firstly comparing the mean responses on the construct of habit, the item of restrictions at home and the construct of peer perception among smoking and non-smoking students. In addition to that, an independent sample t-test was conducted for each scale (habitual smoking on campus, perceived smoking among peers), and each individual item on habit and peer perception, and the item about smoking restrictions at home with smoking status to research if the two groups differed significantly regarding each independent variable. Then, Pearson's correlation was calculated for each possible predictor (habitual smoking on campus, smoking restrictions at home, perceived smoking among peers) with attitude and the intention to enforce (acceptance). The same was done with a Spearman's rho to duplicate the results in a nonparametric way due to low sample size, which will only be reported when deviations to Pearson's correlation exist.

Moderation analysis. Linear regression analysis was used to research possible interaction effects (see Figure 1 and 2) for each independent variable individually by smoking status on

acceptance. The testing for moderation effects was based on the PROCESS tool by Preacher and Hayes (Hayes, 2012). To calculate the results, the z-scores were used for all independent variables. The aforementioned linear regressions were repeated with a bootstrapping sample of 2000 (Davidson & MacKinnon, 2000).

Results

Smoking ban acceptance. The mean values for attitude on the post-ban sample showed that the acceptance of the smoking ban is in general above the middle point of the score (*M*=3.7). Non-smokers (*M*=4.1) opposed to smokers (*M*=2.4, *p*<.01) have a highly positive attitude and thus acceptance of the smoking ban (see Table 2). Overall, acceptance based on the intention to enforce the smoking ban is rather low, as the mean score of 2.3 indicates that students will mostly not act when seeing someone smoke on campus (see Table 2). However, smokers clearly have a lower intention to enforce (*M*=1.4) than non-smokers (*M*=2.6, *p*<.01).

Table 2

Means and standard deviations for attitude and intention to enforce among smokers and non-smokers at t1

	Smokers (n=8)	Non-smokers (n=26)	Total (n=34)	*t*	*p*
Attitude[1]	2.4 (*SD*=.8)	4.1 (*SD*=.6)	3.7 (*SD*=1.0)	-7.266	.000
Intention to enforce[2]	1.4 (*SD*=.5)	2.6 (*SD*=1.0)	2.3 (*SD*=1.0)	-3.402	.002

[1]coded as completely disagree (1) to completely agree (5)
[2]coded as no, never (1) to yes, always (5)

The individual items of the attitude scale also show differences among means regarding smokers and non-smokers (Table 3). The lowest scoring item among the smokers is the one concerning the annoyance of leaving campus to smoke (*M*=1.4). The non-smokers score highest on health (*M*=4.8) and healthy lifestyle (*M*=4.8). The most considerable differentiation among means between smokers and non-smokers concerns the items about the new and the old smoking ban. Smokers highly agree with the old ban being better (*M*=1.6), whereas non-smokers disagree with this statement (*M*=4.0, p<.01).

Table 3

Means and standard deviations for the individual attitude items on t1 level among smokers and non-smokers

	Smokers (N=8)	Non-smokers (N=26)	Total (N=34)
Protection of nonsmokers[1,2]	2.8 (*SD*=1.5)	4.7 (*SD*=.5)	4.2 (*SD*=1.2)
Health[1,2]	3.0 (*SD*=1.3)	4.8 (*SD*=.5)	4.4 (*SD*=1.1)
Healthy lifestyle[1,2]	2.9 (*SD*=1.5)	4.8 (*SD*=.6)	4.3 (*SD*=1.2)
Maintenance of quitting[2]	3.4 (*SD*=1.2)	4.1 (*SD*=.8)	3.9 (*SD*=1.0)
Higher likelihood of quitting[1,2]	1.9 (*SD*=1.0)	3.2 (*SD*=1.1)	2.9 (*SD*=1.2)
Reduction of odour nuisance[1,2]	3.1 (*SD*=1.6)	4.7 (*SD*=.7)	4.4 (*SD*=1.2)
Reduction of trash[1,2]	2.4 (*SD*=1.2)	4.2 (*SD*=1.1)	3.8 (*SD*=1.4)
Increased role model function[1,2]	2.5 (*SD*=1.4)	4.7 (*SD*=.5)	4.2 (*SD*=1.2)
Better image of the University[1,2]	2.0 (*SD*=1.2)	4.5 (*SD*=.8)	3.9 (*SD*=1.4)
Discrimination of smokers[1,3]	1.8 (*SD*=1.0)	3.9 (*SD*=1.1)	3.4 (*SD*=1.4)
Annoying to leave the campus to smoke[1,3]	1.4 (*SD*=.7)	3.0 (*SD*=1.3)	2.7 (*SD*=1.4)
Smoking as an addiction[1,3]	1.9 (*SD*=1.0)	3.1 (*SD*=1.0)	2.8 (*SD*=1.1)
Patronization of smokers[1,3]	1.8 (*SD*=.9)	4.1 (*SD*=1.2)	3.5 (*SD*=1.5)
Nobody is bothered by smoking on campus[1,3]	3.1 (*SD*=1.3)	4.7 (*SD*=.5)	4.4 (*SD*=1.0)
Previous ban (smoking only allowed in green squares) was better[1,3]	1.6 (*SD*=.7)	4.00 (*SD*=1.0)	3.4 (*SD*=1.4)

[1]$p<.01$ for an independent t-test comparing smokers and non-smokers
[2]coded as completely disagree (1) to completely agree (5)
[3]coded as completely agree (1) to completely disagree (5)

Change in acceptance. In total, acceptance based on attitude can be observed as staying constant over time since the mean decreased only slightly from 3.7 to 3.6 (Table 4). A one-way repeated measures ANOVA revealed that the difference in acceptance (based on the attitude scale) among smokers and non-smokers between 2019 (t0) and 2021 (t1) was insignificant

($F(1,28) = 1.322$, $p = .260$). However, smokers' attitude towards the smoking ban decreased marginally (from $M = 2.6$ to $M = 2.2$), whereas the attitude of non-smokers stayed constant over time ($M = 3.9$, $p < .01$). The acceptance based on the intention to enforce could not be compared between t0 and t1 since there were no values present for the survey from 2019 for students.

Table 4

Means and standard deviations of attitude in t0 and t1 among smokers and non-smokers

	Smokers (N=4)	Non-smokers (N=25)	Total (N=29)	*t*	*p*
Attitude in t0	2.6 (*SD*=.8)	3.9 (*SD*=.9)	3.7 (*SD*=1.0)	-2.940	.007
Attitude in t1	2.2 (*SD*=.3)	3.9 (*SD*=.9)	3.6 (*SD*=1.0)	-3.778	.001

coded as completely disagree (1) to completely agree (5)

Considering the change in item scores between t0 and t1, overall minor changes were observed, but acceptance stayed constant over time for both groups (Table 5). Among the four smokers, the average score on protection of their own health decreased by more than one full scale point towards less acceptance of the ban. Also, the importance of considering the addictive characteristic of smoking regarding the introduction of the smoking ban increased over time by more than one scale point on average, decreasing acceptance ($p < .01$ in t1). The importance of the protection of nonsmokers' health decreased by .5 scale points on average among the four smokers (Table 5). Both groups differed significantly in t0 on the items of odour nuisance and trash reduction ($p < .01$ in t0), which was not the case anymore in t1 (Table 5). The only item on which both smokers and non-smokers score more negatively on average now as compared to the previous study in 2019 is that it would be annoying to leave the campus to smoke (Table 5). Lastly, smokers changed their attitude towards the current ban when comparing the first and second survey because they now perceive the previous smoking ban as better ($p < .01$ in t1).

Table 5

Means and standard deviations for the individual attitude items on t0 and t1 level among smokers and non-smokers

	Smokers t0 (N=4)	Smokers t1 (N=4)	Non-smokers t0 (N=25)	Non-smokers t1 (N=25)	Total t0 (N=29)	Total t1 (N=29)

Protection of nonsmokers[3]	3.5 (*SD*=1.0)	3.0 (*SD*=1.15)	4.4 (*SD*=1.2)	4.3 (*SD*=1.1)	4.2 (*SD*=1.2)	4.1 (*SD*=1.2)
Health[2,3]	4.0 (*SD*=1.4)	2.8 (*SD*=1.0)	4.5 (*SD*=1.0)	4.5 (*SD*=.9)	4.5 (*SD*=1.0)	4.3 (*SD*=1.1)
Maintenance of quitting[3]	2.8 (*SD*=2.1)	3.0 (*SD*=1.4)	4.2 (*SD*=.9)	4.1 (*SD*=.8)	4.0 (*SD*=1.2)	4.0 (*SD*=1.0)
Higher likelihood of quitting[2,3]	1.8 (*SD*=1.0)	1.5 (*SD*=.6)	3.2 (*SD*=1.0)	3.2 (*SD*=1.0)	3.0 (*SD*=1.1)	2.9 (*SD*=1.1)
Reduction of odour nuisance[1,3]	3.0 (*SD*=1.4)	3.5 (*SD*=1.7)	4.6 (*SD*=.9)	4.4 (*SD*=1.1)	4.4 (*SD*=1.1)	4.3 (*SD*=1.2)
Reduction of trash[1,3]	2.0 (*SD*=.8)	2.3 (*SD*=1.3)	4.3 (*SD*=1.0)	4.1 (*SD*=1.2)	4.0 (*SD*=1.2)	3.8 (*SD*=1.4)
Increased role model function[3]	2.5 (*SD*=1.7)	2.5 (*SD*=1.3)	4.2 (*SD*=1.2)	4.3 (*SD*=1.2)	4.0 (*SD*=1.4)	4.0 (*SD*=1.4)
Better image of the University[1,2,3]	1.8 (*SD*=1.0)	1.8 (*SD*=1.0)	4.0 (*SD*=1.3)	4.1 (*SD*=1.4)	3.7 (*SD*=1.5)	3.8 (*SD*=1.5)
Discrimination of smokers[4]	1.8 (*SD*=1.0)	1.5 (*SD*=.6)	3.2 (*SD*=1.4)	3.4 (*SD*=1.5)	3.0 (*SD*=1.5)	3.2 (*SD*=1.5)
Annoying to leave the campus to smoke[4]	1.8 (*SD*=.5)	1.0 (*SD*=.0)	3.1 (*SD*=1.3)	2.7 (*SD*=1.3)	2.9 (*SD*=1.3)	2.5 (*SD*=1.4)
Smoking as an addiction[2,4]	3.3 (*SD*=1.3)	1.3 (*SD*=.5)	3.0 (*SD*=1.1)	3.0 (*SD*=1.0)	3.0 (*SD*=1.1)	2.8 (*SD*=1.1)
Patronization of smokers[4]	2.0 (*SD*=1.4)	1.8 (*SD*=1.0)	3.9 (*SD*=1.3)	3.8 (*SD*=1.4)	3.7 (*SD*=1.5)	3.5 (*SD*=1.6)
Nobody is bothered by smoking on campus[4]	3.8 (*SD*=1.0)	3.5 (*SD*=1.3)	4.5 (*SD*=.8)	4.4 (*SD*=1.0)	4.4 (*SD*=.9)	4.3 (*SD*=1.1)

Previous ban (smoking only allowed in green squares) was better[2,4]	2.0 (*SD*=1.2)	1.3 (*SD*=.5)	3.8 (*SD*=1.4)	3.8 (*SD*=1.2)	3.5 (*SD*=1.5)	3.4 (*SD*=1.4)

[1]$p<.01$ for an independent t-test comparing smokers and non-smokers in t0
[2]$p<.01$ for an independent t-test comparing smokers and non-smokers in t1
[3]coded as completely disagree (1) to completely agree (5)
[4]coded as completely agree (1) to completely disagree (5)

Habitual smoking on campus. Smokers revealed a mean value on the habit construct of 3.1 (*SD*=1.0) and non-smokers a remarkably similar score of 3.0 (*SD* = .6), with $t(32)=.536$, $p=.596$. Since a higher mean is indicating a higher degree of habitual behaviour to violate the smoking ban, respondents display overall a neutral view of habit as an influencing factor when it comes to violating the smoking ban. Looking at the underlying item scores, both smokers and non-smokers agree that when being stressed, and in the company of other smokers, smoking students are rather likely to induce habitual smoking in violation of the ban (Table 6).

Table 6
Means and standard deviations for the individual items on habitual smoking on campus among smokers and non-smokers on t1 level

	Smokers (N=8)	Non-smokers [*] (N=26)	Total (N=34)	*t*	*p*
Habitual smoking when stressed	4.4 (*SD*=.7)	3.9 (*SD*=.9)	4.0 (*SD*=.9)	1.298	.203
Habitual smoking when in company of smokers	3.6 (*SD*=1.3)	3.8 (*SD*=1.2)	3.7 (*SD*=1.2)	-.296	.769
Habitual smoking when in company of nonsmokers	2.5 (*SD*=1.7)	1.7 (*SD*=.9)	1.9 (*SD*=1.1)	1.923	.063
Habitual smoking when seeing others smoke	3.1 (*SD*=1.3)	3.5 (*SD*=1.0)	3.4 (*SD*=1.0)	-.816	.421
Habitual smoking due to bad weather	2.5 (*SD*=1.2)	2.4 (*SD*=1.2)	2.4 (*SD*=1.2)	.243	.810
Habitual smoking due to unconsciously following normal routine	2.6 (*SD*=1.6)	2.7 (*SD*=1.1)	2.7 (*SD*=1.2)	-.058	.954

coded as very unlikely (1) to very likely (5)
*non-smokers were asked to imagine the situation from a smoker's perspective

Pearsons correlation between habit and attitude resulted in a small, non-significant negative correlation. Pearson's correlation between habit and the intention to enforce is negative and nonsignificant. Therefore, habitual smoking on campus does not influence the acceptance of the smoking ban. Predicting attitude based on smoking status, habit and the interaction variable between smoking status and habit in the simple linear regression, the regression was significant with $F(3,30)=18.613$, $p=.000$, with an R^2 of .651. When predicting the intention to enforce by the independent variables smoking status, habit and the interaction of smoking status and habit, a significant regression model was present with $F(3,30)=3.926$, $p=.018$, with an R^2 of .282. It is observable that smoking status is the only independent predictor of acceptance. Habit and the interaction effect of habit and smoking status did not add explanatory value to the model (Table 7 and 8). The same results were reached with a bootstrapping sample (Table 7 and 8).

Table 7
Linear regression results of the predictors habitual smoking on campus, smoking status, and the interaction effect of habitual smoking on campus and smoking status on attitude taking together smokers and non-smokers on t1 level and in the form of bootstrapping

	b	*p*	95% CI	*b* bootstrapping (2000)	*p* bootstrapping (2000)	95% CI (bootstrapping 2000)
Habitual smoking on campus	-.146	.210	[-.380, .087]	-.146	.269	[-.470, .075]
Smoking status	.762	.000	[.543, .981]	.762	.001	[.475, .975]
Interaction (habitual smoking on campus * smoking status	.035	.715	[-.156, .225]	.035	.773	[-.247, .424]

Table 8

Linear regression results of the predictors habitual smoking on campus, smoking status, and the interaction effect of habitual smoking on campus and smoking status on intention to enforce taking together smokers and non-smokers on t1 level and in the form of bootstrapping

	b	*p*	95% CI	*b* bootstrapping (2000)	*p* bootstrapping (2000)	95% CI (bootstrapping 2000)
Habitual smoking on campus	-.139	.426	[-.490, .212]	-.139	.436	[-.556, .123]
Smoking status	.523	.003	[.193, .852]	.523	.001	[.285, .732]
Interaction (habitual smoking on campus* smoking status	-.016	.911	[-.303, .271]	-.016	.907	[-.366, .464]

Smoking restrictions at home. The mean on this item for smokers was 2.00 (*SD*=.756) and for non-smokers 2.12 (*SD*=2.12), with $t(32)=-.549$, $p=.587$. In this case, a higher mean can be interpreted as more present smoking restrictions at home, and both groups score on average on a partially restricted smoking ban at home.

Pearson's correlation between restrictions at home and attitude resulted in a slightly positive, insignificant correlation. The correlational analysis of restrictions at home and the intention to enforce concluded as well in a small positive but insignificant correlation. Thus, smoking restrictions at home do not influence acceptance of the smoking ban. A linear regression predicting restrictions at home, smoking status and the interaction effect of both on attitude demonstrated a significant model ($F(3,30)=21.324$, $p= .000$), with an R^2 of .681. A linear regression with restrictions at home, smoking status and the moderator effect as the independent variables and intention to enforce as the dependent variable displayed a significant regression equation ($F(3,30)=4.163$, $p=.014$), with an R^2 of .294. Therefore, smoking status is the single predictor and restrictions at home as well as the interaction between smoking status and

restrictions at home do not add explanatory value to the model, even when bootstrapping with a sample of 2000 (Table 9, 10).

Table 9

Linear regression results of the predictors smoking restrictions at home, smoking status, and the interaction effect of smoking restrictions at home and smoking status on attitude taking together smokers and non-smokers on t1 level and in the form of bootstrapping

	b	*p*	95% CI	*b* bootstrapping (2000)	*p* bootstrapping (2000)	95% CI (bootstrapping 2000)
Smoking restrictions at home	.068	.550	[-.162, .298]	.068	.490	[-.127, .285]
Smoking status	.754	.000	[.545, .964]	.754	.001	[.499, 1.033]
Interaction (smoking restrictions at home* smoking status	-.160	.081	[-.340, .021]	-.160	.065	[-.397, .060]

Table 10

Linear regression results of the predictors smoking restrictions at home, smoking status, and the interaction effect of smoking restrictions at home and smoking status on intention to enforce taking together smokers and non-smokers on t1 level and in the form of bootstrapping

	b	*p*	95% CI	*b* bootstrapping (2000)	*p* bootstrapping (2000)	95% CI (bootstrapping 2000)
Smoking restrictions at home	.074	.678	[-.285, .432]	.074	.513	[-.224, .276]
Smoking status	.515	.003	[.188, .841]	.515	.001	[.311, .749]

Interaction (smoking restrictions at home* smoking status	-.103	.459	[-.385, .178]	-.103	.146	[-.263, .020]

Perceived smoking among peers. Smokers presented a mean on the peer perception scale of 2.6 (*SD*=.7) and non-smokers a mean of 4.6 (*SD*=.6), with $t(32)=-7.727$, $p=.000$. For this construct, a higher mean can be interpreted as the social environment being more accepting of the smoking ban. Thus, a smokers' social environment, opposed to a non-smokers social environment, is less accepting of the ban. The individual item means expose that smokers' non-smoking friends are more accepting of the smoking ban than their smoking friends. The same is the case for non-smokers (Table 11). Also, non-smokers nearly never take a break with smoking friends. On the other hand, smokers do so on average a few times per week ($p<.01$). Also, according to the mean results, only some friends of the non-smokers on average smoke, whereas on average half of the friends of smokers consume tobacco products as well (Table 11).

Table 11
Means and standard deviations for the items on peer perception among smokers and non-smokers

	Smokers (N=8)	Non-smokers (N=26)	Total (N=34)	*t*	*p*
How many of your friend's smoke[1]	3.1 (*SD*=1.1)	4.7 (*SD*=.5)	4.3 (*SD*=1.0)	-5.776	.000
How often do you walk/take a break with smoking friends[2]	2.3 (*SD*=1.4)	5.0 (*SD*=.2)	4.3 (*SD*=1.3)	-9.976	.000
Are your nonsmoking friends accepting of the ban[3]	3.9 (*SD*=.6)	4.6 (*SD*=.9)	4.4 (*SD*=.9)	-2.038	.050
Are your smoking friends accepting of the ban[4]	1.1 (*SD*=1.6)	2.0 (*SD*=1.7)*	1.5 (*SD*=1.6)*	-1.032*	.321

[1]coded as all (1) to none (5)
[2]coded as daily (1) to never (5)

[3]coded as not at all (1) to completely (5)
[4]coded as not applicable (0) to completely (5)
*n=7 for non-smokers; n=15 for the total amount of respondents; *t*(13)

Pearson's correlation between peer perception and attitude is positive and significant. The same is the case between the variables peer perception and the intention to enforce. Thus, perceived smoking among peers influences acceptance of the smoking ban. A simple linear regression including peer perception, smoking status, and an interaction effect with smoking status indicates a significant regression model ($F(3,30)=32.364$, $p=.000$), with R^2 of .764. Predicting the intention to enforce on the basis of peer perception, smoking status and an interaction effect, a significant model was observed ($F(3,30)=10.363$, $p=.000$), with an R^2 of .509. Peer perception is adding explanatory value to the model, but confounded by smoking status due to collinearity. No interaction between peer perception and smoking status was found (Table 12, 13). The same results could be interpreted when applying bootstrapping (Table 12, 13).

Table 12
Linear regression results of the predictors perceived smoking among peers, smoking status, and the interaction effect of perceived smoking among peers and smoking status on attitude taking together smokers and non-smokers on t1 level and in the form of bootstrapping

	b	*p*	95% CI	*b* bootstrapping (2000)	*p* bootstrapping (2000)	95% CI (bootstrapping 2000)
Perceived smoking among peers	.600	.000	[.297, .903]	.600	.009	[.170, .880]
Smoking status	.128	.538	[-.292, .548]	.128	.650	[-.241, 1.440]
Interaction (perceived smoking among peers* smoking status	-.169	.262	[-.470, .133]	-.169	.346	[-.625, .716]

Table 13

Linear regression results of the predictors perceived smoking among peers, smoking status, and the interaction effect of perceived smoking among peers and smoking status on intention to enforce taking together smokers and non-smokers on t1 level and in the form of bootstrapping

	b	*p*	95% CI	*b* bootstrapping (2000)	*p* bootstrapping (2000)	95% CI (bootstrapping 2000)
Perceived smoking among peers	.837	.001	[.379, 1.296]	.837	.001	[.296, 1.406]
Smoking status	.103	.742	[-.532, .739]	.103	.544	[-.106, .546]
Interaction (perceived smoking among peers* smoking status	.247	.278	[-.209, .703]	.247	.102	[.012, .663]

Summary. It can be summarized that smokers scored on average below neutral on acceptance, whereas non-smokers scored above neutral. This contrast is clear despite a very low sample size. Additionally, the intention to enforce the smoking ban, also indicating especially the acceptance of non-smokers, was below neutral. Furthermore, it can be interpreted that acceptance stayed constant over time, even though the mean of smokers decreased slightly. Specifically, the four smokers' attitude towards the protection of health and the importance of seeing smoking as an addiction changed negatively after the ban introduction. However, both groups agreed more post-ban that it is annoying to leave campus to smoke. When researching habitual smoking on campus and the interaction effect with smoking status, it can be concluded that both variables did not add explanatory value considering acceptance. The same was observed for having smoking restrictions at home and its interaction with smoking status on acceptance. Smoking status is a strong predictor of acceptance, and peer perception expectations seem at least to be part of that causal mechanism, but due to collinearity, this predictor is confounded by smoking status. This is not the case for habitual smoking on campus and smoking restrictions at home.

Discussion

This study was conducted to investigate the current acceptance of the University of Twentes' smoking ban among students. Also, it aimed to research if the acceptance of the ban changed over time by comparing data from 2019 and 2021. In order to research possible factors that could facilitate or hamper the acceptance and compliance with the smoking ban, the explanatory effects of habitual smoking on campus, the occurrence of another smoking restriction at home, and the influence of peer perception were investigated.

The results displayed that acceptance based on attitude differs significantly between smokers and nonsmokers, with smokers being in disfavour since they perceive the new smoking ban as discriminatory and patronizing. Acceptance based on attitude overall stayed constant compared to the study by Ditzel et al. (2019). Acceptance on the basis of the intention to enforce the ban was low for both groups. As it is supposed to indicate the acceptance of non-smokers especially, non-smokers can be seen as less accepting of the ban compared to their highly positive attitude towards the ban (Harris et al., 2009). Smoking status is a strong predictor of acceptance, with perceived smoking among peers as adding to the explanatory model, although it is confounded due to collinearity. This was not the case for habitual smoking on campus and other smoking restrictions at home, showing no explanatory value.

Acceptance of the smoking ban. As a study of Hall et al. (2015) reports, it is common that non-smokers are more in favour of a smoking ban on campus, whereas smokers are not since they perceive the ban as discriminatory and patronizing (Bartington et al., 2020; Ditzel et al., 2019). Several other studies also report these results (Fichtenberg & Glantz 2002; Heloma & Jaakkola 2003; Seo et al. 2011). An important reason for the low acceptance of smokers could be that they are annoyed to leave the campus every time they want to smoke, as the results of this study indicate. The study by Borland and Owen (1995) supports that a high need to smoke in combination with a smoking ban does not change smoking behaviour. Thus, smokers' addiction to nicotine leads to violations of the ban (Borland & Owen, 1995). This is supported by the results since smokers agree more with the fact that nicotine has addictive compounds, which should be considered by a smoking ban at university. Therefore, they might perceive themselves as unfairly treated and the previous ban as better (Parry et al., 2000).

The intention to enforce the smoking ban is very low for both groups, in particular for non-smokers, whose acceptance of the smoking ban could be interpreted more concretely on the

basis of their intentions to enforce the ban (Harris et al., 2009). However, the willingness to enforce rules varies remarkably in general among individuals (Fischbacher et al., 2013). Particular personality traits could explain a stronger intention to enforce various rules, independent of smoking status (Friehe & Schildberg-Hörisch, 2018). It has been studied that a stronger risk aversion, higher scores of conscientiousness and neuroticism, and more perceived self-control are positively associated with ban enforcement (Friehe & Schildberg-Hörisch, 2018). Also, problem-solving skills can enhance rule enforcement (Super, 2006).

Change in acceptance. The results of the change in acceptance indicated that the acceptance of the smoking ban on campus remained fairly constant over time for both smokers and non-smokers. A study by Borland et al. (1990) showed that the implementation of a smoking ban convinced smokers six months after its introduction and led to a change in acceptance. However, some smokers stayed unconvinced and disapproved of the smoking policy. In comparison to this study, it would be a possibility that the students' acceptance did not increase due to the limitation of not fully interacting with the smoking ban due to COVID 19. Also, by approaching the end of lockdown due to COVID-19, the consequence of leaving campus for each cigarette becomes more real, which could explain the minimal downward trend in acceptance among smokers.

Habitual smoking on campus. Habit did not influence acceptance of the smoking ban according to this study. However, this finding is questionable because most respondents were non-smokers, who filled in imaginary perceptions, which were not directly based on the viewpoint of a smoker. Although ex-smokers filled in the study, who could be able to imagine the perception of smokers better, not many ex-smokers were included in the non-smokers category. It was observable that smokers are more likely to violate the smoking ban when stressed, and when in company of other smokers. A study by Perkins and Grobe (1992) stresses that the desire to smoke is facilitated by feeling stressed, resulting in the preservation of smoking and in this case not adhering to the ban. A different explanation other than habitual smoking induced by situational cues could be lower self-control in these moments. Meaning that outside factors like stress or being with others who smoke, could act as a barrier to self-control, leading to violation of the smoking ban (Bandura, 1997).

Smoking restrictions at home. This study states that the occurrence of other smoking restrictions at students' homes is not related to the acceptance of the smoking policy at the

University of Twente. However, it is essential to prohibit any exceptions to smoke free environments in order to avoid health dangers (World Health Organisation, 2017). Therefore, it might be possible that a partial smoking ban at home is not exhaustive enough to make a difference in effect. Also, students do not have to self-control themselves as much, thus do not practice self-controlling their smoking behaviour, which could decrease their compliance with the smoking ban on campus as well (Bandura 1997, 2001; Bandura et al., 2001; Maddux, 1995).

Perceived smoking among peers. The fact that smoking status did not add explanatory value to the regression equation implies that the predictor 'perceived smoking among peers' is confounded by 'smoking status' due to high collinearity (Belsley et al., 2005). Theoretically, smoking status is a 'distal' determinant, which operates through a more 'proximal' determinant, here peer perception (Ajzen, 1988; Bandura, 1997; Carvajal & Granillo, 2006; Fishbein et al., 2001, Flay & Petraitis, 1994). Thus, peer perception seems at least part of that causal mechanism that explains acceptance of the smoking ban. According to the social perception theory, perceiving others as role models could lead students to copy their behaviour, in this case following the smoking ban or not, depending on the social surrounding of a student (Dijksterhuis & Bargh, 2001). This study acknowledges that smokers spend their breaks with other smoking friends on average a few times per week. The non-smokers in this sample, however, never have a break with smoking friends.

Limitations. The results of this study cannot be interpreted without being aware of the limitations. Starting with the fact that the COVID 19 situation interfered with the adjustment to the smoking ban due to limited interaction on campus. Students could thus not get acquainted with the new smoking policy and be convinced by the advantages of it, leading to a possible increase in acceptance (Borland et al., 1990).

When further inspecting the survey design, the item on habit could have been misinterpreted regarding the "not" complying with the ban. The formulation "Even if you as a smoker are motivated to comply with the new smoking ban, you may not do so sometimes. In your opinion, what are the chances that this will occur in the following situations?" could have confused respondents. It is necessary to re-formulate that in a follow up study, for example "non-compliance with the smoking ban is possible, which reasons would you indicate as leading to you possibly not following the smoking ban?". Also, the item on enforcement of a smoking ban at home could be more specifically. At the moment, the item used in data analysis asked for

the existence of a completely applied, partially applied or not at all applied smoking ban at home. In this study, partially applied was the respondents mean on average, however it is unsafe to say what the respondents understand under a partially applied smoking ban at home.

Considering the data collection, it has to be taken into account that the overall sample size was very low, which makes any form of interpretation of the results difficult since a larger number of respondents would increase the study results' reliability (Hackshaw, 2008). Furthermore, more non-smokers than smokers were part of the survey in comparison. Also, the variable "intention to comply" could not be used due to insufficient responses. It might have given a better indication regarding compliance with the ban instead of attitude and/or intention to enforce.

In regard to data analysis, it was aimed at creating a construct out of three items for the variable smoking restrictions at home. It can be said that the three items are psychometrically very different, thus attempting to create a construct is debatable (Kerlinger, 1986). In this study, only one of the three items was used. The alternative is to create an index, which implies that the three scores will be added without assuming a single construct (Jones, 1983). In addition to that, the item "When smoking at your home is (partly) restricted, to what degree is this restriction imposed by others, or self-imposed?" was coded as imposed by others (1), self-imposed (2), and both in combinations (3). This coding could explain the low alpha.

Furthermore, parametric analyses of the current data were conducted. However, due to low sample sizes and questionable normal distributions, the data analyses were duplicated by also applying nonparametric tests (Chan, 2003). The results of the parametric tests were still used since the results on both tests were identical, however not highly credible. This was not done for testing the interaction effects because moderation effects are analysed standardly according to the scheme applied in this research (Iacobucci, 2010). These analyses were conducted anyway since a possible correlation was of interest and peer perception indeed displayed a significant relation with acceptance and the intention to enforce. Also, the same analyses were repeated with a bootstrapping sample of 2000 since bootstrapping could be an alternative to test moderation effects when parametric analyses are not applicable (Russell & Dean, 2000). However, this did not change the interpretation of the results. A reason could be that with a low sample size, and drawing from the sample 2000 times randomly, effects are unchanged since bootstrapping overall is just a resampling method of the existing responses (Kock, 2018).

Implications for further studies. The determinants tested in this study were probable influences on the acceptance and thus effectiveness of a smoking ban on campus. Considering the variables tested, only the perceived smoking among peers adds to the understanding of acceptance. The fact that smoking status is such a strong determinant, clearly shows that there must be other cognitions that can explain the contrast between smokers and non-smokers acceptance/compliance. The habitual smoking on campus should be explored on the beliefs of smokers only to possibly gain a clearer understanding by excluding imaginary beliefs. The variable of other restrictions at home could be extended to other areas where students could be confronted with smoking bans, for instance public spaces, which might affect their self-control in general. Overall, the determinant 'self-efficacy' could be an important one since it seems to have a strong influence on the intention to enforce a smoking ban and violations of the ban in moments of perceived stress or seeing other smoke (barriers to self-control). Baumeister et al. (1994) state that the failure of accurate self-control is the basis of several social and individual problems, including smoking dependence. As an example, future items on self-control could be based on the existing self-control scale by Tangney et al. (2004). Next to the perceived smoking among peers, the students' beliefs in current smoking norms on campus could be investigated additionally since those also influence acceptance and compliance with the ban (Seo et al., 2011). In general, further studies should include a higher sample size and reach a balance of smoking and non-smoking students, for example by using SONA (Hackshaw, 2008). Also, data should be collected when the smoking ban can be experienced on campus and campaigns actively advertise the necessary compliance with it (instead of no presence on campus and due to COVID-19 and the lockdown proactive campaigns).

Recommendations for policy. The study offered some valuable information that might be important for the University of Twente when designing persuasive messages in favour of the new smoking ban, especially for the subgroups of still disapproving smokers and non-smokers with a low intention to enforce the ban. Therefore, a future intervention should be tailored to smokers and non-smokers differently.

Smokers. It could be an approach to continue raising awareness of health benefits for the whole campus environment when complying with the ban by using reminders and referring to cessation support at the UT (Burns et al., 2016; Ramachandran et al., 2020). Information should be given in a sensitive and caring manner, also strengthening the smokers feelings of inclusion,

so they will not feel discriminated against (Burns et al., 2013; Greenberg, 1994; Parry et al., 2000). An example would be by using media campaigns, role models, or screensavers on computers in public areas, like the library (Hansen et al., 1991; Perkins & Craig, 2003). This might increase their own motivation to follow the ban, which is central to quitting attempts (Haxby, 1995).

Non-smokers. The enforcement of the ban is essential. Since peer perception has an influence on compliance with the ban, it could be considered to select some role models at the UT, which could do an 'enforcement training program'. By enhancing critical traits like risk aversion, self-control and problem solving, the intention to enforce could be strengthened, leading to enforcement of the ban when it comes to rule violations (Friehe & Schildberg-Hörisch, 2018; Super, 2006). Role models could spread the desirable image of a smoke free campus and in the long term change the social norm of smoking on campus at the University of Twente by denormalizing smoking on campus and correcting wrong beliefs of smoking as favourable based on peers in an active and ongoing fashion (Berkowitz & Perkins, 1987).

Conclusion

The acceptance of a campus-wide smoking ban that aims to reduce (passive) smoking differs between smoking and non-smoking students. A change in acceptance was not observed due to the lockdown limiting interaction on campus. Thus, acceptance needs to be further researched in the upcoming years. Also, since habitual smoking on campus and smoking restrictions at home as influencing factors on acceptance were insignificant, other determinants like self-efficacy and existing social norms need to be considered in the future.

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