



Application of Theory of Planned Behavior in Prediction of Factors Affecting the Intention of Plagiarism

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Article Info

Article Type:

Original Article

Article history:

Received 02 Dec 2017

Accepted 15 Oct 2018

Published 20 Dec 2018

Keywords:

Plagiarism

Planned Behavior Model

Attitude

Abstract

Background & Objective: Plagiarism has been turned into a major concern for universities. The theory of planned behavior (TPB) is probably one of the most important predictive patterns for plagiarism in students. This cross-sectional study was performed to determine the use of TPB in the prediction of factors affecting plagiarism in 2016.

Materials and Methods: In total, 200 MSc students at the stage of writing a dissertation were selected from Iran University of Medical Sciences, Tehran, Iran through convenience sampling. Age of students was 29.25 ± 13.4 years. Moreover, 75.5% of the subjects were married, and 45.5% of the students were male. Data were collected using a self-administered questionnaire divided into three sections of demographic characteristics, planned behavior model constructs, and intent of plagiarism. In addition, data analysis was performed in SPSS version 19 using descriptive and analytical statistics (t-test, ANOVA, and multivariate regression).

Results: A significant positive relationship was observed between positive attitude and intent of plagiarism. In other words, positive attitude significantly predicted the intent of plagiarism ($P=0.007$). On the other hand, a reverse and significant association was found between negative attitude and intent of plagiarism. Furthermore, there was a direct and significant correlation among subjective norms, perceived behavioral control, and intention.

Conclusion: According to the results of this study, a direct and significant relationship exists between positive attitude toward and intent of plagiarism. In this regard, proper educational programs can be designed to correct this attitude.

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This article is referenced as follows: Salehi L, Ghasemzadeh M. Application of Theory of Planned Behavior in Prediction of Factors Affecting the Intention of Plagiarism. J Med Educ Dev. 2018; 11 (31) :52-62

Introduction

Plagiarism has become an important problem in modern universities (1). Generally, plagiarism is defined as the use of thoughts, words, and ideas of others inadvertently or deliberately without proper citation (2). Over the past few decades, there has been a growing increase in the incidence of this issue (3), and it has become prevalent in all countries, universities, and disciplines (4). This phenomenon has imposed additional burdens on educational institutions (5), and has been considerably common among graduate students (6). Nevertheless, the incidence rate of plagiarism is higher in developing countries due to lack of proper education and unawareness of the issue (7).

In Iran, selling thesis and dissertations has become a social concern. Misuse of articles, lobbying the publication of papers, and use of foreign articles with no proper citation are clearly observed and have no specific incidence rate. The undesirable effects of this phenomenon among academics have increased because the community considers the educated people and writers as sophisticated individuals and regards the university and academic figures as the reference for common norms of society.

Therefore, this kind of scientific misconduct leads to a decline in efficient and healthy scientific development process of the country, turning it into a factory of certificate production instead of science production (8).

In the literature, factors described as the leading causes of plagiarism include weak English language proficiency and writing skills (9), having social interests, and taking other people's words rather than tangible assets (5). In a study by Zamani, Azimi, and Soleimani on 370 university students, factors involved in committing plagiarism by students included attitude, unawareness, easy access to the Internet, lack of self-efficacy in research and article writing, mental pressures, lack of a proper mechanism for detecting and punishing the offenders, social and cultural condition of the society, teachers' response to students' plagiarism, and special cyberspace situations (10). In a qualitative research by Riasati and Rahimi, factors such as students' unawareness of plagiarism, poor essay-writing skills, linguistic disability, lack of interest in the topic, and social pressures were recognized as the most important causes of plagiarism (11). Poor time management, fear of failure, improvement of academic condition, personal and family issues, lack of

English proficiency (12), students' unawareness of plagiarism rules, and failure to summarize the information were also recognized as other factors involved in plagiarism (13).

Evidence shows that theory of planned behavior (TPB) has yielded favorable results regarding the recognition and understanding of factors affecting plagiarism, in a way that

the studies conducted in this area have confirmed the efficiency of this model in determining plagiarism among students (14, 16). According to this theory, the behavior affected by the attitude toward this issue includes subjective norms, and perceived behavioral control affects the behavior directly or by intention (17).

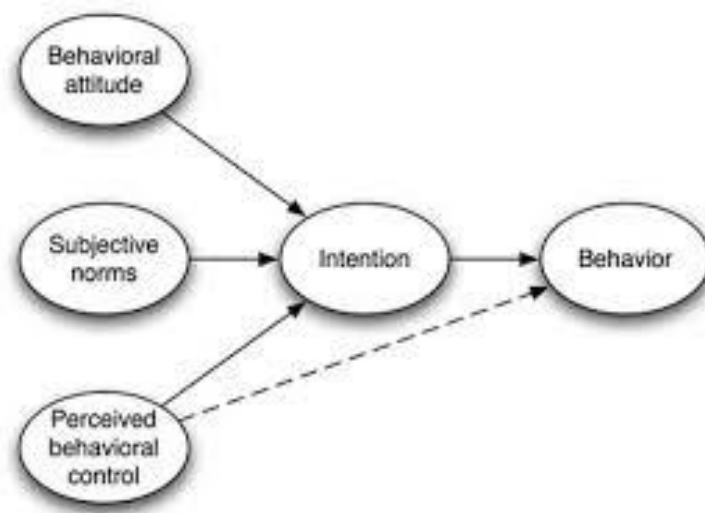


Figure 1: Planned Behavior Model

Despite the ability of this model to predict plagiarism, little research has been conducted in this field (18). In addition, no study has been conducted to assess the ability of PTB in Iran. With this background in mind, this study aimed to use PTB to predict factors affecting plagiarism in students of Iran University of Medical Sciences, Tehran, Iran.

Materials and Methods

This cross-sectional research was conducted on 200 MSc students in Iran University of Medical Sciences in 2016, who were in the middle of writing their theses. The inclusion criterion was approval of the research proposal by the graduate council of the university. A total of 200 students were

selected using convenience sampling by considering 10% prevalence of plagiarism in the articles evaluated in the research of Baždarić et al. (19) in 2012 and based on the sample size equation presented below:

$$n = \frac{Z^2_{(1-\alpha/2)} P(1-P)}{d^2}$$

At first, the research objectives were explained to the participants, and they were assured of the confidentiality terms regarding their personal information. It should be noted that all students of the research were required to submit an article to the graduate council for graduation. Data were collected using a questionnaire consisting of three main parts, the first and second of which included demographic characteristics of students and the questionnaire by Mavarinc et al., respectively (20). The psychometric properties of Farsi version of the mentioned questionnaire has been assessed in Iran, and its validity and reliability have been confirmed. In this regard, the reliability of the questionnaire has been reported at the Cronbach's alpha of 0.79 (21). The third section included the assessment of students' intention with four questions (how likely is it that you can introduce the work of others as your work or how likely is it that you perform

group work and introduce it as an individual job; how likely is it that you present your previous work as a new work, and accept the dedication of a work to you, in which you had no part). The Cronbach's alpha of this section was estimated at 0.79.

According to the total score of intention, higher scores are indicative of a higher intention to perform this behavior. The items of the second and third parts of the questionnaire were scores based on a five-point Likert scale. It is noteworthy that the present study was approved by the ethics committee of Iran University of Medical Sciences. Furthermore, data analysis was performed using descriptive and analytical statistics (t-test, ANOVA, and linear regression analysis). In addition, the normality of the data was confirmed applying the Kolmogorov-Smirnov test.

Results

In this study, mean age of the subjects was 29.25 ± 4.13 , the majority of whom (69.5%) were within the age range of 24-29 years and only some of them (8%) were above 40 years. In addition, 45.5% of the students were male, and 75.5% of them were single (Table 1). According to the results, the mean and standard deviation of the PTB constructs

were, as follows: 25.04 ± 5.59 for positive attitude, 7.5 ± 41.40 for negative attitude, 0.89 ± 2.22 for subjective norms, and

13.59 ± 2.22 for perceived behavioral control. In addition, the mean and standard deviation of intent was reported at 13.59 ± 4.31 (Table 1).

Table 1: Mean and SD of planned behavior Model Constructs based on Demographic Characteristics

Demographic Characteristics	N (%)	Positive Attitude(M/S)	Negative Attitude(M/S)	Subjective Norms(M/S)	Perceived Behavior(M/SD)	Intention (M/S)
Age(y)						
20-24	19(9.5)	24.63(5.5)	26(18.52)	7.89(3.41)	9.53(1.12)	12.84(3.62)
25-29	139(69.5)	25.40(5.59)	17(5.39)	9.27(2.13)	8.83(3.40)	13.91(4.64)
30-34	36(18)	24.66(5.87)	18.66(5.31)	9.38(3.65)	8.55(2.76)	13.03(3.40)
35-39	16(8)	24.18(5.28)	18(5.57)	9(2.98)	9.68(1.81)	13.74(4.44)
40<	8(4)	6.62(5.37)	18.5(5.23)	8(3.20)	7.87(1.72)	11.50(2.27)
P Value**		0.27	0.68	0.46	0.45	0.83
Sex						
Male	91(45.5)	25.18(5.04)	17.72(5.13)	8.98(3.32)	9.11(1.92)	13.60(4.56)
Female	109(54.5)	24.93(6.04)	17.15(5.62)	8.81(3.49)	9.21(2.45)	13.58(4.08)
P Value*	200	0.74	0.45	0.75	0.71	0.73
Marital Status						
Single	151(75.5)	25.14(5.38)	17.18(5.26)	8.96(3.27)	9.19(2.17)	13.36(3.68)
Married	49(24.5)	25.75(6.26)	18.10(5.79)	8.65(3.83)	9.08(2.39)	13.58(4.08)
P Value*		0.67	0.3	0.76	0.57	0.09
Total Mean(SD)	200(100)	25.045(5.59)	17.41(5.40)	8.89(3.41)	9.16(2.22)	13.59(4.31)

t-test ** Anova

According to the results of the study, no significant difference was observed between different age groups in terms of positive and negative attitude, subjective norms and perceived behavioral control ($P > 0.05$). Furthermore, these groups had no significant difference regarding the plagiarism intention

($P = 0.83$). Furthermore, the results were indicative of no difference between male and female subjects in terms of intent and pattern constructs ($P > 0.05$). Similarly, no significant difference was found between married and single students regarding the TPB constructs and intention ($P > 0.05$) (Table 1).

In the present study, Pearson's correlation test was applied to assess the correlation between TPB constructs for normality of the data. According to the results of this test, a significant association was found between the intention of plagiarism and the positive attitude toward this issue. In addition, there

was a weak, reverse and significant relationship between negative attitude and intention. Meanwhile, there was a weak, positive and significant correlation among subjective norms, perceived behavioral control, and intention (Table 2).

Table 2: Pearson Correlation between Constructs of Planned Behavior Model

	Positive Attitude	Negative Attitude	Behavior Control	Subjective Norms	Intention
Positive Attitude	1				
Negative Attitude	-0.410**	1			
Behavior Control	0.249**	0.324**	1		
Subjective Norms	0.445**	0.265**	0.269**	1	
Intention	0.133**	-0.214**	0.139*	0.240*	1

Note: Scale reliabilities are reported on the diagonal $P < 0.05^*$ $P < 0.01^{**}$

Furthermore, the regression analysis was used to determine the variables predicting the intention of plagiarism based on TPB. In this

respect, it was determined that the positive attitude toward plagiarism significantly predicted the plagiarism intention (Table 3).

Table 3: Linear regression of Plagiarism Intention by using of Planned Behavior Model constructs

Variables	B	SE	β	t	P
Intention					
Intercept	6.481	1.621			
Positive Attitude	0.170	0.062	0.221	2.748	0.007
Negative Attitude	0.070	0.061	0.088	1.142	0.255
Subjective Norm	0.141	0.097	0.111	1.444	0.150
Perceived Behaviors	0.041	0.143	0.021	0.286	0.755

R=0.34

R²=0.118

Discussion

According to the results of the present study, positive attitude toward plagiarism among graduate students predicted the intention for this behavior. The graduate course is designed in a way that students studying in this course are required to successfully pass their lessons and engage in research, as well as report and essay writing. Therefore, the possibility of occurrence of plagiarism in this group of students is higher, compared to other students (22).

According to TPB, the occurrence of the behavior can be predicted by constructs of attitude, subjective norms and perceived behavioral control (23). The attitude of a person toward a behavior means that how much the behavior is acceptable and joyful to the individual and depends on the judgement of the person about his behavior and its impacts and results (24). According to the results of the present study, there was a relationship between positive attitude and plagiarism intention among the subjects. In this regard, our findings are in line with the results obtained by other studies (18, 24-25). According to previous studies, attitude toward a behavior was one of the most effective factors for predicting the incidence of the behavior (26).

According to world records, numerous studies have been conducted to assess the attitude of students toward plagiarism. In a study by Papavak et al. (27), the positive attitude of first-year students in medical sciences in a university of Croatia toward plagiarism was at a moderate level, which showed the observing of the copyright law by a large number of students. Results obtained by Papavak showed that the negative attitude of students toward plagiarism was at a moderate to severe level. In addition, 59% of the students regarded plagiarism to be harmless, whereas 63% and 35% of the subjects considered this issue to be insignificant and acceptable in some conditions, respectively.

Attitude is considered as a key constituent of understanding the acceptance of individuals and maintaining particular behavioral attitudes, which has the ability to teach and learn (26). One can influence the attitudes of individuals by increasing the awareness of students about copyright laws and intellectual property rights of individuals as one of the components of adaptation of scientific works (27). Obviously, we can affect the intention of performing a behavior by students and create an academic environment with no misconduct by creating a negative attitude toward scientific abuses.

Despite the results of other studies (28-30), results of the multivariate regression analysis showed no predictive relationship between subjective norms and intention, as well as between perceived control and intention. These factors may affect the mediating variables of plagiarism intention, including level of education, age, gender, and background. In this regard, studies have shown that in other behaviors, subjective norms affected the intention due to having a background in this regard (31). Given the lack of consistency of these results with other studies (24, 25), it is suggested that more studies be conducted to determine the relationship between the constructs of this pattern.

In the present study, the value of R was reported to be 34%, which was interpreted as the level of associations between the variables related to plagiarism behavior. According to the value of R², it was demonstrated that the variables of the study only explained 12% of the factors affecting the behavior of plagiarism behavior. In total, 88% of the factors for determining the plagiarism intention were either unknown or not evaluated in the present research. Therefore, it seems necessary to recognize and evaluate other effective factors in this regard.

However, obtaining this type of result seems logical considering the findings of other studies. In this respect, York et al. classified the plagiarism factors into two intentional and non-intentional categories (32).

In assessing the factors and origins of plagiarism, MaCabe pointed out personal factors, including gender, GPA, professional ethics, self-esteem, progress goals, reaction of the executive and management factors of an organization towards it, consequences and penalties considered for plagiarism, influence of peer cheating, positive attitude of peers toward cheating, as well as severity and amount of punishment conceived by the individual (33). Moreover, the role of target orientation of students, the role of cultural factors (e.g., Eastern cultures) based on collectivism and students' desires with functional goals and acquiring scores were considered important in the phenomenon of plagiarism (34).

In the evaluation of predictive factors of plagiarism with the use of TPB, Stone et al. concluded that the TPB constructs determined 21% of the variance of plagiarism intention and 36% of the plagiarism behavior (35). Unfortunately, the plagiarism behavior was not evaluated in the present study. In line with the results obtained by Ahmadi (36), our

findings showed that gender and marital status had no significant impact on the plagiarism intention. In addition, no significant difference was observed between various age groups considering the plagiarism intention.

According to the results of the current research, it is recommended that factors other than the use of TPB be assessed to predict the plagiarism intention among students. It seems that TPB was the most important predictor of plagiarism intention and positive attitude toward this issue. In other words, the more the attitude of a person toward plagiarism is positive, the higher is the possibility of performing plagiarism behaviors by this individual. Given the lack of proper emphasis on material and tangible property of individuals in the culture of Iran, improving the awareness of people about the intellectual and subjective rights of individuals and correcting their attitudes in this field is of paramount importance.

Some of the major drawbacks of the research included lack of ability to separate students based on their field of study due to low sample size and inability to study the plagiarism behavior itself. On the other hand, performing research with the use of TPB to assess the plagiarism behavior for the first

time was one of the strengths of the current research.

Conclusion

Among the TPB constructs, positive attitude toward plagiarism significantly predicted the plagiarism behavior. Therefore, effective steps can be taken toward correcting the attitude of students toward this phenomenon by designing proper educational programs.

Acknowledgments

This article was extracted from a study conducted in Iran University of Medical Sciences with the code of D/95/33/29715. Hereby, we extend our gratitude to the participants for assisting us in performing the research.

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