# The Intervention of Nudge With the Social Norms
## Approach to Increase the Reading Duration

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**ABSTRACT**
The duration of visitors who come to read books in the Library of the Faculty of Psychology is still low. This study aims to improve the reading behaviour of visitors to the Library of the Faculty of Psychology, State University of Makassar. This research used the theory of planned behaviour as a basis for theory and nudges theory with a social norms theory approach. The intervention was implemented by giving a visual message to participants shortly after registering at the library. The intervention was tested by a paired t-test through the experimental method with one group pre-test and post-test design with a total sample of 10 people. The experimental results show that; the provision of nudge interventions with a social norm approach has a significant effect on increasing the reading duration of students who visit the library of the Faculty of Psychology, Universitas Negeri Makassar. This research was conducted at the end of the semester so that the conditions of the participants and the library were not as usual. Library conditions are thought to affect the reading duration.

*Keywords: Reading duration, nudge, social norm*

## 1. INTRODUCTION

The reading duration of Indonesian society is still low. Samuels and Wu [1], in their study, explain that reading duration is related to productivity in reading. Individuals who spend 40 minutes reading more easily understand difficult words in text than those who spend less reading time. The easier it is to understand the text, the higher the chance of getting something in the text. The reading time of Indonesian people is only 2-4 hours per day, while the standard of UNESCO is 4-6 hours per day [2]. Reading behavior should be normal for students to do. Reading behavior is carried out for several reasons, including free time, adding insight, and confirming or rejecting predictions.

Reading behavior begins with the intention to read. Referring to the theory of planned behavior, initiated by Ajzen[3], reading behavior occurs because of attitudes toward behavior, subjective norms, and perceived behavioral control. Attitudes toward reading behavior are a form of evaluation about the benefits or disadvantages of the behavior. Subjective norms of reading behavior are individual considerations of the social pressure felt by individuals to engage in reading behavior and encouragement to contribute to the behavior. Perception of behavioral control is a belief

about the presence of things that hinder the emergence of behavior. One factor that can influence reading behavior is motivation to read [4]. Motivation is a matter that discusses reading behavior at the individual level. Motivation refers to attitudes toward reading behavior and interest in the behavior. Attitudes toward the behavior are related to feelings or beliefs about it. Reading motivation is a set of values, beliefs, and goals related to topics, processes, and results when reading a book. Reading motivation is an internal dynamic that causes someone to read.

According to the theory in the picture above, a behavior arises because of three factors. The first factor is behavioral belief and outcome evaluations on reading behavior will affect attitudes towards it. The second factor is a normative belief which is also known as significant motivation to comply (the desire to follow or obey others). Reading behavior will affect subjective norms on it, and the third factor is control belief (belief in behavioral barriers) that will affect perceived behavioral control of reading behavior.
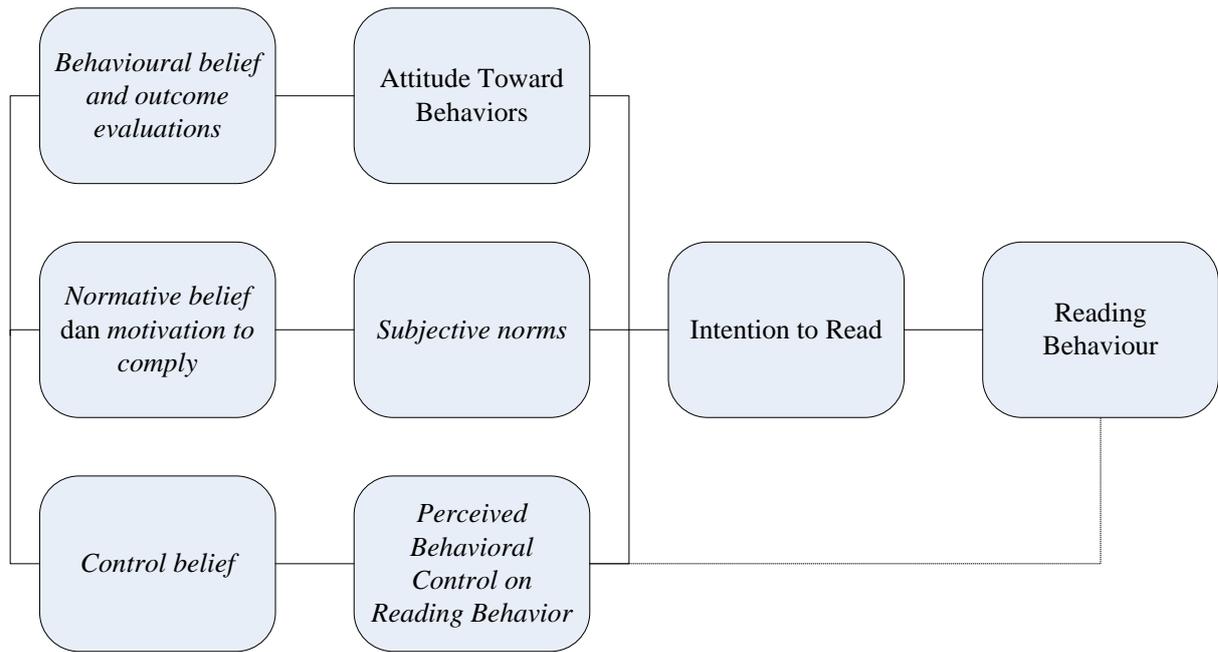
**Figure 1** The theory of planned behaviour.

In this study, subjective beliefs are used as messages in interventions used to improve reading behavior. The interventions carried out in this study intervened in the social norms of library visitors using nudge theory [5]. Nudge is the presentation of choices on individuals who can influence or change the behavior of individuals to choose. The selected choices are made incentives, and choices that are not chosen are not prohibited from being chosen. Only choices are made in the presentation of their choices as individuals. Nudge pattern is giving free options to individuals to make decisions that can help and have a positive impact on themselves and the environment.

Nudge is also defined as an attempt to design choices to change individual behavior predictably without blocking other choices. The two main principles of nudge are libertarian paternalism and choice architecture. Libertarian paternalism is a pattern of action that gives individual freedom in making choices or making decisions. Choice Architecture is the act of designing choices in various ways to lead individuals to them [5]. Nudge theory is built from several Paternalist heuristics concepts that influence individuals in assessing things, building perceptions, or making decisions that are often biased. The term heuristics is mentioned in Kahneman's book [6] Thinking Fast and Slow. Heuristics is a cognitive shortcut that occurs because of the cognitive limitations of humans that have been given. Dolan, Hallsworth, Helpern, King and Vlaev [7] provide a simple mnemonic called MINDSPACE (Messenger, Incentives, Defaults, Salience, Salience, Priming, Affect, commitment, and ego). Mnemonics are forms of heuristics to determine methods for changing behavior.

**Table 1.** Nudge Principles

| Messenger | Individuals are very influenced by who conveys information |
|---|---|
| Incentives | Incentives by emphasizing the opportunity for someone to lose something they have has a stronger influence on individual behavior than giving incentives that are not yet owned |
| Norms | Individual behavior is strongly influenced by the behavior of those around him |
| Defaults | Individuals tend to accept choices that have become a habit easily and generally, and individuals are fraid of change |
| Salience | Individual attention is strongly influenced by things that are new, prominent, have characteristics, are familiar and relevant to the individual |
| Priming | Individuals are often influenced by subconscious impulses |
| Affect | Emotions or moods can strongly shape individual behavior |
| Commitment | Individuals tend to choose to act consistently with what has been said or promised to the people |
| Ego | The individual tends to behave which can make him feel good about himself or make him feel better |

According to the nudge theory, choices can be designed to direct individuals toward better decision making by displaying options from different points of view. The assumption built based on this intervention is to provide information to library visitors that there is a library visitor reading behavior study in a day. This information is expected to become a social norm for visitors.

Berkowitz [8] states that social norm theory explains about individual behavior that is influenced by wrong perceptions about how people around them think and act. Interception is the difference between what individuals think about the attitudes and behavior of the people around them and what happens with the surrounding people. This social norm approach of nudge is applied as an intervention in this research. Social norm theory emphasizes that behavior is carried out because of pressure from the social environment. By combining the two approaches, the intervention will be designed by giving a visual message that contains the actual conditions of reading behavior around visitors and given when visitors register at the library. The nudge method to be used is norms, explicitly social norms in the form of visual messages (pamphlets) about the information on the reading behavior of people of the same age group. Social norms are behavioral expectations or regulations in society or groups.

Berkowitz [8] mentions that there are three types of interception, namely pluralistic ignorance, false consensus, and false uniqueness. Ross, Greene, and House [9] explain that false consensus is an interception of individuals who believe that their behavior is following the behavior of those around them, when in fact it is not. Larimer and Neighbors [10] found that interventions with a social norm approach can correct the false consensus of people who gamble and also succeed in reducing those gambling behaviors.

In the context of reading behavior, these interceptions can occur, mainly false consensus. The low reading duration can be a result of false consensus conducted by library visitors. Interventions with a social norm approach can eliminate false consensus by describing the actual conditions of the reading behavior of people around individuals[11]. They used nudge through a social norm approach to increase the reading duration of adolescents in Barru District. The study uses nudge which is sending visual messages to subjects via the instant messaging applications (Facebook Messanger, Whatsapp, and Line) to improve teenage reading behavior in Barru District. The study was conducted for one week and the intervention was given 3 times, on Monday, Wednesday, and Friday. The results of the study are significant for increasing the reading duration of teenagers in one reading opportunity.

Based on the previous presentation, the researcher considers it is important to test the effectiveness of the application of nudge interventions to increase the reading duration of students in the library of the Faculty of Psychology, Universitas Negeri Makassar.

## 2. METHOD

Reading behavior in this study is reading printed material for entertainment or academic purposes conducted in the library. The duration of a visitor's reading is measured in units of minutes since the visitor starts reading using a stopwatch.

Nudge with the social norm approach in the form of visual messages given by the library manager shortly after the visitor registers. Manipulated by giving pamphlets measuring 15x21 cm to participants.
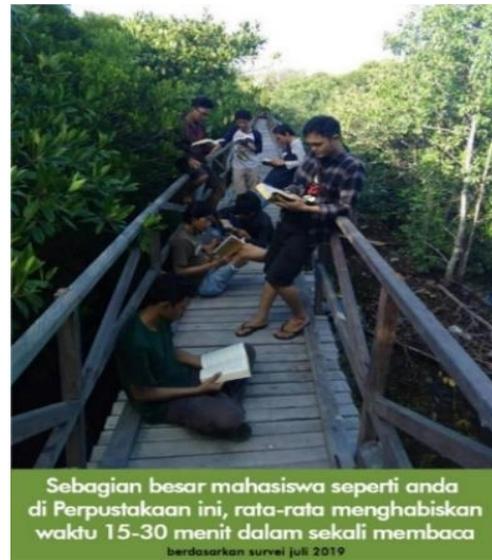


**Figure 2** Nudge visual message

The picture used is the result of an adaptation of Putra, Kusumawardhani, and Narhetali's research [11] with changes to the actual information editor.

### 2.1. Research Design

This study uses an experimental method with a controlled field experiment type. The research runs in a reasonable state, without providing strict control over things that can interrupt the dependent variable, but still provide manipulation of the independent variables. This study uses a one-group pre-test and post-test design. One-group pre-test and post-test design is a method used to determine the effect before and after giving an intervention.

**Table 2.** Research Design

| Group | Pre-test | Intervention | Post-test |
|---|---|---|---|
| Experiment | O1 | X1 | O2 |

O1 =Pre-test before the intervention

O2 =Post-test after an intervention

X1 =Intervention of giving visual nudge messages based on social norms

The population in this study were students of the Faculty of Psychology UNM with the following criteria:

- Have a library card at the Faculty of Psychology, Universitas Negeri Makassar.

- Domiciled in Makassar City.

- Library visitors in the period 8-12 July 2019.

The participants of this study were determined by selecting 10 people from the list of library visitors in the period 8-12 July 2019 who had a low reading duration. There are 10 visitors with the lowest reading duration. They were selected as research participants and expressed willingness to become participants.

This study uses a one-group pre-test and post-test design so that the data generated is paired data. These data are pre-test and post-test data. The pre-test data were obtained by direct observation and recording of participants' reading duration during July 8-12, 2019 using a stopwatch. The post-test research data was obtained from observation sheets.

Data from this study will be analyzed using paired t-tests. The t-test was used to determine the significance of the difference between the pre-test and post-test results of the experimental group. Statistical analysis was performed with the help of the SPSS 25.0 application. for windows.

### 2.2. Research Procedure

Pretest data retrieval is done by observation on July 8-12, 2019, by recording visitors who have a reading duration of under 15 minutes. Next, the researchers processed the data contained in the library visit list to retrieve the average value of library visit time which was assumed to be reading time in the library. Furthermore, researchers prepare research interventions in the form of pamphlets containing information on reading behavior. The visual message to be applied is tested first with a manipulation check to see if the visual message is functioning as expected. The manipulation check is done one day before the intervention by giving two questions. The first question is "What do you think is interesting about the picture?" and the second is " What do you think after seeing the picture?". These two question were given to 10 different people with the

same criteria as the participants. Elaboration on the answers is done to check the extent of the suitability of the effects of the image. The results of the elaboration suggest increasing the size of the information text. Based on this opinion, the text with the size of 24 pt was changed to 26 pt.

The post-test data collection was carried out on July 18, 2019. Participants who had been selected previously were invited to participate in this study. Some participants have a reading duration under 10 minutes stating they cannot participate in this study. The researchers chose participants who had a reading duration under 15 minutes based on a list of library visit times. Participants were then collected in a reading room to be given an explanation and a letter of informed consent to joining this research. After giving instructions and ensuring participants understand the procedures of this study, participants are directed to enter the study site. Participants were asked to register with a library card and after that, a pamphlet was given which served as an intervention in this study.

## 3. RESULT AND DISCUSSION

The data in this study are pre-test data, average norm data, and posttest data. The data in this study are ratio data, which have zero. The average norm of time spent by library visitors reading books in one opportunity is in the range of 15-30 minutes so that the median value is in the position of 22.5 minutes. Here is a comparison chart of the mean pre-test, average reading time, and post-test:
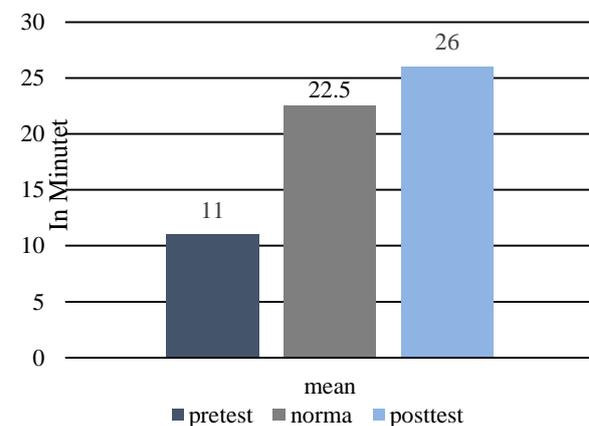


**Figure 3** Comparison of the mean pre-test, norm, and post-test result

A normality test is performed to determine whether the data is distributed normally or not. The data is said to be normally distributed if the significance level is $\geq 0.05$, while it is said to be not normally distributed if the significance level is $\leq 0.05$. The normality test is carried out using SPSS 25.0 for windows applications using the Shapiro-Wilk technique. Following are the results of

participants' normal pre-test and post-test data normality:

**Table 3.** Normality Test Summary

|  | **Mean** | **Deviation standard** | **S-W** | **Sig.** | **Exp.** |
|---|---|---|---|---|---|
| Pretest | 10.9 | 10 | 0.941 | 0.559 | Normal |
| Posttest | 24.3 | 10 | 0.911 | 0.286 | Normal |

The summary table of normality test results shows that the mean pre-test of the experimental group is 10.9 with a standard deviation of 10, and S-W value of 0.941, and a significance value of 0.559. The post-test normality test results showed that the mean post-test of the experimental group was 24.3 with a standard deviation of 10, and S-W value of 0.911, and a significance value of 0.286. Based on the Shapiro-Wilk normality test results obtained pre-test results $0.559 \geq 0.05$ and post-test results $0.286 \geq 0.05$. It can be concluded that the two data are normally distributed.

Based on the normality test that has been done, the duration of reading data pre-test and post-test of the experimental group is known to have a normal distribution. Normally distributed data is a prerequisite for conducting paired t-tests. Paired t-tests were performed to determine the significance of the difference between the pre-test and post-test results of the experimental group.

Based on the results of the paired t-test calculation, the duration of reading participants obtained $t = -2.461$ with $df = 9$ and Sig. (2-tailed) = 0.018. Sig. Value (2-tailed) $\leq 0.05$. Based on this, it can be concluded that there is a significant difference in the duration of one reading opportunity before and after the intervention. The provision of nudge interventions with a social norm approach has a significant effect on increasing the reading duration of participants.

This study aims to measure the effectiveness of providing interventions in the form of visual messages to increase the reading duration of the library visitors, by using a one-group pre-test and post-test design. Visual messages are applied as interventions using nudge techniques with a social norm approach. Thaler and Sunstein [5] explain that nudge techniques function to change individual behavior without giving direct orders, but rather by providing actual information that will assist individuals in making decisions. The nudge intervention technique in this study was combined with the social norm approach. Social norm theory emphasizes interception that can influence individuals in thinking and acting [8]. Interception is the difference between what is thought by individuals about the behavior carried out by people around them with what happened. Related with the reading behavior, the interception that individuals can do is false consensus; that is, individuals feel that the duration of individual reading is following the surrounding people.

Visual messages were used as instruments in this study to increase participants' reading duration. The visual message was adapted from previous research conducted by Putra, Kusumawardhani, and Narhetali [11]. Visual messages contain pictures about reading behavior and actual information about the average duration of reading a book in one reading opportunity. The delivery of visual messages is done after the participant registers in the library. Ten people participated in this study who had previously been selected from a list of visitors who spent less than 15 minutes reading books in the library. The effectiveness of the intervention can be seen from the difference in the duration of reading the participants before and after getting the intervention.

This study uses an experimental method with a controlled field experiment type. The experiment runs in a state of normal or everyday conditions, without giving strict control over things that can interrupt participants' reading. It still provide manipulation of the independent variables. There were several factors that can affect reading behavior. One significant factor for developing reading behavior is the opportunity to choose autonomous self-reading[11]. In this study, the researchers gave participants the freedom to choose their reading. The observations showed that all participants chose their own reading. Researchers control this by allowing participants to bring their reading or choose their books according to what is available in the library collection. Clark and Phytian-science [12] in their study stated that the opportunity to choose to read books by themselves is closely related to the increasing reading fondness. A strong fondness for reading can provide a great opportunity for participants to read longer. Researchers control the opportunity for participants to choose their reading and do not provide the same type of reading with consideration of experiments that run naturally and avoid participants' preferences for certain readings. This factor is striped to be controlled with the hope that the only difference between participants' pre-test and post-test results comes from the visual message given.

Based on the results of the experiments conducted, it can be concluded that there is a significant difference between the duration per one time opportunity to read for each participant before and after giving the intervention. Visual messages that contain information about norms of reading duration are considered successful in increasing participants' reading duration. The success of nudge interventions with the social norm theory approach is carried out in accordance with previous research conducted by Putra, Kusumawardhani, and Narhetali and also supports that

nudge if used on social norms, can change individual behavior[11].

The results of this study are supported by Berkowitz's [8] review, which explains that the role of peers in social norm theory has a far greater influence on individual behavior than biological factors, personalities, heredity, religion, and culture. The influence of peers is also commonly referred to as the perceived norm or subjective norm. The subjective norm in this study is social expectations that are built by seeing whether people around support reading behavior. Peers in this study are significant of planned behavior theory, those who can be participants' references for reading.

False consensus is the interception of individuals who believe that people around them or peers behave like him, even though the reality is not appropriate [8]. This false consensus can result in the reading duration of students being lower than their peers because they believe that their peers are also like that, even though the reality is different. Giving nudge intervention is assumed to overcome the false consensus that can occur in participants. Nudge intervention with the social norm approach is an effort to design choices to change participant behavior by describing the actual condition of peers to reading behavior, specifically the duration of reading to overcome the interceptions made by participants.

The results of this study indicate that there are significant differences in the higher reading duration after participants are given a visual message with actual information about the reading duration in the library. This research was conducted at the end of the semester so that the lecture activities were not active as usual. This has an impact on the number of student visits to the library. Participants and the state of the library, when this research was conducted, did not describe the state of the library as usual. The duration of reading a student in a library is also thought to be influenced by the state of the library.

## 4. CONCLUSIONS

This study concludes that there is a significant difference in reading duration between subjects' pre-test and post-test results after nudge intervention with the social norm approach. The provision of nudge interventions with a social norm approach has a significant effect on increasing the reading duration of visitors to the library of the Faculty of Psychology, Universitas Negeri Makassar.

Based on the results, the researcher proposes the following recommendations:

- For the government, this research can be used as a reference to determine the form of effective literacy problem interventions with a larger study.

- For academics who are interested in replicating similar research, a larger number of samples are needed so that they can provide conclusions that are worth generalizing.

- Similar research can also be targeted at different age groups and places.

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