

Nudging Citizen Engagement in Government Campaign

**British Embassy Jakarta – East Java
Government – nudgeplus**

A project report

March 2021

A project report prepared by ...

**Dimas B. Prasetyo**

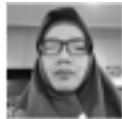
Co-founder, behavioural scientist

Lury Sofyan

Founder, behavioural economist

**Pyan Amin**

Behavioural economist, statistics expert

Anita Yudi Jayanti*Pranata Humas Ahli Pertama, Dinas Kominfo Kab. Sidoarjo***Eny Sri Widiyaningsih***Pranata Humas Ahli Pertama, Dinas Kominfo Kab. Sidoarjo*

Project contributor: Erlin Puspitasari, Makhyan Jibril, Danu Ardiaso, Nizma Samara, Fajri Taswin, Winata Tjandra, Annafi Ikhwanul Azis, Bagus Tri HW, Seroja Gita, Kemas R Nurzaidan, Lisa D Kumalasri, Clairine F Xaveria

Content

Words from the project stakeholders	xi
Executive summary	1
Introduction	3
Background	3
Intervention	4
Intervention Design	6
Main Findings	7
Conclusion	9
Recommendation	10
References	10
Annex	11

Words from the project stakeholders ...



Emil Elestianto Dardak
Wakil Gubernur Jawa Timur

" ... yang sudah diubah oleh rekan-rekan **nudgeplus** adalah kepatuhan mencuci tangan di wastafel dengan memasang stiker jejak kaki dan poster yang tepat ... karena pasang sembarang poster tidak bisa ... dan ini empiris ... semakin sederhana ide (desain intervensi) semakin mudah direplikasi dan dibuat massal. Setelah ini bisa kita tempel sebanyak-banyaknya di wastafel yang ada di tempat pelayanan publik, kantor pemerintah dan sekolah. Mungkin kedepannya teman-teman yang ikut training (yang disampaikan oleh **nudgeplus**) bisa menerapkan metode ini dan **nudgeplus** bisa (membantu) sebagai supervisor."



Sulistianto
Plt Kepala Dinas Kominfo Sidoarjo

"Menurut kami, alatnya sangat komunikatif sekali dan ada panduan lucu seperti kaki-kaki kuning yang mengingatkan kita untuk cuci tangan. Mau tidak mau orang memasuki ruangan di Diskominfo akan berbelok ada apa ini gambar kaki-kaki, dan ujung-ujungnya mencuci tangan di wastafel ... semoga bisa diperbanyak di tempat lain."

Executive Summary

1. Introduction

The coronavirus hit Indonesia and has caused thousands of positive cases in East Java. Since the first time the government announced the first confirmed case, a policy of 3M has been announced. However, there is still a low rate of citizen's compliance on that, creating an urgency to incorporate behavioural science. British Embassy Jakarta and the government of East Java have been collaborating to find a way to implement behavioural science in their policymaking. Nudgeplus has been appointed to carry on a behavioural science program started by giving a capacity building to the PR officers and designing a behavioural intervention to aid in the government's pandemic-related policy making. The goal of the project is to improve the East Java PR team's capability in designing campaigns and behavioural interventions using insight from behavioural science.

2. Intervention design

We started by determining which key behaviour that we wanted to change to identify which 3M behaviour having the lowest compliance rate. According to BPS report, compliance on hand washing is lower than that of wearing a face mask. At the time research was conducted (October 2020), we also revealed a good consistency of wearing masks outside home – people tend to keep using their face mask even when they are tempted to put it off. While doing capacity building activity with the PR, a problem in handwashing behaviour was one of the frequent discussions amongst the training participants (public relation officers).

We then recorded the handwashing behaviour at one of participants' office and revealed a low incidence of handwashing at 17% as the baseline rate (control treatment). We then designed and tested 3 behavioural interventions.

The goal is to produce end products that can be replicated/adopted by the government to increase the handwashing behaviour.

We tested a series of interventions in one of the public institution offices. They were:

Intervention	Control treatment (P0)	Treatment 1 (P1)	Treatment 2 (P2)	Treatment 3 (P3)
Procurement of a more permanent handwashing facility		V	V	V
An attractive handwashing poster			V	V
A set of visual cues (footprints)				V

Before deploying the poster in P2, three posters were tested in an online pre-post experiment to identify which poster increased soap wash behavioural intention and has better message recall. 1648 participants across East Java regions completed the online trial.

2.1. The intervention



The above treatments were conducted in 3 weeks time (+ 1 week for control treatments). CCTVs were used to record the handwashing (vs not handwashing) and using soap (vs not using soap) behaviour. Gender and occupations (wearing uniform vs not wearing uniform) were also identified. A total of 2062 people were observed during the treatments.

3. Result

3.1. The online trial

The poster shown on the below significantly increased the intention of handwashing ($p < .05$) and using soap ($p < .001$) behaviour with the highest top 2 scores message recall (98%).



Thus, we took this poster further to the interventions.

3.2. The onsite interventions

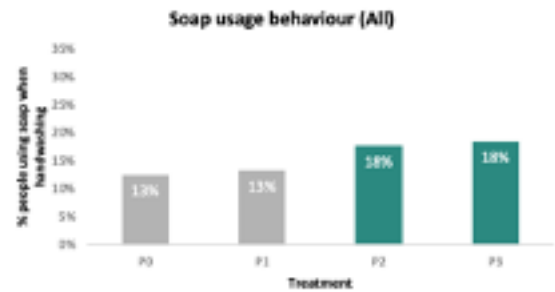
3.2.1. Handwashing behaviour



There was an increasing percentage of behaviour occurrence between the P0 and P1 by 1%, however, this was not statistically significant ($p = .77$). This finding supports the assumptions of changing physical infrastructure alone would not suffice to change people's behaviour.

Evidently, significant change in handwashing behaviour was occurred when P2 is benchmarked by the P1 (18% to 24%, $p < .05$). Changing the handwashing facility plus nudging poster (P2) yielded a chance to increase handwashing behaviour by 1.49 times compared to changing infrastructure alone (P1) and 1.56 times chance compared to control treatments/P0 (17% to 24%, $p < .01$). Eventually, adding in footprints (P3) increased the handwashing behaviour by 1.93 times compared to P1 (18% to 30%, $p < .001$), and 2.04 times compared to P0 (17% to 30%, $p < .001$).

3.2.2. Handwashing with soap behaviour



As shown in above figure, there was no visible difference in soap usage between P0 and P1 ($p = .77$). However, only amongst visitors that P2 and P3 significantly increased the soap usage when compared to P0 and P1.



P2 significantly influenced people to use soap by 3.86 times compared to P1 (5% to 16%, $p < .001$) and 2.18 times compared to P0 (8% to 16%, $p < .01$). Similarly, adding in the footprints (P3) increased the chance of more soap usage by 3.89 times compared to P1 (5% to 17%, $p < .001$) and 2.20 times compared to P0 (8% to 17%, $p < .01$).

These findings suggest that visitors may be nudged due to the perception of being 'instructed' by the building management. This was not the case in employee because they may feel of being 'at their own space' and, thus, detaining themselves to be more hygiene conscious.

4. Conclusion

Our project showed promising evidence to implement behavioural intervention to nudge handwashing behaviour. Providing relevant infrastructure is not enough when it comes to establishing a new behaviour – a more salient and on point nudge intervention utilising behavioural insight could be incorporated to aid in the current policy tackling problematic behaviour during the pandemic.

Introduction

The coronavirus hit Indonesia and has caused thousands of positive cases in East Java. Since the first time the government announced the first confirmed case, the policy of 3M (Mencuci tangan, Memakai masker, Menjaga jarak) has been announced to control the contagion spread. However, citizen's compliance of the policy is still low, indicating room for improvement in the policy strategy. It also creates an urgency to incorporate behavioural science.

British Embassy Jakarta and the government of East Java have been collaborating to find a way to implement behavioural science in their policymaking. Nudgeplus has been appointed to carry on a behavioural science program started by giving a capacity building to the PR officers and designing a behavioural intervention to aid in the government's pandemic-related policy making.

The project was funded by British Embassy Jakarta, and was carried on with a strong East Java government buy-in initiative. The goal of the project is to improve the East Java PR team's capability in designing campaigns and behavioural interventions using insight from behavioural science.

Background

We started the project by conducting capacity building for 5 days from 19th to 23rd of October 2020. We delivered both theoretical (foundation of behavioural science) and practical (method and conducting behaviour science-based trial) knowledge. Participation rates were at 90%, with a number of participants ranging from 22-23 during the training days. Participants behavioural science knowledge were also assessed, increasing from 43% to 82%.

In parallel, we identified which key behaviour that we wanted to change - that is, which 3M had the lowest compliance rate. In doing so, we did a pilot survey (22nd-23rd October 2020) and found a good consistency of wearing masks outside home – people tend to keep using their face mask even when they are tempted to take it off.

Additionally, the problem of handwashing behaviour was one of the frequent discussions occurring during the capacity building (with the public relation officers). In addition, a survey by the Central Bureau of Statistics (BPS) presented the fact that the compliance rate of handwashing is lower, compared to that of wearing a mask [1]. Although the behaviour of handwashing with soap has been categorized as compliant (around 75% compliance rate), it is still far less than the compliance rate of wearing face masks (90% compliance rate) [1]. This emphasises the need to increase the behaviour of handwashing with soap among Indonesian citizens.

As widely understood, the transmission of COVID-19 between people is mainly through contact or respiratory droplets, that enter the body through mouth, nose or eyes [2]. Touching the nose and eyes with one's hand could increase risk of transmitting the disease, and therefore WHO has strongly advised for frequent hand hygiene practices, particularly washing the hands with soap through running water. This behaviour has been proven to be a cost-effective strategy to prevent not only the transmission of COVID-19, but also other diseases such as Diarrhea and Pneumonia [3].

A preliminary COVID-19 monitoring survey conducted by the UNICEF in eight high-priority provinces in Indonesia, including Jakarta and East Java, showed that only 69% of public places have fully functional handwashing stations with both water and soap, with only 37% of people in were observed washing their hands with soap or using hand sanitizer [4].

Upon these backgrounds, we decided to conduct behavioral interventions that aim to increase the compliance rate of handwashing behavior. We made a collaboration with one of the East Java Government's offices, Diskominfo Kabupaten Sidoarjo. We recorded the handwashing behaviour of the officials and the visitors and revealed a low prevalence of handwashing at 17% as the baseline rate. We then designed and tested three behavioural interventions. The goal is to produce end products that can be replicated/adopted by the government to increase handwashing behaviour.

Intervention

Behavioural problem analysis

The facility where the baseline was conducted was basically a big bucket with a tap on the below. We assumed that this would create a less pleasant feeling and experience while handwashing. Additionally, some other possible barriers were: hassleness while handwashing (the splash of water flowing down will wet the shoes/attire), cheap soap perception (thus, will make hands dry), massive hand sanitiser availability, mistrust or fatigue with governments advise, and less saliency of the facility.



Figure 1. the temporary hand washing facility in Diskominfo Sidoarjo.

All these pitfalls could hinder people to hand wash, while, at the same time, it diminishes the benefit people can get by handwashing. Some of them are: getting clean and fresh hands, reduced risk of virus transmission, and handwashing perception of easy and convenient.

Thus, we tested a series of three consecutive onsite accumulated treatments in three weeks (one week for one intervention) time. The treatments were:

Intervention	Treatment 1 (P1)	Treatment 2 (P2)	Treatment 3 (P3)
Procurement of a more permanent handwashing facility	V	V	V
An attractive handwashing poster		V	V
A set of visual cues (footprints)			V

P1 - Procurement of a more permanent handwashing facility

We made the facility more permanent. The water will be resourced directly from the nearest water hydrant (vs not stored in the temporary bucket), creating a perception of a cleaner look and healthier facility. Researchers posited that changing the physical context is one of the strategies to yield motivation and, thus, elicit behaviour [5]. Additionally, physical changes in the environment would act as prompts that could encourage healthy choices in behaviour, at the time the choice is made, given that there is prior intention to do a certain healthy behaviour [6]. Therefore, providing physical enhancement in the current facilities might motivate more individuals to hand wash, and it would also act as a physical prompt that would promote the initial intentions to hand wash.



Figure 2. Physical enhancement in the current hand washing facility

P2 - An attractive handwashing poster

Prior to this treatment, we conducted an online survey to choose the most optimal poster from three candidates. We developed two attractive posters based on behaviour science (aiming to influence more soap usage while handwashing) and took a poster published by the Ministry of Health (we removed the ministry logo to avoid possible bias). The result of the survey is reported in the subsequent section.



Figure 3. The Health Ministry poster we involved in the online trial/test.

Priming soap wash poster



Figure 4. Priming poster we develop to induce a priming and saliency effect.

Here we used color saliency (highlighted information in red and yellow text). In addition, we provided a picture of a large and clear figure of hands being washed with soap.

People's behaviour may be altered if they are first exposed to certain sights, words or sensations [7]. Exposure of certain cues that subliminally alter behaviour is called priming. In this poster, we intended to make the foam salient, where the foam could act as a visual cue to prime participants in using soap while handwashing. Additionally, we made a rhyming written message to ensure it was easy to recall.

The health messenger poster

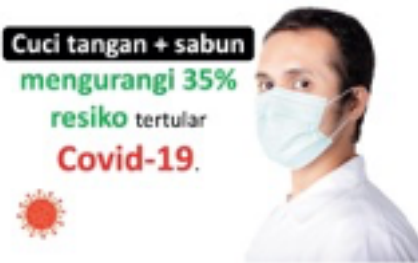


Figure 5. Another poster we develop to test in the online trial.

Humans are heavily influenced by who communicates the information [7]. Hence, we provided a picture of a health worker in the poster, which was intended to provide a perceived authority of the information provider.

We again used color saliency (highlighted red and green text). In addition, we highlighted information that handwashing with soap would reduce 35% risk of contracting COVID-19.

This was intended to trigger risk aversion to the participants, where they would more likely behave in a way that prevents losses (reduce risk of contracting COVID-19) rather than obtains gains [7].

We coded the Ministry's poster as T1, the priming poster as T2 and the messenger as T3.

P3 - A set of visual cues (footprints)

Physical proximity to handwashing facilities has been identified as one of the determinants to handwashing behaviour in Indonesia [8]. However, some issues arose that a good hand washing facility is less salient and visible in certain locations. Therefore, in our third intervention, we used a visual cue (bright yellow footprints) to increase the saliency of the hand washing facility. The visual cues also act as a prime to nudge individuals to approach the handwashing facilities.

The usage of footprints to nudge behaviour has been previously proven effective in various settings, including in decreasing littering behaviour [9] and directing people to hand wash after using the closet in a public toilet [10].

We used a set of stickers resembling footprints that lead to the washbasin, where the stickers were posted on the ground. Behavioural science posited that deliberately placing certain objects in a person's environment can alter/prime the expected behaviour [7].

Hypothesis

We assumed that changing the infrastructure is not enough to spark the behaviour change, that is a more frequent handwashing behaviour and soap usage behaviour (while handwashing). Thus, simple and low cost nudge interventions are pivotal to ensure the occurrence of the expected behaviour. It means that we determine the P0 and P1 as the benchmark point for the other two treatments (P2 and P3). Therefore, we hypothesize that a significant increased handwashing behaviour would occur under P2 treatments (if compared to P1 and P0) and under P3 treatments (again, compared to P1 and P0).

Intervention Design

Online trial

Respondents (n=1648) across East Java regions completed our online trial which was spread through many WhatsApp groups and Instagram ads. They are residents in central region (57,8%, n=953) with Surabaya and Sidoarjo as the majorities; western East Java (24,3%, n=400) with Kediri, Blitar and Lamongan as the majorities; eastern region (16,6%, n=273) with Jember and Banyuwangi as the majorities; and Madura island (1,30%, n=22). We practically did the convenience sampling method which may have some drawbacks. However, we ensure there are representatives of each city in East Java.

61% (n=1004) participants are female, aged 29,8 years old on average (SD = 11), majorities are high school graduates (38%, n=627) and bachelor graduates (36%, n=594). Also, we covered multiple backgrounds with top 5 majorities are college students (27%, n=446), public workers (21%, n=344), private sector's (18%, n=301), housewife (12%, n=197) and entrepreneurs (11%, n=182).

The objective of the trial: is to choose which poster that significantly increased the intention to handwash and yielded better message recall would be then used as an intervention for the field experiment. The online experiment was designed using a paid Jotform (eu.jotform.com) account from 13th - 28th December 2020. The experiment was done anonymously and voluntarily, with a small reward of e-money (via Gopay/OVO) to some randomly selected participants that filled the survey within a specific period of time.

The experiment design was a repeated design, pre-post test, where participants were randomly assigned to 4 different treatments/posters (T1, T2, T3, T0 - no poster shown, thus, a control group).

Upon clicking on the online trial link, participants were directed to the main page (consent) form. The trial then initially provided a story/context where the need to handwash usually takes place.

It then asked two questions measuring intention of handwashing and handwashing with soap, recorded in a 5-point Likert scale. The poster was then exposed and participants were reasked the same two questions. Participants then asked to recall the message. This is done by providing 4 multiple choices, where only 2 choices were correct. Each correct choice gives 1 mark while wrong answers lead to subtraction of 1 mark. Thus, the responses were coded ordinally from -2 to 2, where 2 is the highest score (participants choose the 2 correct answers precisely) and -2 is the lowest score (they choose 2 wrong answers). Note that 0 score was given when participants choose all the 4 choices.

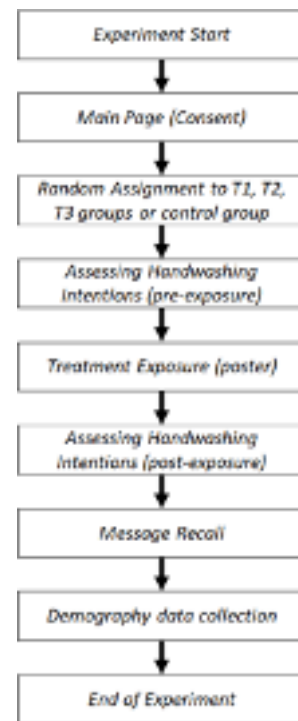


Figure 6 : Online experiment procedure

Finally, at the end of the survey participants were asked to fill demographic information such as age, gender, domicile, and occupational details.

Onsite intervention

The above treatments were conducted consecutively in 4 weeks in one location, at Diskominfo Kabupaten Sidoarjo. The office has 2 handwashing facilities: one near the car park/main lobby, and one in the bike park. One might think that this was a repeated (within-subject) design.

However, we have no certainty whether the same people come into the office across the four interventions. Employees sometimes work at the office or in the field covering the local events. In addition, different kinds of visitors routinely come to the location each week. Thus, the treatments were treated as between-subject design and each treatment is independent on its own.

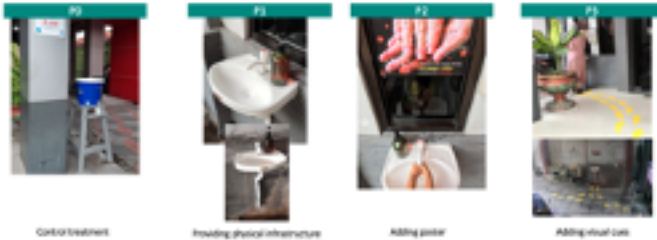


Figure 7. The snapshots of treatments

Two CCTVs (one for each hand washing facility) were used to record the behaviour instead of placing an enumerator in the location. This is to reduce the feeling of being observed (i.e. Hawthorne effect) that potentially affects the way people behave. The cameras were placed hiddenly and were remotely turned on in the morning (07.00-09.30) and during the lunch time (11.30-13.30) - the time where lots of people come in and out the office.

A categorical data of yes/no response (hand washing vs not handwashing, using soap vs not using soap) were elicited. Gender and occupations (wearing uniform vs not wearing uniform) were also identified.

Interventions were conducted in 4 weeks time from 31st of November 2020 to 15th of January 2021 (excluding national leave and holiday). During the interventions, we acknowledge that there are probably some happening national issues (i.e. vaccination) and/or new way of thinking (i.e. new year's resolution - fresher mind and, thus, people might have more self control). We acknowledge this matter and they are one of the limitations of the study.

A total of 2062 people observed during the treatments, 46% (n=946) were visitors, 66% (n=1353) were male, 72% (n=1479) captured on the Cam 1 (near main lobby), 62% (n=1277) captured during the morning timeframe.

P2 observed the highest number of people (34.4%, n=709), followed by P0 (29.5%, n=608), P3 (18.2%, n=375) and P1 (17.9%, n=370).

Main Findings

Online trial

Our pre-post poster exposure for all poster treatments yielded a significantly increased intention of both handwashing (T1, $p < .05$; T2, $p < .05$; T3, $p < .001$) and soap washing (T1, $p < .01$; T2, $p < .001$; T3, $p < .001$). However, this was not the case for the control treatments/no poster exposure ($p = .34$ for handwashing, $p = .73$ for soap washing), indicating that the change of intention was due to the poster exposure and not because of the feel of being evaluated.

From all these posters, T2 has the highest top 2 scores (98%). Thus, we took T2 further to the onsite intervention. The below table shows how the posters perform.

	Health ministry's	Priming soap wash	Health messenger
% of people correctly recall the message	66%	98%	0%

Onsite intervention

Handwashing behaviour

In general, there was an increasing trend of handwashing behaviour across the treatments.



Figure 8. Percentage of people handwashing across treatments

Notably, there was an increasing percentage of behaviour occurrence between the P0 and P1 by 1%, however, this was not statistically significant ($p = .77$).

In addition, it remains not significant even when the subject was filtered by either employees ($p = .42$) or visitors ($p = .56$). This finding supports our assumptions that changing physical infrastructure alone would not suffice to change people's behaviour.

Considerable change in handwashing behaviour is evident when P2 is benchmarked by the P1 (18% to 24%, $p < .05$). Changing the handwashing facility plus nudging poster (P2) elicits a 1.56 times chance to increase the handwashing percentage compared to control treatments/P0 (17% to 24%, $p < .01$). The effect size even higher amongst visitors, where P2 yields a 2.06 times chance to yield the expected behaviour when compared to control treatments/P0 (13% to 23%, $p < .01$) and 2.46 times of more handwashing behaviour when compared to changing infrastructure alone/P1 (11% to 23%, $p < .01$). Figure 9 on the below showed this trend similarity.



Figure 9. Percentage of people handwashing across treatments amongst visitor

Please note that there is a decreasing percentage of people handwashing between P0 and P1 - 13% to 11% - but, as previously mentioned, this is not statistically significant ($p = .56$).

These findings are particularly interesting in a sense that only changing the infrastructure does not guarantee a shift in behaviour. Our experiment showed that putting a simple nudging poster helps ensure the behaviour change to occur.

Finally, adding in footprints (P3) increase the 1.93 times chance to increase behaviour compared to P1 (18% to 30%, $p < .001$), and 2.04 times chance to yield the desired behaviour compared to P0 (17% to 30%, $p < .001$).

Importantly, the biggest effect size of P3 was evident amongst the visitors of yielding 2.81 times chance of more handwashing behaviour compared to only installing handwashing facility alone (11% to 26%, $p < .001$).

All these findings support our hypothesis that adding in nudging visual cues are important to shape the expected behaviour.

Another interesting point was in the control treatments (P0) males showed a significantly lower compliance rate compared to females (12% vs 29%, $p < .001$). This is inline with behaviour literature in different area of research that males are more risk taking compared to females [11]. In P3 treatments, that gender difference diminished (28% vs 32%, $p = .42$). This showed us that the P3 treatments nudge people regardless of their gender.

Handwashing with soap behaviour

Below figure shows how the soap usage differs across the treatments.



Figure 10. Percentage of people using soap when hand washing across treatments

As shown in figure 10, there was no visible difference in soap usage between P0 and P1 ($p = .77$). This pattern was also evident in a separate observation for employees ($p = .21$) and visitors ($p = .17$). Again, this supports our findings where changing physical appearance (i.e. providing a proper soap bottle) will not suffice to increase the soap usage behaviour.

Unlike the handwashing behaviour trend, the significant increase only occurred when P2 and P3 compared directly to P0 (P0-P2, $p < .01$; P0-P3, $p < .05$). This means that physical enhancement is important to increase soap usage. However, it becomes less persuasive without visual cues (P2 and P3).

On the other hand, we found out similar patterns of soap usage with handwashing behaviour across the treatments particularly amongst visitors.



Figure 11. Percentage of people using soap when hand washing across treatments (amongst visitors)

As shown in the figure 11, the placement of poster (P2) sparked 3.86 times the chance to increase soap usage compared to only changing the physical appearance/P1 (5% to 16%, $p < .001$), and 2.18 times likely to elicit more soap usage compared to the control treatments/P0 (8% to 16%, $p < .01$). Similarly, adding in the footprints (P3) increased the chance of more soap usage by 3.89 times compared to P1 (5% to 17%, $p < .001$) and 2.20 times compared to control treatments/P0 (8% to 17%, $p < .01$). Figure xx visualised these findings.

The findings suggest that visitors may perceive the presence of posters nudged them in a sense that they may perceive the posters as a novel 'instruction' the management asked them to comply with.

Finding an odd result amongst employees, we collected additional qualitative data (through some direct observations and interviews) and found out that soap usage was not that massive compared to visitors, firstly, due to comfortable feelings of being 'at their own space' and, thus,

detaining themselves to be more conscious in their safety. This phenomenon also found in injury study that mostly occurred in the area close to home [12].

The second rationale is because the provisions of hand sanitisers are all over the places at the office (including at the individual desk). Using hand sanitisers are more preferable, secured, and feel more convenient. Using soap and hand sanitiser would dry their hands, all together.



Figure 12. Hand sanitisers were found in every corner of the office.

Soap usage is not as high as handwashing behaviour even under P3 treatments. This is to note that its lower baseline (control treatments/P0) percentage (compared to handwashing behaviour percentage). Eventually, nudge interventions evidently showed how a nudge poster can increase the soap usage (though it is limited for only visitors in the current study).

Limitation

We acknowledge that we did not pick the intervention location randomly. The reason is because we prioritise to encourage the respective officials to solve the problematic behaviour (related to 3M) in their own place, before expanding it to the broader space.

Conclusion

It has been challenging to conduct trials measuring real behaviour, particularly during the pandemic. Using reliable and state of the art tools to record behaviour (i.e. using CCTV), our trial reached that gold standard of BI trials observing real behaviour.

Our works showed promising evidence to implement behavioural intervention to nudge handwashing behaviour. Notably, designing a visual campaign (poster) using behavioural science as the toolbox is a powerful persuasion. Our T2 posters increased not only intention to hand wash and soap usage, but also their respective behaviour.

Providing relevant physical infrastructure is not enough when it comes to establishing a new behaviour – a more salient and on point nudge intervention utilising behavioural insight could be incorporated to aid in the current policy tackling problematic behaviour during the pandemic. Importantly, measuring real behaviour is pivotal in behavioural research and intervention - something that other methods could not achieve (i.e. self-report survey, etc.)

Recommendation

Replicate the P3 in public spaces

Our tested intervention elicited a set of campaign tools which is scientifically significant in increasing the compliance rate of handwashing behaviour. Particularly during the pandemic, obtaining this tested intervention would be a supporting toolbox in policy making which is strongly scientific-based. Thus, there is a solid reason for the stakeholders to have P3 replicated across the East Java area. Notably, in our trials the treatment can yield 2-3 times chance of increasing compliance rate.

Testing the intervention and policy is indeed costly in terms of time and financial. This then leads to an urgency where dedicated teams (either a separate subdivision or integrated in certain function) need to be established to do the job, which we will cover on the subsequent recommendation.

Initiate a nudge unit and conduct a randomised controlled trial for further robust public policy testing

On the national level, there has been an initiative to incorporate behavioural science in policy making. Our joint project showed that behavioural

science has been an enticing discussion, and the relevant PR officers have been showing their spirit to conduct this. The result from our project showed promising evidence where we can work together with local talent, and we are devoted to fully supporting this establishment. This local 'nudge unit' will play a pivotal role particularly when they face a specific environment/context/culture extremely having different sensitivity with the general population, as the nudging would also have to be different.

References

- [1] Larasaty, P., Meilaningsih, T., Riyadi, Pratiwi A., Kurniasih A. (2020). Perilaku Masyarakat di Masa Pandemi COVID-19 : Hasil Survei Perilaku Masyarakat di Masa Pandemi COVID-19 (7-14 September 2020). Badan Pusat Statistik.
- [2] World Health Organization. (2020). Modes of transmission of virus causing COVID-19: implications for IPC precaution recommendations : Scientific Brief. World Health Organization.
- [3] World Health Organization. (2020). Recommendations to Member States to improve hand hygiene practices to help prevent the transmission of the COVID-19 virus: April 2020 Interim Guidance. World Health Organization.
- [4] Comini, D., Pronyk, P., Hahn, J. (2020). Indonesia COVID-19 Response Situation Report: 10 September - 14 October 2020. UNICEF Indonesia.
- [5] Michie, S & West, R (2013): Behaviour change theory and evidence: a presentation to Government. Health Psychology Review, 7:1, 1-22
- [6] Kremers, S. P., Eves, F. F., & Andersen, R. E. (2012). Environmental changes to promote physical activity and healthy dietary behavior. Journal of Environmental and Public Health, 2012
- [7] Dolan, P., Hallsworth, M., Halpern, D., King, D., & Vlaev, I. (2010). MINDSPACE: influencing behaviour for public policy.
- [8] Hirai, M., Graham, J. P., Mattson, K. D., Kelsey, A., Mukherji, S., & Cronin, A. A. (2016). Exploring determinants of handwashing with soap in Indonesia: a quantitative analysis. International journal of environmental research and public health, 13(9), 868.
- [9] Tidy, K. B. (2015). Green Footprints-An experiment to nudge people towards responsible litter disposal. London, Great Britain.
- [10] Blackwell, C., Goya-Tocchetto, D., & Sturman, Z. (2017). Nudges in the restroom: How hand-washing can be impacted by environmental cues. Available at SSRN 3007866.
- [11] Harrant, V., & Vaillant, N. G. (2008). Are women less risk averse than men? The effect of impending death on risk-taking behavior. Evolution and Human Behavior, 29(6), 396-401.
- [12] Haas, B., Doumouras, A. G., Gomez, D., De Mestral, C., Boyes, D. M., Morrison, L., & Nathens, A. B. (2015). Close to home: an analysis of the relationship between location of residence and location of injury. The journal of trauma and acute care surgery, 78(4), 860.

Annex



A close-up look of the visual cue (poster) placed in the handwashing facility.



A pair of footprints printed in oracle sticker.