

Saving for retirement: A real-world test of whether seeing photos of one's future self encourages contributions

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Additional Tables & Figures

Overview of Supplement

- Table S1. Balance check comparison between treatment & control groups
- Table S2. Correlates of the probabilities of visiting the website, taking the selfie, & going back to the online banking app
- Table S3. Percentage of account holders making contributions to their retirement accounts: OLS regressions
- Table S4. Amount of savings contributions in pesos: OLS regressions
- Table S5. Heterogeneous treatment effect on the amount of savings contributions in pesos: Tobit regressions with interactions
- Table S6. Open rates: Ordinary least squares regression by message channel & theme
- Figure S1. English translations of text messages inviting account holders to meet their future selves
- Figure S2. Original Spanish text messages inviting account holders to meet their future selves
- Figure S3. English translations of push notifications inviting account holders to meet their future selves
- Figure S4. Original Spanish push notifications inviting account holders to meet their future selves
- Figure S5. English translations of emails inviting account holders to meet their future selves
- Figure S6. Original Spanish emails inviting account holders to meet their future selves
- Figure S7. Original Spanish sample email format

Table S1. Balance check comparison between treatment & control groups

| Variable | Control group | | Treatment group | | <i>p</i> ($\mu_C \neq \mu_T$) |
|---|---------------|-----------|-----------------|-----------|------------------------------------|
| | <i>M</i> or % | <i>SD</i> | <i>M</i> or % | <i>SD</i> | |
| Percentage of group making mandatory contributions to retirement | 81 | 40 | 80 | 40 | .71 |
| Average total balance of retirement account (in pesos) | 212,362 | 307,052 | 212,019 | 293,645 | .90 |
| Average voluntary contributions balance (in pesos) | 8,568 | 65,210 | 8,721 | 69,453 | .80 |
| Average salary reported to government (in pesos) | 663 | 728 | 662 | 727 | .90 |
| Average salary of a public worker reported to government (in pesos) | 332 | 2,207 | 330 | 2,174 | .93 |
| Percentage grandfathered to 1973 law (that is, had public pension before privatization) | 28 | 45 | 29 | 45 | .11 |
| Percentage men | 73 | 45 | 73 | 44 | .22 |
| Percentage participating in Investment Plan 1 (designed for ages >60 years) | 1 | 9 | 1 | 9 | .92 |
| Percentage participating in Investment Plan 2 (designed for ages 46–59 years) | 15 | 35 | 15 | 35 | .67 |
| Percentage participating in Investment Plan 3 (designed for ages 37–45 years) | 23 | 42 | 23 | 42 | .50 |
| Percentage participating in Investment Plan 4 (designed for ages <36 years) | 61 | 49 | 61 | 49 | .87 |

Note. The *p* values are for the difference in means between the treatment and control groups.

Table S2. Correlates of the probabilities of visiting the website, taking the selfie, & going back to the online banking app

| Variable | P(visit website) | P(selfie) | P(online bank) |
|--|----------------------------|----------------------------|----------------------------|
| Actively contributing | 0.0199** (0.00894) | 0.0110 (0.00807) | 0.00967* (0.00555) |
| Voluntary contributions balance | 1.07e-07** (4.91e-08) | 4.64e-08 (4.43e-08) | 7.69e-08** (3.04e-08) |
| Total balance | 3.70e-08** (1.57e-08) | 3.47e-08** (1.41e-08) | 3.41e-09 (9.71e-09) |
| Salary reported to SS | -2.10e-05*** (5.73e-06) | -1.64e-05*** (5.18e-06) | -1.18e-05*** (3.56e-06) |
| Salary public work reported to SS | 4.53e-07 (1.49e-06) | 6.60e-07 (1.34e-06) | -6.90e-07 (9.22e-07) |
| Men | 0.0588*** (0.00721) | 0.0644*** (0.00651) | 0.0330*** (0.00448) |
| Investment Portfolio 2 (proxy of ages 46–59 years) | -0.000550 (0.0359) | 0.0401 (0.0324) | -0.00387 (0.0223) |
| Investment Portfolio 3 (proxy of ages 37–45 years) | -0.0729** (0.0355) | 0.00186 (0.0320) | -0.0391* (0.0220) |
| Investment Portfolio 4 (proxy of ages <36 years) | -0.149*** (0.0353) | -0.0711** (0.0319) | -0.0796*** (0.0219) |
| Investment portfolio (missing) | 0.0693 (0.0609) | 0.0161 (0.0550) | -0.00224 (0.0378) |
| Constant | 0.508*** (0.0360) | 0.264*** (0.0325) | 0.139*** (0.0223) |
| Observations | 24,427 | 24,427 | 24,427 |
| R ² | .019 | .017 | .012 |

Note. Standard errors are in parentheses. P() = Probability of [event]; SS = Social Security.
*p < .1. **p < .05. ***p < .01.

Table S3. Percentage of account holders making contributions to their retirement accounts: OLS regressions

| | Any voluntary contribution | Recurrent contributions | One-time contribution |
|--------------|----------------------------|-------------------------|-----------------------|
| Treatment | -0.001 (0.003) | -0.004 (0.003) | 0.002** (0.001) |
| Constant | 0.149*** (0.002) | 0.137*** (0.002) | 0.015*** (0.001) |
| Observations | 48,853 | 48,853 | 48,853 |
| R^2 | .000 | .000 | .000 |

Note. Standard errors are in parentheses. Each column is a separate ordinary least square (OLS) regression for the different types of savings contributions.

** $p < .05$. *** $p < .01$.

Table S4. Amount of savings contributions in pesos: OLS regressions

| | Any voluntary contribution | Recurrent contributions | One-time contribution |
|--------------|----------------------------|-------------------------|-----------------------|
| Treatment | 33.870* (20.096) | 9.777 (8.488) | 24.093 (18.125) |
| Constant | 186.795*** (14.210) | 142.276*** (6.002) | 44.519*** (12.817) |
| Observations | 48,853 | 48,853 | 48,853 |
| R^2 | .000 | .000 | .000 |

Note. Standard errors are in parentheses. Each column is a separate ordinary least squares (OLS) regression for the different types of savings contributions. It is important to note that analytical strategy matters here: Using standard OLS regressions, we find a significant result for any voluntary contribution and a trend-level result for one-time contributions, although the magnitudes are small. These small estimates are not surprising given that over 98% of account holders make no contributions, thus the effect on the people who did contribute gets diluted. A more informative approach is to use Tobit regression to see the effect of the intervention on the peso amount of retirement contributions conditional on making a contribution, which is the common model to use to analyze savings when many saving accounts have balance of zero. With this approach, we found that the intervention greatly raised the average amount of single contributions in that month, as we report in Tables S5 and S6.

* $p < .1$. *** $p < .01$.

Table S5. Heterogeneous treatment effect on the amount of savings contributions in pesos: Tobit regressions with interactions

| | Any voluntary contribution | Recurrent contributions | One-time contribution |
|---|----------------------------|--------------------------|---------------------------|
| Treatment | -96.792 (126.384) | -144.249** (63.197) | 2,169.801*** (788.238) |
| Income | 0.942*** (0.084) | 0.514*** (0.041) | 1.287** (0.518) |
| Treatment × Income | 0.198* (0.118) | 0.163*** (0.058) | -1.200 (0.749) |
| Treatment | 51.772 (227.311) | -57.829 (116.617) | 1,736.914 (1,261.307) |
| Active (proxy of formal work) | 1,341.386*** (176.411) | 818.020*** (89.635) | -1,391.979 (1,047.369) |
| Treatment × Active | 2.884 (248.616) | 46.626 (126.953) | -530.101 (1,427.795) |
| Treatment | -146.582 (169.047) | -110.834 (84.142) | 956.017 (1,169.575) |
| Men | -1,009.212*** (142.071) | -565.135*** (70.789) | 577.425 (979.173) |
| Treatment × Men | 294.611 (201.662) | 137.742 (100.661) | 491.767 (1,355.320) |
| Treatment | -30.511 (112.419) | -94.221* (56.783) | 1,859.021** (732.770) |
| Proxy of age—investment plan (ref. age <36) | | | |
| Proxy of age 37–45 | -1,573.751*** (203.370) | -883.717*** (103.555) | -709.919 (1,271.736) |
| Proxy of age 46–59 | -960.785*** (161.385) | -540.010*** (81.520) | 242.139 (1,024.031) |
| Treatment × Proxy of Age 37–45 | 420.541 (283.401) | 305.259** (144.102) | -512.412 (1,738.900) |
| Treatment × Proxy of Age 46–59 | 206.558 (227.563) | 171.821 (115.128) | -1,543.151 (1,429.354) |

Note. Standard errors are given in parentheses. Ages are given in years. Each column and each panel is a separate Tobit regression for the different types of savings contributions.

** $p < .05$. *** $p < .01$.

Table S6. Open rates: Ordinary least squares regression by communication channel & theme

| | Prob(visit website) |
|---|-------------------------|
| Channel (ref.: Email) | |
| Push notification | -0.0653*** (0.00163) |
| SMS message | 0.00664*** (0.00208) |
| Theme (ref.: "Discover your look in old age") | |
| "Message from future self" | 0.0297*** (0.00143) |
| "Limited time" | 0.00845*** (0.00129) |
| Constant | 0.104*** (0.00162) |
| Observations | 195,419 |
| R^2 | 0.017 |

Note. Regression considers each of the eight communications for each individual (that is, three text messages, three push notifications, and two emails) as an observation, and website visit (0/1 dummy) as the dependent variable. Standard errors (reported in parentheses) clustered at the individual level. In the main text, we presented the channel and theme percentage of the first visit. To obtain statistical significances, we also considered each of the eight communications we sent to each individual as an observation and regressed whether the individual clicked on the webpage link (that is, a regression where the dependent variable is whether the account holder clicked on a message, and the regressors are the channel and theme the message, with eight observations per account holder, one per message sent). The parameters for all channels and themes were statistically significant, with p values less than .001. Prob. = Probability

*** $p < .01$.

Figure S1. English translations of the text messages inviting account holders to meet their future selves

| Theme | Treatment Text Messages | Control Text Messages |
|---------------------------------|---|---|
| How will you look in old age? | Hi #first name, Do you want to see how you will look in old age? Click here! [Link] #Afore name | Hi #first name, Do you want to save for retirement? Click here! [Link] #Afore name |
| Message from your "future self" | Hi #first name, Your future self has a message for you. Click here and find out! [Link] #Afore name | Hi #first name, Have you started saving for retirement? Click here and program your savings! [Link] #Afore name |
| Limited time, try it today | For a limited time you can meet your future self with our old age selfie filter! [Link] #Afore name | Don't waste more time, click here and save TODAY for a better future. [Link] #Afore name |

Figure S2. Original Spanish text messages inviting account holders to meet their future selves

| Theme | Treatment Text Messages | Control Text Messages |
|-------------------------------|--|--|
| ¿Cómo lucirás en la vejez? | Hola #first name, ¿Quieres ver como luciras en la tercera edad? ¡Haz clic aqui! [Link] #Afore name | Hola #first name, ¿Quieres ahorrar para el retiro? ¡Haz clic aqui! [Link] #Afore name |
| Mensaje de tu "yo futuro" | Hola #first name, Tu yo del futuro tiene un mensaje para ti. ¡Haz clic aqui y descubrelo! [Link] #Afore name | Hola #first name, Ya empezaste a ahorrar para el retiro? ¡Haz clic aqui y programa tu ahorro! [Link] #Afore name |
| Tiempo limitado, pruébalo hoy | Solo por tiempo limitado conoce a tu yo del futuro con nuestro filtro selfie tercera edad! [Link] #Afore name | No pierdas mas tiempo, haz clic aqui y ahorra HOY para un mejor futuro. [Link] #Afore name |

Note. Accents were not included in the original Spanish text messages because of character limitations and formatting constraints.

Figure S3. English translations of push notifications inviting account holders to meet their future selves

| Theme | Treatment Push Notifications | Control Push Notifications |
|---------------------------------|--|---|
| How will you look in old age? | The future is here. Today you can discover how you'll look in old age. Try it out [Link] | The future is here. Click here and program your savings for a good retirement! [Link] |
| Message from your "future self" | Your future self has a message for you. Click here and find out! [Link] | Program your savings TODAY. Click here! [Link] |
| Limited time, try it today | For a limited time you can meet your future self with our old-age selfie filter [Link] | Click here and save TODAY for a better future. [Link] |

Figure S4. Original Spanish push notifications inviting account holders to meet their future selves

| Theme | Treatment Push Notifications | Control Push Notifications |
|-------------------------------|---|---|
| ¿Cómo lucirás en la vejez? | El futuro ya esta aqui. Hoy puedes descubrir como luciras en la tercera edad. Pruebalo [Link] | El futuro no tarda. ¡Haz clic aqui y programa tu ahorro para un buen retiro! [Link] |
| Mensaje de tu "yo futuro" | Tu yo del futuro tiene un mensaje para ti. ¡Haz clic aqui y descubrela! [Link] | Programa tu ahorro AHORA. ¡Haz clic aqui! [Link] |
| Tiempo limitado, pruébalo hoy | Solo por un tiempo limitado, conoce tu yo del futuro con nuestro nuevo filtro selfie [Link] | Haz clic aqui y ahorra HOY para un mejor futuro. [Link] |

Note. Accents were not included in the original Spanish push notifications because of character limitations and formatting constraints.


Figure S5. English translations of emails inviting account holders to meet their future selves


| Theme | Treatment Email | Control Email |
|---------------------------------|--|--|
| How will you look in old age? | <p>Subject: Do you want to see how you will look in old age? Header text: Find out what the future has in store for you</p> <p>Hola * FIRST:NAME *,</p> <p>With our new old-age selfie filter, in a few seconds you can see how you will look in old age. Just follow this link, take a selfie and meet your "future self"!</p> <p>Saludos,</p> <p>#name from PFM #AforeName</p> | <p>Subject: Are you saving for old age? Header text: Program your savings today</p> <p>Hola * FIRST:NAME *,</p> <p>For a better retirement, program your savings today with afore móvil.</p> <p>Saludos,</p> <p>#name de Afore #AforeName</p> |
| Message from your "future self" | <p>Subject: Your "future self" has a message for you Header text: Advance the time and meet your 2050 version.</p> <p>Hola * FIRST:NAME *,</p> <p>It turns out that * FIRST:NAME * from the future has a message for you. Click here to find out with our new old-age selfie filter.</p> <p>Hurry! Your "future self" doesn't want to keep waiting.</p> <p>Saludos,</p> <p>#name de Afore #AforeName</p> | <p>Subject: Are you saving for your retirement? Header text: You should.</p> <p>Hola * FIRST:NAME *,</p> <p>Click here and program your savings today with afore móvil.</p> <p>Hurry! The future doesn't wait.</p> <p>Saludos,</p> <p>#name de Afore #AforeName</p> |
| Limited time, try it today | <p>Subject: For a limited time, try our old-age selfie filter. Don't miss your change to meet your future self! Header text: The future has arrived. Today you can find out how you will look at 65 years old. Try it for yourself.</p> <p>Hola * FIRST:NAME *,</p> <p>Take advantage of the opportunity to meet your future self! Click here now!</p> <p>With our new old-age selfie filter you can see how you will look in old age. Try it for yourself.</p> <p>Saludos,</p> <p>#name de Afore #AforeName</p> | <p>Subject: Don't waste more time to save for your retirement. Header text: Program your savings today</p> <p>Hola * FIRST:NAME *,</p> <p>Don't waste more time, click here and program your savings TODAY with afore móvil.</p> <p>Hurry up!</p> <p>Saludos,</p> <p>#name de Afore #AforeName</p> |

Figure S6. Original Spanish emails inviting account holders to meet their future selves

| Theme | Treatment Emails | Control Emails |
|-------------------------------|--|--|
| ¿Como lucirás en la vejez? | <p>Subject: ¿Quieres ver como te veras en la tercera edad? Header text: Asomate al futuro y averigua como te sientan los años</p> <p>Hola * FIRST:NAME *,</p> <p>Con nuestro nuevo filtro selfie tercera edad, en pocos segundos puedes ver como te veras en la tercera edad. [hyperlink button text=] ¡Solo sigue este link, tomate una selfie y conoce a tu 'yo futuro'!</p> <p>Para una mejor vejez, programa tu ahorro hoy.</p> <p>Saludos,</p> <p>#name de Afore CitiBanamex Afore</p> <p>PD: Para una mejor experiencia sigue este link desde tu celular</p> | <p>Subject: ¿Ya estas ahorrando para el retiro? Header text: Programa tu ahorro hoy</p> <p>Hola * FIRST:NAME *,</p> <p>[hyperlink button text=]Para una mejor vejez, programa tu ahorro hoy con afore movil.</p> <p>Saludos,</p> <p>#name de Afore CitiBanamex Afore</p> |
| Mensaje de tu "yo futuro" | <p>Subject: Tu "yo futuro" tiene un mensaje para ti Header text: Adelanta el tiempo y conoce tu version 2050.</p> <p>Hola * FIRST:NAME *,</p> <p>Fijate que * FIRST:NAME * del futuro tiene un mensaje para ti. Haz clic aqui para descubrirlo con nuestro nuevo filtro tercera edad de fotos selfie.</p> <p>[hyperlink button text=]¡Date prisa haz clic aqui! Tu 'yo futuro' no quiere que sigas esperando.</p> <p>Para una mejor vejez, programa tu ahorro hoy.</p> <p>Saludos,</p> <p>#name de Afore CitiBanamex Afore</p> <p>PD: Para una mejor experiencia sigue este link desde tu celular</p> | <p>Subject: ¿Estas ahorrando para el retiro? Header text: Es una buena idea.</p> <p>Hola * FIRST:NAME *,</p> <p>[hyperlink button text=]Haz clic aqui para programar tu ahorro hoy con afore movil.</p> <p>¡Date prisa! El futuro no espera.</p> <p>Saludos,</p> <p>#name de Afore CitiBanamex Afore</p> |
| Tiempo limitado, pruébalo hoy | <p>Subject: Por un tiempo limitado descubre nuestro filtro selfie tercera edad. ¡No pierdas tu chance conocer a tu "yo futuro"! Header text: El futuro ya está aqui. Hoy puedes descubrir como luciras en la tercera edad. Pruebalo por ti mismo.</p> <p>Hola * FIRST:NAME *,</p> <p>[hyperlink button text=]¡Aprovechar el chance de conocer a tu ser futuro! ¡Haz clic aqui ahora!</p> <p>Con nuestro nuevo filtro de fotos selfie puedes ver como te veras en la tercera edad. Pruebalo por ti mismo.</p> <p>Para una mejor vejez, programa tu ahorro hoy.</p> <p>Saludos,</p> <p>#name de Afore CitiBanamex Afore</p> <p>PD: Para una mejor experiencia sigue este link desde tu celular</p> | <p>Subject: No pierdas mas tiempo, ahorra ya para tu "yo futuro" Header text: Programa tu ahorro hoy</p> <p>Hola * FIRST:NAME *,</p> <p>[hyperlink button text=]No pierdas mas tiempo, haz clic aqui y programa tu ahorro HOY con afore movil.</p> <p>¡Date prisa!</p> <p>Saludos,</p> <p>#name de Afore CitiBanamex Afore</p> |

Figure S7. Original Spanish sample email format

AFORE 



Descubre cómo lucirás en la tercera edad

Hola Juan,



¡Aprovecha la oportunidad de conocer a tu "Yo futuro" con nuestro nuevo filtro de fotos!

Descubre cómo te verás cuando llegues a la tercera edad.

¡Pruébalo desde tu dispositivo móvil!

[Haz clic aquí](#)

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