# House of cards

A DIAGNOSIS OF NEEDS AND A PROPOSAL OF AN INSTRUCTIONAL DESIGN FOR HOME INSURANCE AND NATURAL DISASTER EDUCATION

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# What is a "house of cards"?

A plan, organization, or other entity that is destined to fail due to a weak structure or foundation (likened to a literal house of cards, which is built by balancing playing cards against one another, and is very easily toppled).



Source: Wikimedia

## Purpose of this research:
- Design a pilot study of educational needs associated to natural disasters and home insurance.
- Elaborate an instructional design to learn through MOOC or LMS environments.

# Scenario

In September 19, 2017, an earthquake struck around Mexico City.

Outcome of the event:

- More than 73,000 properties damaged.

- Impact in the economy: 0.1 – 0.3% GDP

- Estimations suggested that $3.4 billion dollars would be required for reconstruction.

(Gobierno de la Ciudad de México & The Rockefeller Foundation, 2018)

# Problem

*"Luck, not tougher building standards, spared Mexico in quake"*

(New York Times, 2017)

- The lack of major damages between the 1985 earthquake and 2017 earthquake is due to the nature of the event.

- A study performed by Reinoso, Jaimes & Torres (2015) found that is difficult to assess the buildings earthquake performance.

- Many of them don't follow construction codes correctly.

## How about home & disaster insurance?

- AMIS: Only 4.5% of houses in Mexico are insured (Macias, 2017)

- AXA: Since 1985, the number has increased between 3 to 5%. (Torres, 2015) and around 150K (of 2.5M~) are insured with some kind of protection.
  - Many of them, because insurance is included in the mortgage.

| | |
|---|---|
| **Participants and age** | Survey conducted to a convenience sample ($n$ = 91) completed the questionnaire. 62.6% male, 37.4% female. Age range observed was 16 to 69 years old, with an average of 44 years, median of 49.5 and a mode of 54 years old. |
| **Delegations** | From the 16 delegations of Mexico City, more than half of the participants lived in one of five: Benito Juárez (15.9%), Coyoacán (13.6%), Tláhuac (12.5%), Iztapalapa (11.4%) and Tlalpan (11.4%). |
| **Exposure to hazards** | A list of hazards was presented to participants. They choosed those that they perceived more exposure, allowing them to choose more than one option. The five hazards more frequent were. 1) earthquake (92.3%), 2) flood (53.8%), 3) heatwaves (48.4%), 4) coldwaves (24.2%), y 5) volcanic eruption (22%). |
| **Training for natural disaster** | 62.6% of participants said that they don't have any training to face natural disasters; while 37.4% affirmed to have received training, at least one time. |
| **Property damage** | From the sample, 68.1% declares that no natural disaster has affected their property, while 31.9% affirms that they have been affected. |
| Source: Self-made. | |

# Diagnosis of needs

# Survey questions

1. Is your house insured against natural disasters?

2. I know the terms and conditions of the insurance policies that I have (even if these are given by Emergency Governmental Funds or insurance companies).

3. I have a folder with important documents, physical and digital, to carry them in case of a natural disaster.

4. I can confirm that my house has been constructed following the construction codes required to mitigate the damage due natural disasters.

5. You receive a better job offer. The company gives you the choice to live in three places – all of them, seismic zones. Which one would you choose?

6. In September 19, 2017, an earthquake occurred at Mexico City. However, the epicenter of the seismic movement was originated in the state of...

7. In theory, what is the average price of a home insurance policy in Mexico City?

8. Which factors could affect the valuation of a premium for home insurance with natural disasters protection?

9. Of the following options, select those in which you have been prepared/trained (workshops, simulations) to act.

10. Of the following options, which have you talked with your family in case a of natural disaster?

11. During my life-time, I have participated in drills in case of earthquakes while in...

12. Is the same an earthquake that a seismic movement?

13. The earthquake of September 19, 2017 occurred the same day that the one of 1985 due to...

14. In which factors depend the destructive power of an earthquake?

# Results (Keypoints)

Natural disasters-related questions

- Accepting a job offer:
  - 47% prefer zone A, were 40 quakes of magnitude 4 – 4.5 occur yearly.
  - 41% prefer zone B, were quakes higher than magnitude 6.5 rarely occur.
  - 11% prefer zone C, were no earthquake has occurred in the last 5 years, and probability for one higher than magnitude 7 occur every 10 years.

Insurance-related questions:

- Only 1 of 4 people affirm their house is insured.
  - 80% of the participants don't know the terms and conditions of their policies.

- 44% don't have a digital backup or folder with important documentation.

- 59% affirm their house was constructed following construction codes.

- Believed factors that affect home insurance premium were: 1) zone, 2) age of construction, 3) compliance with construction codes, 4) type of property and 5) value of the property.

# Results (keypoints)

- 92% of the participants said that they have received training (drills) to act in case of earthquakes.

- The most discussed topics in their families selected by participants were: 1) evacuation routes, 2) communication tools, 3) first aid kit, 4) care and availability of important documentation and 5) awareness of safe zones and shelters.

- The perception of the average premium for home insurance differs between participants.
  - 60% respond "I don't know"
  - 13% think the price is $250 US per year.
  - 12% think the price is $1,000 US per year.

# Proposal course

Three instructional units were considered following guidelines created by cities governments and organizations.

1. Understanding risks (natural disasters)

2. Earthquakes

3. Preparedness and action in earthquakes (different stages)

| UNIDAD: 3 | NOMBRE: Acciones para mitigar pérdidas materiales en un sismo | |
|---|---|---|
| UNIDAD DE COMPETENCIA: Establece los procesos que puede implementar para minimizar los riesgos. Valora la importancia de salvaguardar la integridad física. Advierte distintas posibilidades para proteger su patrimonio familiar. Contrasta las acciones ante un sismo que proponen distintas instancias. | | |
| SESIÓN 3: Qué puedo hacer yo para estar preparado y cómo hacen en otros países. | | Tercera semana 17-23 / Junio / 2019 |

| | Instrumentación didáctica | | | | |
|---|---|---|---|---|---|
| Contenidos en Plataforma | Actividades de Aprendizaje y materiales de apoyo | Evidencias de aprendizaje | Rol | | |
| | | | Participante | Facilitador | |
| La sesión comprende los siguientes temas:<br><br>3.1 Prevención<br>3.1.1 Qué puedo hacer antes?<br>3.1.2 Plan de Protección civil Familiar y en Comunidad<br>3.1.3 Protección patrimonial – Seguros: "Respaldo CDMX" y esquemas en Instituciones financieras y de seguros.<br><br>3.2 Qué hacer durante y después de un sismo<br><br>3.3 Ejemplo de innovaciones educativas en reducción de riesgo de desastres | **Actividad 3: Considera y resume, las acciones que puede llevar a cabo e Identifica cómo en otros países se preparan para reducir el riesgo de desastre en un sismo.**<br><br>**Paso 1:**<br>¿Es lo mismo sismo que terremoto?<br>¿Qué hace el gobierno de la Ciudad de México para mitigar los quebrantos económicos de las familias en caso de que tu patrimonio se vea impactado por un sismo? | Al menos 3 participaciones en el foro de 5 o más renglones.<br><br>10% | Ser analítico ante lo que conoce y lo debería conocer ante un desastre por el Sismo. | Moderar y motivar la intervención y colaboración de todos los participantes, por medio de mensajes por correo. Guiar a los participantes para que respondan las preguntas detonadoras y se mantenga el tema en el foro. | |
| | **Paso 2:**<br>**Revisa en la plataforma el Video 1 – "¿Qué hacer antes, durante y después de un sismo?"**<br>Conforme lo visto y escuchado en el video y apoyado en un procesador de textos o un block de notas rescata la siguiente información:<br>- ¿Qué hacer en caso de sismo?<br>- ¿Qué es Protección patrimonial?<br>- ¿Cuáles son los 3 países más adelantados en cuanto a reducción de riesgo de desastres? | N/A | Ver el video propuesto, comprender y enlistar las ideas principales identificando los conceptos que se le solicitan al inicio del mismo video. | El último día de la semana de visualización del video, enviar un mensaje de anclaje de los conceptos vistos en el video. retroalimentación con pequeñas puntualizaciones acerca de los temas de la unidad y bibliografía especializada. | |
| | **Paso 3:**<br>**Revisa en línea el siguiente artículo**<br>Notimex. (15 de febrero de 2018). Las casas de la Ciudad de México tendrán seguro contra sismos. *Expansión*. Recuperado el 20 de 04 de 2019, de https://expansion.mx/nacional/2018/02/14/inmuebles- | Práctica en línea – Calculadora de seguros de casa. Participación en el juego de "StopDisasters" | Leer e investigar en distintos sitios de internet las coberturas y requisitos para contar con esos beneficios de protección patrimonial adicionales a | Moderar y motivar la investigación en diferentes sitios y asesorar a los participantes, por medio de mensajes por correo o herramientas de comunicación asíncrona de la plataforma. | |

# Conclusion

Participants were partially aware of issues related to natural disasters. Even knowledge about earthquakes (in specific) was good, it was found a lack of understanding of home insurance. In example, Mexico City people have an insurance through the government, but most people was unaware of this fact.

Limitations of research:
- Geography limitations
- Time limitations (course work)

Future steps: Conduct the pilot study through Google Classroom and re-design

# Thank you!

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Researchgate: Through QR code!

# References

Ahmed, A., Franco, M., & Fountain, H. (2017). Luck, Not Tougher Building Standards, Spared Mexico in Quake. Retrieved from https://www.nytimes.com/2017/09/23/world/americas/mexico-city-earthquake-buildings.html

A house of cards (2015). *Farlex Dictionary of Idioms*. Retrieved from https://idioms.thefreedictionary.com/a+house+of+cards

Macías, S. (2017). A propósito del sismo en México, ¿tienes seguro de casa-habitación? Retrieved from https://elpais.com/internacional/2017/09/08/mexico/1504898430_326193.html

Eduardo Reinoso, Miguel A. Jaimes & Marco A. Torres (2016) Evaluation of building code compliance in Mexico City: mid-rise dwellings, Building Research & Information, 44:2, 202-213, DOI: 10.1080/09613218.2014.991622

Gobierno de la Ciudad de México, & The Rockefeller Foundation. (2018). Aprender del sismo para ser más resilientes. Ciudad de México. Retrieved from http://100resilientcities.org/wp-content/uploads/2018/09/CDMX-Aprender-del-Sismo-Para-Ser-Mas-Resilientes.pdf

Torres, Y. (2015). Desde sismo de 1985, seguros para viviendas subió a sólo 5%. Retrieved from https://www.elfinanciero.com.mx/economia/desde-sismo-de-1985-seguros-para-viviendas-subio-a-solo.html

Card castle6.jpg (2007). Wikimedia Commons. Retrieved from https://commons.wikimedia.org/wiki/File:Card_castle6.JPG