Why Users (Don't) Use Password Managers at a Large Educational Institution

Qualitative Codebook

Peter Mayer

peter.mayer@kit.edu
Karlsruhe Institute of Technology

Collins W. Munyendo

cmunyendo@gwu.edu

The George Washington University

Michelle L. Mazurek

mmazurek@umd.edu

University of Maryland, College Park

Adam J. Aviv

aaviv@gwu.edu

The George Washington University

- NA (224)
- easy-to-remember (160)
- memorize (134)

frequent (18), primary (10), sensitive (9), financial (5), reuse (4), outdated (3), guess-from-variations (2), similar-passwords (2), work (1), own (1), difficult (1), hard-to-recall-strong-pwds (1), typed-where-no-pm (1), SSO (1), multiple-devices (1), simple-pwds (1), not-browser (1), non-sensitive (1), familiar-ones (1), mnemonics (1), personal-system (1), never-changed (1)

• secure (99)

uni-protection (3)

• password-manager (91)

lastpass (27), icloud (16), google-auto-fill (14), 1password (11), password-safe (3), keepassxc (2), apple-keyring-feature (1), keypass (1), chrome (1), firefox (1), vault-password (1), roboform (1), bitwarden (1), ewallet (1), dropbox (1), store-by-root-kdbx-database (1), vault (1)

• memorable (85)

uni-associated (1)

• reuse (84)

new-variation (34), same-as-other-accounts (8), fromprevious-employment (4), work (2), non-sensitive (1), not-more-than-three-times (1), outdated (1), from-highschool (1), ensure-memorability (1), infrequent (1)

keep-record (78)

hard-copy (32), save-in-excel (13), digital (11), notesapp (9), cell-phone (7), email (1)

- numbers (75)
- multiple-variations (70)

category-dependent (4), unimportant-accounts (3)

• same-password (63)

uni-associated (7), category (5), similar-category-accounts (4), no-more-than-three-accounts (1), unimportant-accounts (1)

• browser (63)

chrome (23), non-sensitive (8), primary (5), frequent (4), sync (4), outdated (3), infrequent (3), firefox (2), convenient (2), trivial (2), autofill (2), not-preferred (1), noregular-change (1), work (1), non-reuse (1), sensitive (1), no-sync (1), streaming-and-social-media (1), ease-of-use (1), complex-pwds (1), non-financial (1)

• digitally (62)

file (23), notes-app (16), local (3), google-drive (3), non-sensitive (2), password-protected (2), infrequent (2), saved (1), work (1), screenshot (1), sensitive (1), forgotten-multiple-times (1), phone (1), phone-autofill (1), email-self (1), google-doc (1), not-guessing (1), ease-of-use (1), regular-change (1), files (1), in-programs (1)

- easy-login (60)
- paper (60)

sensitive (9), infrequent (8), outdated (7), regular-change (3), complex-passwords (2), if-difficult-to-remember (2), initially (2), shared-accounts (2), primary (2), incidentally (1), reminders (1), reuse (1), work (1), not-standard-set (1), difficult-pwds-that-cannot-be-pasted (1), obfuscated-notes (1), non-sensitive (1), unique (1), if-no-cookies (1), device-specific (1)

• different-passwords (45)

randomly-generated (11), important-accounts (7), category-dependent (4), non-sensitive (1), difficult (1)

• important-account (45)

more-secure (8), secure-base-password (1)

• symbols (45)

- letters (43)
- convenient (43)
- special-character (31)
- helps-keep-track (31)
- strong-password (30)
- third-party (29)

primary (13), lastpass (10), personal (5), 1password (5), keepass (2), sensitive (2), dashlane (1), financial (1), work (1), roboform (1), outdated (1), phone (1), overwhelming (1), password-safe (1), infrequent (1)

- reuse-strategy (29)
- system (25)

keychain (23), non-sensitive (4), convenient (3), personal (2), primary (2), outdated (1), non-cross-platform (1), phone (1), not-often-typed (1), infrequent (1)

- something-personal (25)
- lacks-trust (24) security (17), privacy (3)
- difficulty-remembering (24)
- dont-need-to-remember (24) lazy (3)
- redundancy (21)
- authentication (21)
- unique (20)
- same-strategy (20)
- transition (19)
- similar-passwords (19)

variation (4), non-sensitive (2), reuse (1), not-writing-down (1), outdated (1)

• dont-need-it (18)

use-different-solution (4), good-memory (1)

- date (18) *month (3)*
- phrase (17)
- saves-time (17)
- single-sign-on (16)
- capital-letters (15)

- hard-to-guess (15)
- word (15)
- password-requirement (14)
- reset (14)

if-forgotten (6), infrequent (4), financial (1), pwd-ondifferent-device (1), complex-pwd (1), specific-system (1), not-big-deal (1)

• personally-related (14)

memorable (10)

• association (13)

uni (8), school (2), job (2)

- characters (13)
- unrelated-response (13)
- avoid-repeat-typing (13)
- random-password (12)
- no-strategy (11)
- satisfies-security-requirement (11)
- name (11)

family (3), pet (2), celebrity (1), hero (1)

• saved-in-browser (11)

frequent (1)

- · randomized (10)
- personally-created (10)
- same-level-of-security-as-other-accounts (10)
- do-not-want-to-be-hacked (10)
- able-to-have-unique-passwords (10)
- pm (10)

primary (3), regular-changes (1), outdated (1), work (1), similar-passwords (1), frequent (1), overwhelmed (1), infrequent (1)

- frequent-login (9)
- didnt-know-about-it (9)
- difficult-password-organization (9)
- different-strategy-by-category (9)
- several-passwords-reused (9)

four (4), three (4), two (1)

```
    random (9)

                                                                • decline-to-answer (4)
  characters (1), numbers (1)
                                                                • two-step-authentication (4)
• able-to-have-stronger-passwords (9)
                                                                • will-not-use-pm-again (4)
• used-required-elements (9)
                                                                  need-remote-access-at-all-times (1), can-be-hacked (1)
                                                                • uni-account (4)
• frustration (8)
  two-factor-authentication (3), forced-reset-password (2)
                                                                • received-recommendation (4)
• no-management (8)
                                                                • no-issues (4)
  ad-hoc (3), chaotically (1)
                                                                • rely-on-computer-to-save (4)
• secure-place (8)
                                                                • reuse-passwords (3)
• difficult-remembering-passwords (8)
                                                                • prefer-not-to-use-password-manager (3)

    do-not-know-how-secure (8)

                                                                • cookies (3)
• lacking-knowledge (8)
                                                                 frequent (1)
  technical-skills (3)
                                                                • worried-about-security (3)
• not-important-account (7)
                                                                • physically-store-passwords (3)
  uni-not-high-target (3)
                                                                  print-out (1)
• automatically-available (7)
                                                                • family-member-attribute (3)

    work-vs-personal (7)

                                                                • created-new-password (3)

    no-reason (7)

                                                                  did-not-allow-to-use-old-password (1)
• used-password-generator (7)
                                                                • prefer-one-password (3)
 from-norton (1), password-safe (1)
                                                                • too-much-steps (3)

    password-protected (7)

                                                                • prefer-not-creating-new-passwords (3)
• it-works (6)
                                                                • remember-me-feature (3)

    only-used-for-some-passwords (5)

                                                                • difficult (3)
• non-pm (5)
                                                                • important-information (3)
  outdated (4), financial (1)
                                                                • personally-unrelated (3)
• lowercase-letters (5)
                                                                • use-forgot-my-password (2)
• sentence (5)
                                                                • able-to-have-randomized-passwords (2)
• initials (5)
                                                                • words (2)
 pets (1), of-random-objects (1), personal (1)
                                                                • autopopulate (2)
• reset-passwords (5)
                                                                • sync-accross-devices (2)
  often (2)
                                                                • possibly (2)
• alphanumeric (4)
                                                                • fingerprint-authentication (2)

    dislike-password-manager (4)

  no-manual-entry (1), no-trust (1), time-consuming (1)

    saved-via-cookies (2)

• for-personal-use (4)
                                                                • trust (2)
```

• uni-generated-password (2) want-control-over-account (1) • forced-to-change-password (2) • returned-to-keychain (1) not-for-work (2) • not-against (1) • season (2) • rely-on-google-security (1) • song-lyrics (1) • memorize-passwords (2) • complicated (1) for-school (2) • dislike (1) • required-to-use (2) • not-effective (1) • easy-password (2) • mnemonic (1) • event (2) • simple (2) • no-cookies (1) financial (1), infrequent (1) • store-in-phone (2) • unify-passwords (1) • at-risk (2) • own-vs-others (1) • dont-use (2) • school-password (1) • ease-of-use (2) • secure-server (1) • password-access-across-devices (2) • cannot-tell (1) • cross-pm-sync (2) • incrementation (1) not-sensitive (1) • unique-profile-identifier (1) • save-in-emails (1) • dont-use-password-manager (1) • dont-need-to-reset-passwords (1) • fantasy-world (1) • same-formulaic-approach (1) · received-email-with-personal-data-stored-in-• password-formula (1) password-manager (1) • prefer-password-manager (1) • difficulty-managing-passwords (1) • considering-using-password-manager (1) • combination-makes-management-possible (1) • stopped-after-few-days (1) • pwd-variation (1) • saves-energy (1) number (1) • pwd-relates-to-self (1) • friend-attribute (1) • do-not-know-password-manager (1) • make-it-work (1) • depends-on-location (1) • able-to-share-passwords (1) • maybe (1) • MFA-procedure (1) • non-systematic (1) important-accounts (1) • long (1) • feel-confident (1) • firefox-algorithm (1) • if-easier-to-use (1) • anagram (1) • like-password-manager (1)

- two-university-passwords (1)
- do-not-remember (1)
- feel-unsafe (1)
- obfuscated-notes (1)
- lazy (1)
- different-strategies-for-different-platforms (1)
- dont-care (1)
- place (1)
- store-in-spreadsheet (1)
- best-right-now (1)
- personal-joke (1)
- not-familiar-with-security (1)
- acronym (1)
- efficient (1)
- occasional-use (1)
- exceed-password-requirements (1)
- store-on-laptop (1)
- did-not-keep-active (1)
- no-patience (1)
- rotating-suffix (1)
- consistent-system (1)
- mental-cypher (1)
- do-not-prefer-random-passwords (1)
- expire-at-different-times (1)
- no-sync (1)
- personal-use (1)
- google-security (1)
- if-needed (1)
- impacted-ability-to-access-accounts (1)
- weak-password-strength (1)
- stopped-working-on-computer (1)
- prefer-two-factor-authentication (1)
- pseudoencryption (1)

- store-on-usb (1)
- open-to-use (1)
- saved-in-google-account (1)
- does-not-help (1)
- not-sure (1)
- use-apple-key-chain (1)
- hackers-can-outsmart (1)
- cannot-memorize-all (1)
- non-reuse (0)

 more-unique (1)
- long-random (0) sensitive (1)
- uni-acount (0)
 unique-password (1)
- non-memory (0)

 infrequent (1)