

Conclusion

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A survey of over 900 students from over 20 universities across Taiwan confirms that Gen Z college students do care about environmental damage, yet they are held back by scattered information and a lack of practical tools. As an interaction design student, I began my research by trying to understand my potential users' mental model. If my design system meets that model, change becomes possible.

My prototype “*Green Filter*” app introduced here is an AI companion that translates raw environmental and financial data into plain language, revealing facts like the ESG record and CO₂ emission of a product, the materials used, the factory where it came from, etc. It aims to nudge users toward greener shopping, treating purchases as a type of investing - i.e. “Shopping-as-Investing”. In-person prototype testing with 32 students across 7 campuses uncovered everyday hurdles still matter: slow Wi-Fi, aging laptops, and dying batteries, all became challenges, stopping the user from achieving their goals. These problems are a reminder to design a lighter, mobile, more resilient version of the app.

Nonetheless, the prototype helped students imagine how everyday spending could become a form of financial activism, shifting budgets toward green products, and pressure companies to share honest ESG numbers. Giving young adults a convenient digital ally equips them to fold sustainability into daily life, empowers them to advocate for stronger legislation, and push both markets and policymakers toward greater transparency, accountability, and a healthier Earth.

RQ1: What design considerations should be addressed when designing an AI companion for college students integrating sustainability and finance?

From Literature Review, User Survey, Expert Interviews, and User Testing the Prototype.

A comprehensive literature review in the interconnected economic behavior and ecological sustainability underscores the critical role that financial decisions play in impacting the planet’s health.

Design for Visibility & Simplicity Testers often overlooked the AI analysis feature, thinking it was part of the website, not a 3rd party service. The interface must make key actions obvious. Use prominent announcements to announce new features (e.g. a pop-up tour highlighting what’s new). Minimize extra clicks: as one expert (Huang) noted, “people are lazy... if it’s easier to get the information that I don’t have to click a button, I will pay attention”. In short, design a streamlined UI with clear one-step interactions and in-context prompts.

Design for Intuitive Visuals & Feedback Replace dense text with clear graphics and simple ratings. Huang observed that users tune out long reports but immediately grasp an icon or “eco score” (e.g. a polar bear or 0–100 scale). Similarly, testers noticed numeric eco-scores more than textual features. Thus, represent sustainability metrics as concise visuals or scores, with brief tooltips explaining meaning.

Design for Engaging Tone & Fun Elements Use approachable language and interactive cues. Experts advised avoiding jargon: e.g. change button text from “Continue discussion” to a playful prompt to spark curiosity and intriguing to capture user interest. Gamification (e.g. progress bars, “unlocking” sustainable tips) may sustain engagement, given users’ limited patience for lengthy explanations.

Design for Trust and Transparency Students expressed moderate trust in AI (survey results show many neutral-to-skeptical responses). To build credibility, the companion must cite verifiable data (certifications, carbon labels, etc.) rather than vague claims. For example, testers distrusted offsetting alone (“I still feel like I’m not really doing it right” when just buying carbon credits.), so the app should provide concrete evidence of impact. Avoid taking ESG scores at face value – include context (e.g. B Corp or supply-chain data) as advised by literature. In practice, feature designs should highlight third-party credentials (green certifications) and explain methodology to counter skepticism.

Design Mobile-First For technical reasons the prototype testing was done using laptop computers (Apple does not allow adding 3rd party overlays on iOS apps the same way Google allows with Chrome Browser Extensions). However, given 96% of students use smartphones (majority iOS), mobile-first is a must, even given all the technical limitations. The design should favor a mobile app or browser extension that integrates with their existing shopping/payment tools. Survey clustering suggests leveraging daily habits (shopping/savings apps) as entry points. Ensure compatibility (notably, iOS imposes browser restrictions) and consider platform-specific design (e.g. integrating with Momo app interface as envisioned). Shopee was consistently mentioned by testers and could serve for the next round of testing instead of Momo.

RQ2: How can AI companions support college students with sustainability knowledge in the context of financial decisions?

From Literature Review, User Survey, Expert Interviews, and User Testing the Prototype.

Contextualized Information at Point-of-Decision Embed sustainability data into shopping and investment flows. In prototype testing, participants valued seeing hidden product info (ingredients, manufacturing “history”) that they normally don’t encounter. For example, revealing that a facial mask contained problematic chemicals led a student to switch to an aloe-based alternative. This suggests the AI should surface concise ecological/health facts (e.g. “contains X chemical linked to...”) whenever users view a product. Similarly, in the investment context the AI showed company ESG scores and stock info. Users reacted positively: one noted, “Buying things is also an investment... I can help you analyze if the money spent is good or bad”. Thus, frame purchases as “investments” in sustainable companies to link finance and ecology.

Sustainable Alternatives and Comparisons Provide actionable recommendations. Testers frequently clicked a “Find Alternatives” feature, and Cathy Wang confirms that students want alerts on “the most dangerous products” to avoid. Accordingly, the companion should automatically flag high-impact products in the user’s list and suggest greener options or categories. In finance mode, it should compare companies’ performance (e.g. “Company X is high-ESG, Company Y is not”) so students can weigh investment choices. Survey data underscores this: roughly one-third of respondents want pre-investment checks of company eco-credentials (31% for certifications, 26% for consumer reviews) and comparisons (26%) of environmental performance. The AI can fulfill these by summarizing third-party eco-reports or consumer sentiments on companies.

Personal Sustainability Dashboard Many students expressed interest in tracking their own impact (25% wanted a monthly “eco-score” of spending). Building on this, the app can maintain a simple personal report (e.g. “Your spending this month saved X kg CO₂” or “you’re now 20% greener”). This aligns with providing “carbon score” feedback that testers noticed. The dashboard should be succinct, using visuals (progress bars, infographics) rather than verbose text, so students quickly grasp progress (Huang’s scale idea).

Educational Nudges & Explanations Use the AI chat (or chat-like prompts) to elaborate on sustainability concepts as needed. Although few testers clicked the “Chat with AI” button during prototyping, it can serve as a fallback for curious users. For example, when a student sees a product’s green score, they could ask “Why?” and the AI could briefly explain (“This brand was rated low because it uses high-carbon packaging”, sort of like in their earliest prototype). Encouraging exploration without overwhelming users aligns with Audrey Tang’s insight that youth are eager to engage but need clear, relatable contexts (e.g. connecting a bubble-tea straw ban to personal habits). Overall, the AI should act as an informed guide: contextualizing data, answering “what-if” questions, and helping students internalize how their financial choices affect sustainability.

RQ3: What AI companion features do college students prioritize as the highest?

From User Survey, Expert Interviews, and User Testing the Prototype.

Eco-Impact Product Filters: The highest-priority feature is product-level sustainability comparison. In the survey, 63% of students wanted to “see which products are most polluting so I can avoid them,” far above other categories. This aligns with testing observations: Cathy notes “the main feature...was to avoid the most...dangerous products” via an alert on the shopping list. Accordingly, the companion should prominently offer “sustainability filters” (e.g. sort products by carbon footprint or toxin content) and alternative suggestions, just as users clicked the “Find Alternatives” button in our prototype.

Supply Chain Transparency: Other top features relate to sourcing. About 41% of respondents want to check product origin (e.g. local vs. imported) and 40% want to know how eco-friendly the production process is. Designing a simple icon or tag for “local” or “certified eco-friendly factory” (as Chen-Ying Huang recommends using recognizable symbols) would meet these needs. Similarly, one-third favored an “organic” product search. The prototype’s green-colored “Analysis” tab (showing carbon emissions by product type) was also used by testers, indicating interest in seeing how choices impact emissions cumulatively.

Personal Eco-Score and History: A quarter of students (25%) expressed interest in a monthly report of their own eco-score. In testing, participants took screenshots of the carbon-reduction analysis, suggesting value in recording progress. We should include a lightweight “eco-dashboard” feature: an overview of past decisions, scores, and tips. Crucially, it must be eye-catching and concise (e.g. a single visual per month) so students will actually review it.

Sustainable Investing: Many students expect the AI to support green investing. Roughly 26–32% of respondents wanted to see company eco-scores, certifications, or performance comparisons before investing. Testers saw company ESG ratings and stock info (they asked “what is this company’s stock code?”) and even got recommendations for similar sustainable companies. Thus, the feature set should include an investment tab with clear “sustainability ratings” for companies alongside stock data, and suggestions of alternative stocks aligned with the student’s values.

Lower-Priority Features Give the high usage of social media in Taiwan, I was surprised community-related and social features ranked low in the survey. Only around 12% of the respondents wanted social networking with eco-peers, and indeed testers rarely engaged even with the AI’s chat option to ask more questions. These findings suggest focusing development effort on concrete decision aids (filtering, scoring, recommendations) rather than social networking or open-ended chat.

Final Takeaway

In this research, I have integrated quantitative survey trends with qualitative insights from testing and interviews. For instance, strong survey interest in product comparisons (63%) is consistent with testers clicking the “Find Alternatives” feature and the experts (Huang, Wang) emphasizing clear eco-indicators. By aligning the AI companion’s design closely with the above patterns: favoring concise visual info, high discoverability of features, and actionable eco-insights, I can better meet student needs, providing sustainable financial decision support exactly at the right context and the right time.

Even if college students don’t have enough money to affect companies directly, they can demand financial tools work better (higher baseline for sustainability) to galvanize and encourage institutional investment into sustainability and encreasing ESG accessibility. Influencing business governance is the main point of leverage. G->S->E, not E->S->G. Aggregating Consumer Demand, Amplifying Consumer Influence, Enhancing Market Standards. Design is Political Action, Eco-Design Democratizes ESG Accessibility.