

Desk Research - Nip in the Bud

Abstract

This report examines applications, products and academic literature with the aim of reducing mental workload. The goal is to identify strategies that help individuals cope with stress in various contexts, including work, academic settings and everyday tasks. A comparative analysis will be conducted to ascertain the effectiveness of these strategies and identify potential areas for improvement.

1 Desk Research

1.1 DecideAI - AI Decision Maker

DecideAI [6] is available in the Google Play Store and the App Store. DecideAI is an AI-powered decision-making app that helps users quickly choose between options, such as what to eat or watch, using voice commands. Acting like a decision roulette, it turns daily decisions into a fun, game-like experience.

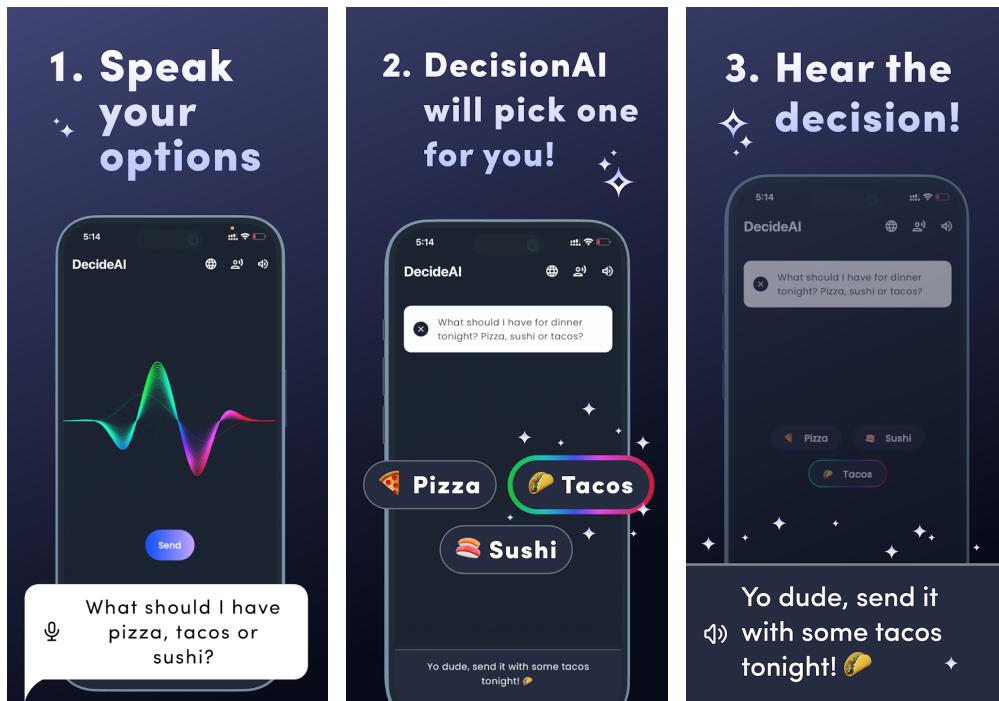


Figure 1: How the app Decide AI looks like

This app already helps people to simplify decisions and reduce their workload but several flaws have been identified:

Table 1: Pros and cons of the Poll.ly web app

Pros	Cons
Easy to use and intuitive interface	Need to speak to the options
Reduces mental load	Need to listen to the output
Allows to decide on many options, not only restaurants for example	Expensive
Several platforms support it	Privacy issues since it does not run on the phone but rather externally on a server
Free to use	It does not include the wishes of the user but rather makes the decision by random

1.2 Pollsify

poll.ly [12] is a web app that enables users to make democratic decisions and allows users to brainstorm.

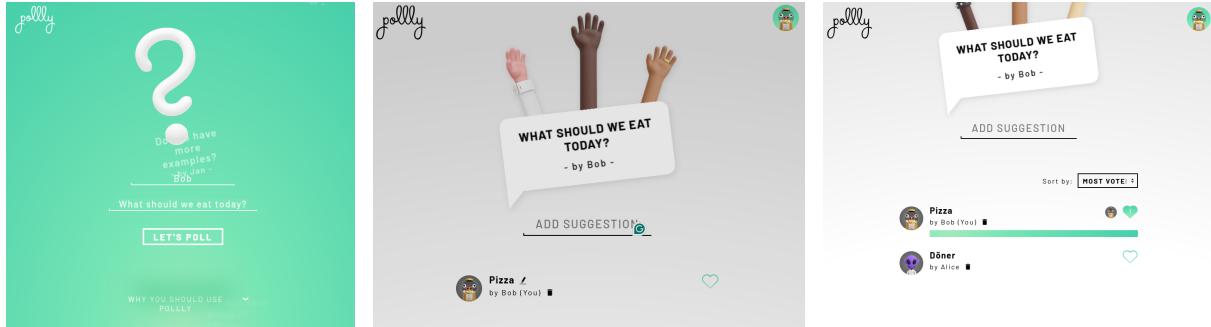


Figure 2: How the web app poll.ly looks like

Table 2: Pros and cons of the Poll.ly web app

Pros	Cons
Easy to use and intuitive interface	Limited customization options for polls
Allows quick democratic decision-making	May lack advanced features for large-scale polls
Enables brainstorming and feedback collection	No offline functionality
Friendly design	Cannot write comments or other suggestions
Free to use	Limited integrations with other platforms

As it can be seen in Table 2 the web app is easy to use and accessible from the internet. It can already reduce different mental workloads but it can still be hard if there is a possibility that still not everyone made a suggestion or voted, leaving the workload still at one person.

1.3 Pick and Eat

Pick and eat [7] allows the user to specify favorite eateries, dietary restrictions and one can exclude cuisine types. Then over multiple users one can create a team, and with the help of AI a restaurant will be suggested.

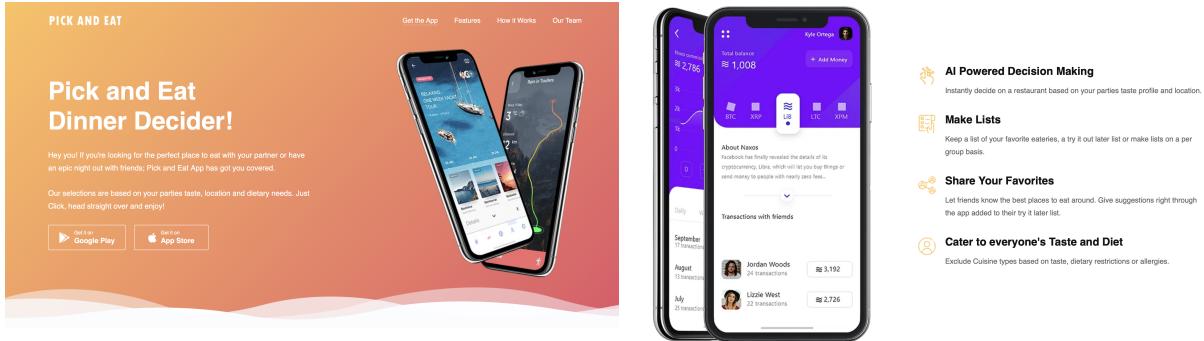


Figure 3: How the app Pick and Eat looks like.

The app sounds great at first glance; however, upon clicking the AppStore or PlayStore links a pop-up with the message "Pick and Eat App launches Soon!" appears as of 14th October 2024. On second glance one realises that the screenshots do not match up with the description they provided as seen in figure 3. Generally, upon searching apps or websites that find group eating preferences or restaurants, we only found random generators and websites or apps which don't seem to exist, this is one of them. The concept seems to be missing from the market as of now. Here is a list of pro's and con's nonetheless, see table 3.

Table 3: Pros and Cons of the Pick and Eat App

Pros	Cons
Allows to specify personal recipes	App does not exist yet
Allows to specify allergies and exclude cuisines	Screenshots don't match up
Quick decision making using AI and location	Only suggests restaurants, no recipes for local use

1.4 Shorter Order

Shorter Order [8] is a website, which collects orders of group members. One can specify which restaurant a group decided to go to or order from and then add email addresses. Each recipient will get a link via email and can then write what the person wants to order.

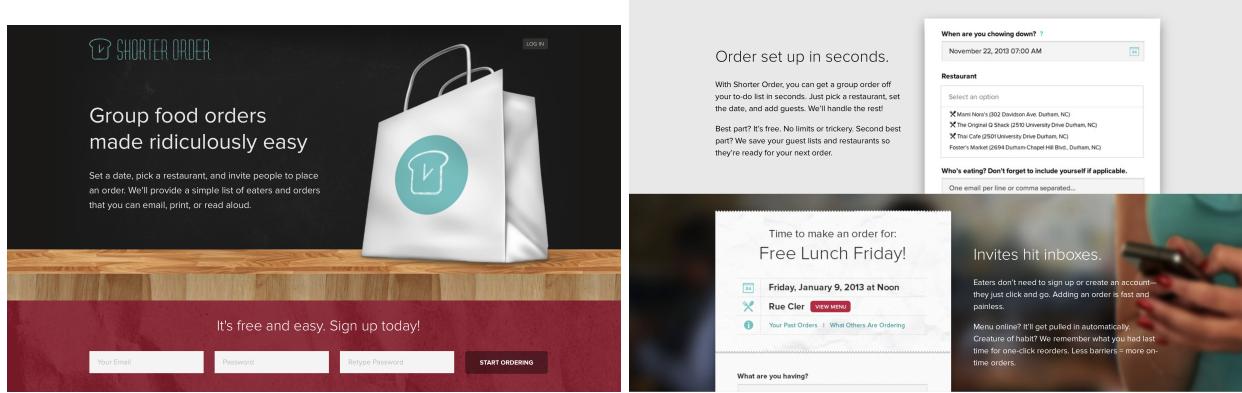


Figure 4: How the app Shorter Order looks like.

The power of this website its simplicity, one sets an occasion, then enters the recipients, and they all get an email (regardless if they have an account) and then they can write down their order. The organizer has all in one view, for screenshots see Figure 4. For pro and con, see table 4.

Table 4: Pros and Cons of the Shorter Order platform

Pros	Cons
Simple to use	Group decision already made, does not help finding a restaurant/recipe
Recipients don't need an account or app	Requires user to go to email and find it, no direct link
Collect orders easily	

1.5 WoeBot

The Woebot app initially appears promising, offering AI-driven mental health support through interactive conversations. It uses principles of Cognitive Behavioral Therapy to help users manage stress. [11]

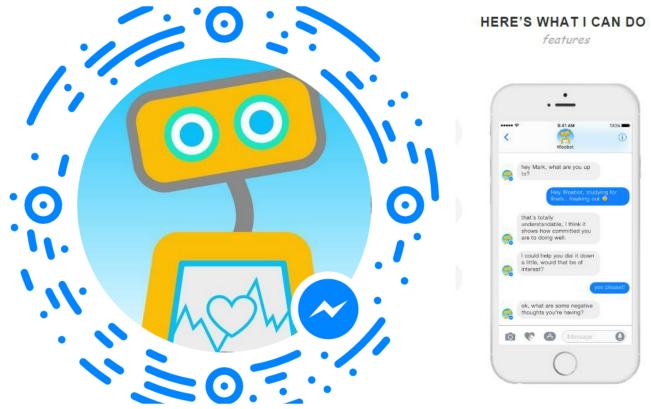


Figure 5: Logo and App preview of Woebot

However, upon closer inspection, there are some discrepancies. For instance, while the app claims to provide personalized CBT-based guidance, some users have reported that the responses can feel generic and less tailored to individual needs.

Additionally, the app's screenshots and descriptions sometimes do not fully align with the actual user experience.

Here is a short overview over the pro and cons of Woebot

Table 5: Pros and Cons of the Woebot

Pros	Cons
Empathetic and validating responses	Requires an access code from a provider or employer
Free to use, 24/7 and password-protected	Limited response to free text input [4]
Varied types of replies (text, emojis, videos, gifs)	Answers can feel generic [3]

1.6 Habitica

Habitica is a unique productivity app that gamifies your daily tasks and habits, turning them into a role-playing game (RPG). Users can create and manage tasks, set goals, and track habits while earning rewards and leveling up their in-game character.

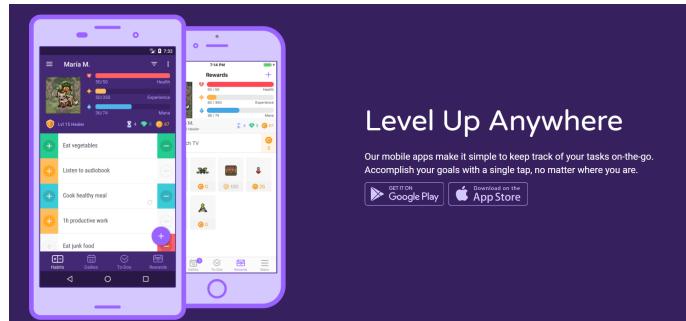


Figure 6: Habitica Preview

The app aims to make habit-building and productivity fun and engaging by incorporating game mechanics like experience points, quests, and rewards. [10] However, upon closer inspection, some users may find that the app's complexity can be overwhelming, especially for those new to habit tracking or RPGs. Additionally, while the gamification aspect is appealing to many, it might not be a strong motivator for everyone. Here is a list of pros and cons for Habitica:

Table 6: Pros and Cons of the Habitica

Pros	Cons
Social accountability through groups and challenges	Can be overwhelming to get started [9]
Customizable to fit individual needs	Requires consistent check-ins to earn rewards
Available on desktop, iOS, and Android	Internet access is required to use the app

1.7 Bring!

The Bring! app is a user-friendly shopping list and grocery management tool designed to streamline the shopping experience. Users can create and customize multiple shopping lists, adding items manually or selecting them from a catalog that includes a variety of products.



Figure 7: left: Bring! logo, right: Bring! workflow

The app allows for sharing lists with family or friends, making collaborative shopping easier. Additionally, Bring! provides features like item categorization, reminders for grocery runs, and recipe suggestions based on listed ingredients. With its intuitive interface and real-time updates, the app helps users stay organized and efficient while shopping.

Table 7: Pros and Cons of the Shorter Order platform

Pros	Cons
User-Friendly	Limited Product Database
Collaboration Features	No Built-in Price Comparison
Customizable Lists and Categories	Dependence on Internet Connection

1.8 Playtomic

Playtomic is an app to quickly find tennis and paddel partners. You can use it in a good chunk of the world to quickly find an opponent of your strength class and book the courts right there on the app.

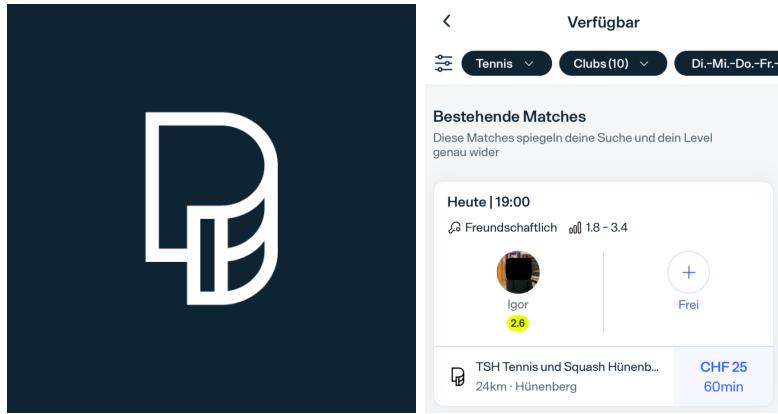


Figure 8: left: Playtomic logo, right: Matches in my area

The app allows you to import contacts to quickly find your existing friends. Furthermore it gives you a distance bar to consider matches in a chosen radius. It has a chat feature and a skill ranking, where you can rise through the ranks to keep you engaged and motivate. This ranking also gives you better matches as opponents with a similar skill ranking are much more fun to play.

Table 8: Pros and Cons of the Playtomic system

Pros	Cons
Matches skill level	Buggy
Gamification of rank	Advanced features are unintuitive
Easy to book courts	Slow

1.9 Tricount

Tricount is an app to manage the expenses of a group. Additionally it allows for automatic grouping into categories so you can better understand what you're spending money on.

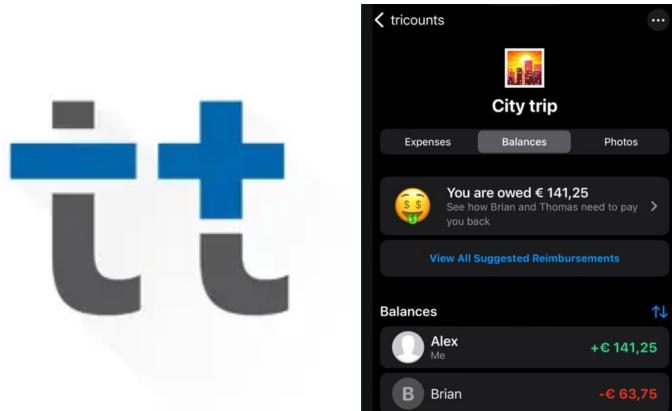


Figure 9: left: Tricount logo, right: Balance of a trip

With the app you can create groups to manage your expenses. It allows for custom splits to keep it fair. Furthermore it has the feature of giving you a digital credit card per group through which all expenses are added automatically. It also has heuristics to categorize your expenses into types of expenses.

Table 9: Pros and Cons of the Playtomic system

Pros	Cons
Multiple currencies	Buggy
Grouping of expense type	Free tier limited
Shared group control	Economic pressure to access your own historical data

1.10 Restaurant Choice: The Role of Information

Restaurant Choice: The Role of Information [1] is a paper investigating what aspects are most influential to people, and how the amount of information changes preferences. One key finding is a quantification of different aspects relevant to restaurant choice.

While most aspects measured are to a not statistically significant degree, it is still a very good starting point for further research.

TABLE 1. Ranking of Restaurant Selection Criteria With and Without Prior Information

Variable	With Information		Without Information		<i>p</i>
	Mean ^a	Rank	Mean ^a	Rank	
Food quality	1.8	1	2.1	1	0.034*
Food type	2.9	2	2.8	2	ns
Value for money	3.9	3	4.1	3	ns
Atmosphere	4.4	4	4.5	4	ns
Location	5.3	5	4.7	5	0.005**
Speed of service	5.8	6	5.9	6	ns
New experience	6.7	7	6.7	7	ns
Brand name	7.0	8	7.3	8	ns
Opening hours	8.1	9	7.9	9	ns
Facilities for children	9.2	10	9.0	10	ns

^a Based on the rank scale from 1 to 10, 1 = the most important, 10 = the least important
p < 0.05, ** *p* < 0.01

Figure 10: Ranking of Restaurant Selection Criteria

Pros	Cons
Gives a good overview	focused on restaurant marketing
Statistical relevance (mostly) well-labeled	Most measures not significant
Discusses limitations of the paper quite well	Does have limits as it does not differentiate the type of restuarant

1.11 Restaurant Recommendation for Group of People

The paper "Restaurant Recommendation for Group of People in Mobile Environments Using Probabilistic Multi-criteria Decision Making" [2] tries an AI approach to restaurant choices in groups. It uses a Bayesian model to predict choices and recommend a choice.

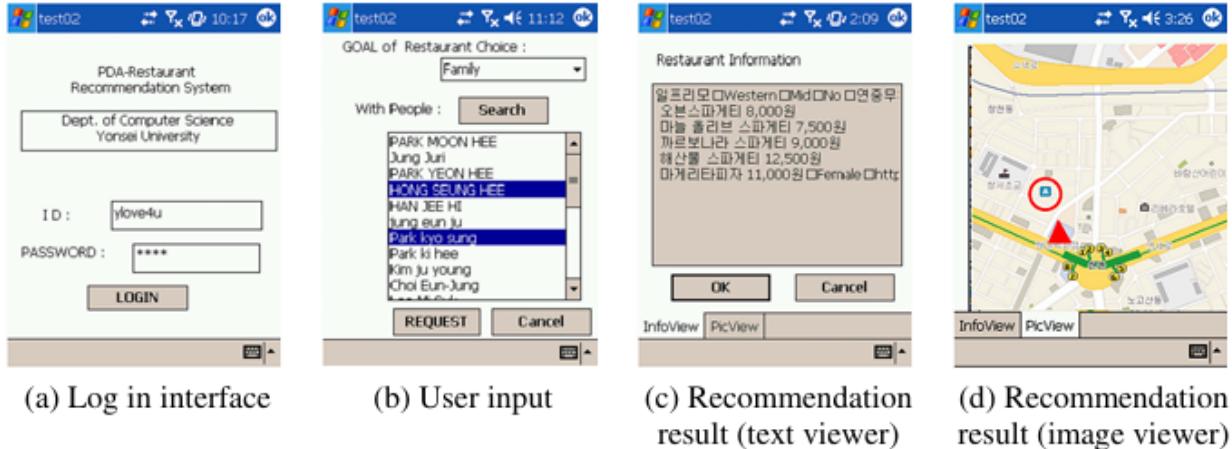


Fig. 5. Recommender system implemented in mobile device

Figure 11: The papers graphical selector interface

We can see some great ideas from this paper and have an insight into how users reacted to this, and how different systems to recommend behave regarding user satisfaction.

Pros	Cons
Is thematically quite close	is not the newest anymore
HCI/Usability-related information on the system	quite limited scope and small dataset

1.12 Identity effects in social media

Identity effects in social media [5] investigates how identity cues (eg reputation) affect social media behaviour. It comes to the conclusion that identity cues has a significant effect on behaviour, with a huge variation in voting linked with the commenters identity cues (and missing thereof). It concludes that rich-get-richer (eg more upvotes lead to more upvotes) and inequality are mediated by social cues. It even concludes that identity cues cause people to vote on social media content faster.

This can be relevant to our voting app. Assuming human behaviour on public social media is similar to "private" social media, eg the group in our voting app, we can conclude that, if we want to reduce inequality in our voting app, we should remove identity cues, so that the popular don't always get their way. As the current amount of "likes" (eg votes) on a topic lead to more likes on a topic we can consider making the state of the voting hidden, while in progress. However if we want less equality but a swifter resolution, to properly nip it in the bud, we can include identity cues and the in-progress state of the voting.

Production and reputation (observations: 12,583,408)			
	Up-vote	Down-vote	Reply
	(1)	(2)	(3)
Production	-0.207 (-0.305, -0.109)	0.060 (0.005, 0.115)	-0.036 (-0.06, -0.012)
	<0.001***	0.032**	0.002***
Production × Identified	0.127 (0.047, 0.207)	0.064 (-0.005, 0.133)	-0.019 (-0.041, 0.003)
	<0.001***	<0.067*	<0.084*
Reputation	0.424 (0.33, 0.518)	-0.129 (-0.198, -0.06)	-0.036 (-0.061, -0.011)
	<0.001***	<0.001***	0.005***
Reputation × Identified	0.163 (0.061, 0.265)	-0.199 (-0.332, -0.066)	0.012 (-0.01, 0.034)
	0.001***	0.003***	0.275
Adjusted R ²	0.068	0.042	0.022

Figure 12: Effect of identity cues on votes

Pros	Cons
Large amount of data analyzed	Private and public social media may not have same behaviour
Significant observed effect	Only one website and userbase examined

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