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# The Effects of Different Personalized Services on Consumer Cognition, Emotion, and Intention to Share Information

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The Effects of Different Personalization Services on Consumer Cognition, Emotion, and  
Intention to Share Information

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Honors Thesis submitted to the Peter T. Paul College of Business and Economics

University of New Hampshire

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**Introduction:**

As technology continues to advance, individuals are spending more time online than ever before. Technology has permeated practically every aspect of our lives as we use it to communicate, shop, and engage with entertainment, social media, and news. With the increased online activity, businesses are offering a variety of personalization services by tracking an ever-growing amount of data and learning the habits and trends of their consumers. With such services, companies aim to provide personalized experiences to better satisfy consumer preferences and gain a competitive advantage. Despite their potential benefits to consumers, such services have raised significant concerns regarding the privacy, security, and control of consumers' private data, resulting in substantial resistance among consumers (Pew Research Center, 2019).

This study focuses on three personalization services, personalized recommendations, targeted advertisement, and location tracking, and compares consumers' perceptions, attitude, emotions, and data sharing intention towards them. [In the literature, a growing body of research has examined key drivers that improve people's acceptance of the three services and willingness to trade personal information for the benefits afforded by the services] (Goldfarb, A., & Tucker, C. E., 2011) (Liang, Lai, H.-J., & Ku, Y.-C., 2006). This stream of research has improved our understanding of three personalization services but has not conducted comparative analyses. All three personalization services gather and analyze a mix of demographic, behavioral, engagement, and social data to tailor offerings to individual users' preferences and inclinations (Goldfarb & Tucker, 2011; Gomez-Uribe & Hunt, 2015; Lambrecht & Tucker, 2013; Tucker, 2014; Zhou, 2012). However, here I argue that these services have distinct characteristics that may evoke varied cognitive evaluations, emotional responses, and data sharing habits among consumers.

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Therefore, comparative analyses are essential as they reveal crucial insights into ethical implications and help businesses develop responsible, transparent, and user-friendly policies catered to data collection and usage for each of the personalization service. By gaining a thorough understanding of the differences in user perceptions, attitudes, emotions, and willingness to share information, businesses can adopt tailored strategies for each personalization service, thereby addressing users' concerns and fostering trust. This comparative approach will not only empower consumers to make informed decisions about sharing their data but also enable businesses to enhance the effectiveness and acceptability of personalized recommendations, targeted advertising, and location tracking, ultimately resulting in more satisfying user experiences and improved customer relationships.

#### **Literature Review:**

To identify gaps in the existing literature, this section reviews studies on personalized recommendations, targeted advertising, and location monitoring.

Several studies have investigated the factors that influence the acceptance of personalized or targeted marketing and advertising among individuals. Specifically, Krafft, Arden, and Verhoef (2017) utilized the utility maximization framework to investigate how users' cost-benefit calculations affect their propensity to grant permission for personalized communications and marketing. Their research indicates the benefit factors (perceived personal relevance, entertainment, and consumer information control) are positively while cost factors (registration process, privacy concerns, and perceived intrusiveness) are negatively associated with the probability of users granting permission for personalized communications and marketing. Perceived entertainment value or personal relevance are also found to mitigate the negative impact of privacy concern on permission grant. In another study, Ur, Leon, and Wang (2012)

seek to understand users' sentiment and perception toward online behavioral advertising. The results reveal that although some respondents believe that pop-up advertisements helped them discover products and services they otherwise would not have discovered, the majority of the respondents exhibit negative reactions to pop-up advertisements, which they frequently describe as irritating. Privacy concerns is found to be a significant source of negative sentiment. Further, Google emerges as the most trustworthy company among those mentioned, indicating that some organizations have superior reputations for protecting user information than others. As a result, users may be more inclined to share their information with certain businesses than others.

Several studies have examined location tracking in the context of location-based marketing or advertisement. Specifically, Heng, Carrol, Xin, and Rosson (2009) investigate the personalization privacy paradox to determine how individuals respond to covert and overt location-aware marketing (LAM) and how their propensity to share data is influenced by prior experiences. The study finds a positive relationship between personalization and the perceived benefits of information disclosure, which in turn positively impacts information disclosure. The perceived risk of information disclosure is negatively related to perceived value. Unni and Harmon (2007), focusing on location-based targeted advertisements (LBA), compare the effectiveness of push versus pull LBA as well as the effectiveness of promotional versus brand advertisements to consumers. Their study found that pull marketing and promotional advertising are more effective and beneficial for consumers than push marketing and brand advertising, which are perceived as significantly more intrusive. In a separate study, Thomas, Little, Briggs, McInnes, Jones, and Nicholson (2013) investigate senior citizens' perception of location tracking services. The results of the preliminary survey indicate that participants aged 50 to 75 perceive LBS as somewhat beneficial but are hesitant to use it due to privacy and visibility concerns. The

results of the follow-up survey reveal that adults viewed LBS as an assistive technology and that trust and privacy were the most important factors in their use. [Adults do not perceive a distinct benefit from this technology and have numerous privacy concerns that prevent them from using these devices and technologies, according to the findings of the study.]

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In the area of personalized content recommendations, Liang and Ku (2006) integrate information overload theory, gratification theory, and user involvement theory to explain user satisfaction towards personalized recommendations. The study finds that information overload theory and user involvement theory do help explain user satisfaction for personalized recommendations. User involvement theory impacts the perception people have but does not have an impact on their satisfaction. Directly relevant to this research, two studies focus on personalized recommendations for hedonic purposes. [One study focuses on how personal factors and visual control techniques influence people's perception of Spotify's music recommendations and how interfaces can be better designed for the music platform (Millecamp, Htun, N. N., Jin, Y., & Verbert, K., 2018).] The results of the study suggest that people prefer the radar chart design to the slider design. It also found that the most important things to consider when recommending songs on Spotify are the energy, tempo, and instrumental of the song which can easily be monitored on the platform. [Another study focuses on the acceptance of Netflix and the recommendation algorithms used on the platform. The study finds that people use Netflix for entertainment, companionship, distraction, and information. Users generally perceived the Netflix recommendation algorithm as a benefit. Although they enjoyed the recommended content on the platform, they did not actively participate in the recommendations by providing rating and reviews on the content] (Gomez-Uribe, C. A., & Hunt, N., 2015).

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While prior studies have significantly advanced our understanding of the three different personalization services as well as their acceptance and usage among consumers, one important gap remains. The extant literature examines each of the personalization services individually. Currently there are no comparative studies that examine how consumers' cognitive and affective reactions as well as their intention to share personal information may differ regarding the three personalization services. Although all three personalization services collect and track a combination of demographic, behavioral, engagement, and social data to individual users' preferences and tastes (Goldfarb, & Tucker, 2011; Gomez-Uribe, & Hunt, 2015; Lambrecht, & Tucker, 2013; Tucker, 2014; Zhou, 2012), the three services also differ in nontrivial ways that may trigger differential cognitive appraisal, affective response, and data sharing behavior from consumers. The section below develops the hypotheses and discusses how such nontrivial differences between the three services could impact consumers' cognitive appraisals, affective responses, and data sharing behaviors towards the services.

**Hypothesis Development:**

In this section, we argue that the three distinct personalization services—personalized recommendations, targeted advertising, and location tracking—differ in terms of the data they collect from consumers and the mindsets they trigger. These differences likely lead to varying cognitive appraisals, affective responses, and data sharing behaviors towards these services.

First, consumers may be more concerned about data used for targeted advertising and location tracking than for personalized recommendations for hedonic purposes. Companies collect data on individuals' lifestyle preferences, online purchases for targeted advertising, and geographic positions and movements for location tracking to maximize their marketing effectiveness. Such data involve financial and personal safety concerns and may be viewed as

more sensitive. For location tracking, users may feel their physical movements and daily routines are being monitored, leading to feelings of intrusion, fear of stalking, or concerns about the misuse of location data. As a result, consumers may view targeted advertising and location tracking as more intrusive.

Secondly, the settings for the three types of services being studied differ considerably. Platforms like Spotify and Netflix are primarily focused on providing pleasure, leisure, relaxation, entertainment, and enjoyment, exemplifying hedonic settings. Van der Heijden (2004) discovered that perceived enjoyment, defined as "the extent to which the activity of using the computer is perceived to be enjoyable in its own right" (Davis, 1992), is a vital driver of hedonic systems, along with ease of use. Conversely, perceived usefulness is of lesser significance. This indicates that hedonic systems prioritize user enjoyment, with ease of use being essential for user acceptance and perceived value. Personalized recommendations in hedonic settings strive to enhance user experience by simplifying search processes and increasing overall enjoyment (Van der Heijden, 2004). In such hedonic settings, consumers are more likely to be open to new experiences and willing to try new things. They are also more likely to be in a relaxed mood, seeking ways to enjoy themselves. Consequently, they are inclined to view personalized recommendations as a means to maximize their positive hedonic experiences, fostering positive emotions and attitudes (Tam & Ho, 2005). With a more relaxed mindset, consumers are likely to be more willing to share personal data.

In contrast, targeted advertisements and location tracking serve commercial or utilitarian purposes. These services aim to deliver value and utility to consumers by providing tailored ads based on their data and location. However, they lack the entertainment value and enjoyment



associated with personalized recommendations, causing users to adopt a different mindset (Dhar & Wertenbroch, 2000). In such commercial or utilitarian settings, users may feel that their personal information is being exploited for commercial gain or utilitarian reasons.

Personalization may be perceived as invasive, manipulative, or even unnecessary. Users in these environments may be more concerned about privacy, potential misuse of their data, or the relevance of personalized advertisements and services to their specific needs. As a result, the benefits of personalization may not be as evident when it comes to targeted advertisements and location tracking. Individuals might exhibit increased skepticism or resistance towards sharing their personal information or embracing personalized services. Users may be more inclined to maintain their privacy and consider potential security concerns when using targeted ads and location tracking.

Supporting these arguments, Dhar and Wertenbroch (2000) investigated the distinction between hedonic and utilitarian systems by examining consumer choice. They found that consumers with a utilitarian mindset approach purchase decisions more analytically, often conducting prior research to ensure they make the right choice. This deliberative process resembles the mindset users adopt when deciding whether to share data with companies employing targeted ads or location tracking due to privacy concerns. In contrast, hedonic purchases are typically impulsive, driven by desire rather than need. Consumers tend not to conduct prior research and instead make the purchase based on their attraction to the product, which usually provides entertainment or value rather than practicality. This mindset aligns with users sharing data for personalized recommendations on platforms like Netflix, Spotify, and Apple Music, where the entertainment value and seemingly innocuous data collection create a sense of security.

Building on the aforementioned discussions, we propose the following hypotheses:

*Among the three personalization services:*

*H1a-d: Consumers' (a) perceptions, (b) emotions, (c) attitudes, and (d) intentions to share data are most positive towards personalized recommendations.*

*H2a-d: Consumers' (a) perceptions, (b) emotions, (c) attitudes, and (d) intentions to share data are most negative towards targeted advertising.*

#### **Procedure and Methodology:**

This research study utilized a survey to investigate the perceptions of University of New Hampshire business students towards personalized recommendations, targeted advertisements, and location tracking. Upon obtaining approval from the University of New Hampshire Internal Review Board, the process of recruiting survey participants was initiated.

The survey was introduced to business school students during their classes, where the purpose, goals, and process of the survey were thoroughly explained. Subsequently, professors emailed the survey to their students. Students who opted to participate first reviewed a consent form before proceeding to complete the survey. Upon completion, students emailed a randomized code to their respective professors, serving as proof of their participation and qualifying them for extra credit. This incentive was designed to encourage thoughtful responses. However, alternative extra credit opportunities were made available to ensure all students had a chance to earn extra credit, regardless of their participation in the survey.

The survey was structured with an initial demographics section, followed by sections dedicated to each of the three data collection methods. Questions within these sections aimed to

gauge participants' perceptions of each method and their emotional responses to past experiences.

After a five-week period, the survey was closed, having received a total of 116 responses. During the subsequent data cleaning process, the number of valid responses was reduced to 60, as the remaining participants had left some questions unanswered, potentially affecting the integrity of the results. The demographic breakdown included 33 male students and 27 female students, with the average age of respondents being 21.38 years old.

[All the scales were assessed on a 5-point Likert scale. To measure positive and negative emotions, I adapted four items for positive emotions and five for negative from study by Krafft, M., Arden, C. M., & Verhoef, P. C. (2017). These items sought to determine a range of positive and negative feeling consumers may have when using each of the three methods and the respondents can choose any listed if they feel this way. Each of the items used in the study is provided in Appendix 1.]

To measure the attitude respondents had towards the methods I utilized four items adapted from the study by Liang, Lai, H.-J., & Ku, Y.-C. (2006). The three items were used to find out how positive the experience is, how beneficial, and how useful it is. Within the attitude section of the survey for each method it was also asked their willingness to trade their information for the given method to determine the willingness measure.

For measuring perceived value six items were utilized with three being positive and three being negative in association with the value of the method. These items were not based off of any prior study and are specific to the method in question. The goal is to determine how

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beneficial specific aspects are or of they are not helpful to the consumer and the risks are too great for the benefits.

While measuring privacy concerns just one question was asked with three items for the respondents. The questions asked how concerned they are with each method and utilized the 5-point Likert scale to determine the level of concern the individual felt towards each method.

All items are located in the Appendix.

### **Hypothesis Testing**

In this study, each subject responded to questions on three distinct personalization services, indicating that the measures are not independent. As a result, to test the hypotheses, I employed the paired T-test, which is designed to compare the mean of each measure across interrelated samples. The mean differences for each measure across the three personalization services are visually represented in Figure 1.

As depicted in Figure 1, the subjects demonstrated the highest positive emotion towards the personalization recommendation. This suggests a notable preference for this service among the three examined.

Respondents displayed the best attitude towards personalized recommendations based off of the questions asking about the emotions each method invokes for them.

When asked about the intention to share data, respondent's answers revealed that they are most likely to share their data if they receive personalized recommendations compared to targeted ads and location tracking services.

After looking at positive emotions, the study also asked about negative emotions each service invokes. The results show that targeted ads have a slightly more negative response than location tracking. Personalized recommendations had a significantly lower amount of negative responses compared to the other two.

One of the most crucial aspects of the study is determining which data collection method allows consumers to feel safe and trust the companies that track their data. Measuring privacy concerns, it was found that people had the highest level of trust in personalized recommendations, while targeted ads and location tracking had similar results with much higher privacy concerns.

Table 2 provides a summary of the results obtained from the paired T-test. A close examination of the table reveals that the mean difference between the responses to personalized recommendation and targeted advertisement stands at 0.94 for positive emotion. This difference is statistically significant, with a p-value of less than 0.001. Thus, this result provides support for H1b which suggests that consumers' emotions are most positive towards personalized recommendations.

The perceived benefit when comparing personalized recommendations and targeted ads has a mean difference of 0.79. This is significant at a p-value of 0.000 displaying how users find more benefits from recommendations than the targeted ads. These results support H1a where consumers perceptions of personalized recommendations are the most positive.

The results of consumers' attitude revealed a mean difference of 1.98 in favor of personalized recommendations. This was significant at a p-value of 0.000 and supports H1c where consumers attitude are most positive towards personalized recommendations.

The mean difference between these two for negative emotions is -1.266 and is also significant with a p-value of 0.000. These results show that people have more negative feelings and emotions when using or asked about targeted ads versus personalized recommendations which supports H2a that targeted ads will have the most negative emotions.

Looking into consumers' willingness to trade information the mean difference is 0.583 with a p-value significant at 0.001. Thus, the key findings show that respondents are more willing to give their data if it is used for personalized recommendations than for targeted advertisements and supports H1d for personalized recommendations being the most positively associated with willingness to share data.

For consumers privacy concerns we measured how much they trusted each data collection method with a higher score meaning that they trusted the method more and had less concerns about how the data is used. Looking at this for personalized recommendations and targeted ads there was a mean difference of 0.883 and a p-value of 0.00 which again is significant. The results of all these measures showed that consumers from the survey found personalized recommendations to invoke positive emotions, less negative emotions, found it more trustworthy, and more beneficial than targeted ads and supports H1a-d.

Comparing each measure for location tracking against personalized recommendations, positive emotions had a mean difference of -0.80 and was significant at a p-value of 0.000. This result supports H1b where the consumers emotions are most positive towards personalized

recommendations. After comparing personalized recommendations emotions to both other methods it is proven that this is indeed true.

For perceived benefits there was a mean difference of -0.41 at a p-value of 0.009. This significant finding displays how users find personalized recommendations to be more beneficial than location tracking as well.

Consumers' attitudes had a mean difference of -0.64 with a significant p-value of 0.000. These findings show that respondents have better attitude and emotions towards personalized recommendations versus location tracking.

Looking at negative emotion there was a mean difference of 1.07 and a significant p-value of 0.000. The results indicate individuals have more negative emotions while using or thinking about location tracking against personalized recommendations.

While determining individuals' willingness to trade their information we found there to be a mean difference of 0.483 and a significant p-value of 0.013. Again, these results are in the favor of personalized recommendations where people are more trusting and willing to trade their data for the benefits of these recommendations instead of those provided by location tracking.

Similar to the willingness to trade information the respondents reacted more positively towards privacy concerns as they trust personalized recommendations more than location tracking. The mean difference was -0.7 and had a significant p-value of 0.000. The results from the measure comparing personalized recommendations to both location tracking and targeted ads supports H1a-d showing that personalized recommendations has had overwhelming positive reactions compared to the others with better results in each measure.

Comparing targeted ads against location tracking was very interesting as we predicted that targeted ads would have the most negative association but were unsure how much worse the results would be against location tracking. For positive emotions there was a 0.138 mean difference, but the p-value was 0.366 so this result was not significant. The results showed that location tracking had more positive emotion responses, but it was not significant enough to be proven to be true.

Moving on to perceived benefits, the mean difference was 0.389 in favor of location tracking but again this was not significant because the p-value was 0.065 and the confidence interval used was a 90% confidence interval.

For consumer attitudes towards the data collection method the mean difference was 0.533 with a significant p-value of 0.004. The results indicate with confidence that consumers have a more favorable attitude with using location tracking services than receiving targeted ads supporting H2c.

Looking at negative emotions the mean difference was -0.197 in favor of location tracking, however the results were not significant at a p-value of 0.214.

The mean difference when looking at consumers' willingness to trade their information was 1.067 and this result was significant with a p-value of 0.000. This finding supports H2d with targeted ads having the most negative results for intention to share data.

Lastly looking at privacy concerns the mean difference was 0.183 but again was not significant at a p-value of 0.329 and cannot be directly supported. While all of the results for this comparison showed all positive results for location tracking against targeted ads there were only



2 significant results. Overall, the responses did indicate the most negative responses for targeted ads and supports most of H2.

## Appendix:

### Positive and Negative Emotion Measure

When receiving **personalized recommendations** on platforms like Spotify, Apple Music, or Netflix, I feel

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Valued	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Engaged	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Excited	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trusting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Uneasy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Violated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Angry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Frustrated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Irritated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Perceived Value Measures:

I find **location-based services** on apps to \_\_\_\_\_

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
reduce my searching efforts to find information/services I need	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
help me quickly access the information/services I need	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
help me easily access the information/services that I need	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Location tracking** used in apps \_\_\_\_\_.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Seems acceptable to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Choose strongly disagree for this response	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not mind personalized advertisements online	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tried to manipulate me in ways that I do not like	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Attitudes Measure

Question 17



All things considered, using **location tracking** services in exchange for service and information I need is an \_\_\_\_\_ experience.

Extremely Negative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely Positive
Extremely Useless	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely Useful
Extremely Harmful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely Beneficial

### Willingness to Trade Information Measure

I am willing to trade my personal information for **location tracking** services used in apps.

Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Privacy Concern Measure**

How concerned are you about threats to your personal privacy when \_\_\_\_\_

	Very concerned	Somewhat concerned	Neither concerned nor unconcerned	Somewhat unconcerned	Very unconcerned
using personalized recommendations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
using/receiving targeted advertisements?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
using location tracking?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Figure 1:** Data Collection Methods Mean Comparisons

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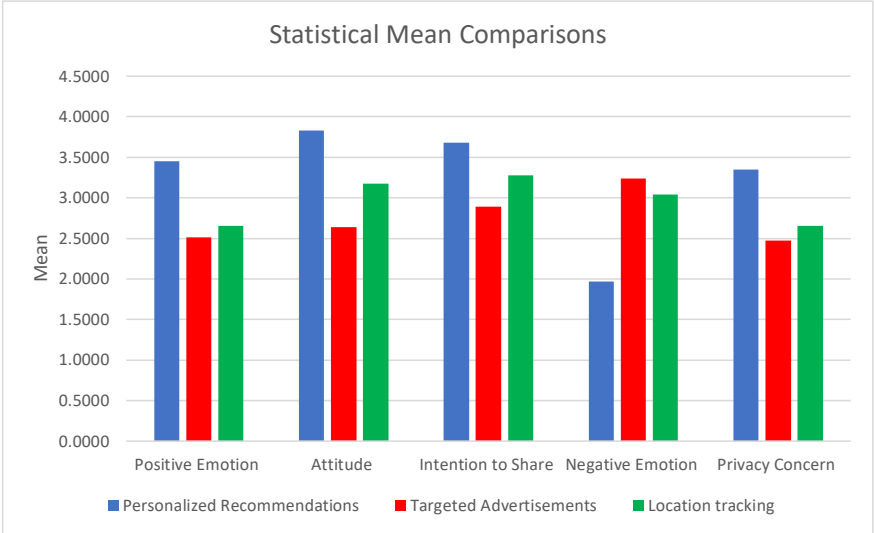


Table 1.: Data Collection Methods Statistical Data

<b>Personalized Recommendation vs. Targeted Ads</b>					
<b>Variables</b>	<b>Mean Difference</b>	<b>Standard Deviation</b>	<b>t</b>	<b>df</b>	<b>p-value</b>
<b>Positive Emotion</b>	0.9375	0.99109	7.327	59	0.000
<b>Perceived Benefits</b>	0.79444444	1.213037109	4.957	59	0.000
<b>Attitude</b>	1.197740113 0	0.982838652	9.361	58	0.000
<b>Negative Emotion</b>	-1.26583	1.15998	8.453	59	0.000
<b>Willingness to Trade Info</b>	0.583	1.331	3.394	59	0.001
<b>Privacy Concerns</b>	0.883	1.236	5.534	59	0.000
<b>Personalized Recommendations vs. Location Tracking</b>					
<b>Positive Emotion</b>	-0.80000	1.00085	6.192	59	0.000
<b>Perceived Benefits</b>	-0.40555556	1.164593261	2.697	59	0.009
<b>Attitude</b>	-0.644067797	1.064697188	4.647	58	0.000
<b>Negative Emotion</b>	1.069166667	1.013472453	8.172	59	0.000
<b>Willingness to Trade Info</b>	0.483	1.455	2.572	59	0.013
<b>Privacy Concerns</b>	-0.700	1.357	3.997	59	0.000
<b>Location Tracking vs Targeted Ads</b>					
<b>Positive Emotion</b>	0.13750	1.17028	0.910	59	0.366
<b>Perceived Benefits</b>	0.38888889	1.6017488872	1.881	59	0.065
<b>Attitude</b>	0.53333333	1.3601816651	3.037	59	0.004
<b>Negative Emotion</b>	-0.196666667	1.2120813681	1.257	59	0.214
<b>Willingness to Trade Info</b>	1.067	1.939	4.262	59	0.000
<b>Privacy Concerns</b>	0.183	1.444	0.984	59	0.329

**Discussion and Conclusion:**

The findings from this study offer valuable insights for all stakeholders, including businesses utilizing data and the users providing it. The results indicate that personalized recommendations were perceived as more beneficial and less intrusive compared to location tracking and targeted advertisements. Consequently, businesses should consider prioritizing this feature to enhance their customer relationships. Personalized recommendations tend to engender a sense of safety and comfort in consumers, making them more willing to share data due to visible benefits.

While the implementation of personalized recommendations may present challenges for some businesses, creative solutions will undoubtedly pay dividends. As for location tracking and targeted advertising, these methods also hold value, albeit to a lesser extent. Despite being viewed as more intrusive, there were still some positive responses for these methods. Thus, businesses can consider employing these techniques judiciously, when most appropriate.

To alleviate consumer concerns about location tracking and targeted advertising, businesses should strive for transparency in how consumer data is utilized. Increased transparency can foster trust, leading to more positive customer relationships. Another potential solution might involve offering consumers an easy, straightforward opt-in process for these data collection methods.

From the consumer's perspective, this study offers a deeper understanding of their own views on data collection methods and their associated emotions. Comparing the three methods allows consumers to evaluate which ones they trust most. The results underscore the advantages of personalized recommendations, particularly within the entertainment media context. However,

consumers should also remember to exercise caution and understand how their data is used, even when the benefits are apparent.

For targeted advertisements and location tracking, consumers should use these study results to become more informed about how their data is used and to read data tracking notices more thoroughly. If they are uncomfortable with how a company intends to use their data, they should refrain from opting in.

The issue of data tracking is complex as it offers significant benefits to both users and companies, but also raises concerns about customer data protection. As the volume of data continues to grow, it is imperative to prioritize consumer safety to ensure mutually beneficial outcomes.

While there are many important insights from this study there are still some limitations that impacted the results. One of the limitations is that the cohort chosen to take the survey was students within Paul College Business School between the ages of 18 to 23. These students are all of very similar ages and take most of the same courses which may cause them to have similar answers to each question. If this research was expanded, having respondents from a more diverse group of people may change the findings.

The survey responses also limited the results of the survey because Some respondents leaving questions blank or not finishing the entire survey. This caused their responses to be left out of final results so blank answers did not impact the final results. Ideally every question would be answered in order to have the most respondents and a more diverse group of answers. In the future every question should require a response to move on to guarantee each question is answered.



Using entertainment applications like Netflix and Spotify when talking about personalized recommendations also impacted the study. These are very specific recommendations based on entertainment value. While it gave respondents a very specific industry to focus on it also puts them into a different mindset give the hedonic mindset of the entertainment apps. If asked about these recommendations for news feeds or other industries consumers may not feel as comfortable sharing their information or not find it as beneficial.

**Key Insights:**

There are three key insights from the results of the study with the first being that consumers demonstrate more positive perceptions, emotions, attitudes, and intention to share data towards personalized recommendations. It was proven from the survey analysis that people find more benefits and do not have the same privacy concerns for personalized recommendations compared to both location tracking and targeted ads. Specifically, this is based on recommendations for entertainment apps like Netflix and Spotify.

Conversely consumers demonstrate more negative perceptions, emotions, attitudes, and intention to share data towards targeted advertisements. These ads are quite intrusive to consumers as they often pop up after searches or based on your data that displays a person's likes and dislikes. While This can be helpful by providing ads for products you may like it leaves consumers feeling like their privacy has been violated and companies are just using their data to quickly sell their products.

Looking towards the future interventions are necessary to improve consumers' perceptions, emotions, attitudes, and data sharing towards location tracking and targeted advertisements. These data collection methods are very intrusive as they collect personal data and a user's location. Companies need to improve the way they utilize these methods and be more transparent

in order to gain the trust of their customers. Making sure they are very specific in how they collect and use the data will be crucial if businesses continue to use consumer data in this fashion.

**References:**

Dhar, R., & Wertenbroch, K. (2000). Consumer choice between hedonic and utilitarian goods. *Journal of marketing research*, 37(1), 60-71.

Goldfarb, A., & Tucker, C. E. (2011). Privacy regulation and online advertising. *Management science*, 57(1), 57-71.

Krafft, M., Arden, C. M., & Verhoef, P. C. (2017). Permission marketing and privacy concerns—Why do customers (not) grant permissions?. *Journal of interactive marketing*, 39, 39-54.

Lambrecht, A., & Tucker, C. (2013). When does retargeting work? Information specificity in online advertising. *Journal of Marketing research*, 50(5), 561-576.

Liang, Lai, H.-J., & Ku, Y.-C. (2006). Personalized Content Recommendation and User Satisfaction: Theoretical Synthesis and Empirical Findings. *Journal of Management Information Systems*, 23(3), 45–70. <https://doi.org/10.2753/MIS0742-1222230303>

Millecamp, Htun, N. N., Jin, Y., & Verbert, K. (2018). Controlling Spotify Recommendations: Effects of Personal Characteristics on Music Recommender User Interfaces. *PROCEEDINGS OF THE 26TH CONFERENCE ON USER MODELING, ADAPTATION AND PERSONALIZATION (UMAP'18)*, 101–109. <https://doi.org/10.1145/3209219.3209223>

Tam, T., & Ho, S. Y. (2005). Web personalization as a persuasion strategy: An elaboration likelihood model perspective. *Information Systems Research*, 16(3), 271-291.

Tucker, C. E. (2014). Social networks, personalized advertising, and privacy controls. *Journal of marketing research*, 51(5), 546-562.

Unni, & Harmon, R. (2007). Perceived Effectiveness of Push vs. Pull Mobile Location Based Advertising. *Journal of Interactive Advertising*, 7(2), 28–40.  
<https://doi.org/10.1080/15252019.2007.10722129>

Ur, Leon, P., Cranor, L., Shay, R., & Wang, Y. (2012). Smart, useful, scary, creepy: perceptions of online behavioral advertising. *Proceedings of the Eighth Symposium on Usable Privacy and Security*, 1–15. <https://doi.org/10.1145/2335356.2335362>

Van der Heijden, H. (2004). User acceptance of hedonic information systems. *MIS quarterly*, 695-704

Varela, D., & Kaun, A. (2019). The Netflix Experience: A User-Focused Approach to the Netflix Recommendation Algorithm.

Xu, H., Luo, X. R., Carroll, J. M., & Rosson, M. B. (2011). The personalization privacy paradox: An exploratory study of decision making process for location-aware marketing. *Decision support systems*, 51(1), 42-52.

Zhou, T. (2012). Examining location-based services usage from the perspectives of unified theory of acceptance and use of technology and privacy risk. *Journal of Electronic Commerce Research*, 13(2), 135.