

Online Dating: A Swipe Away, But Is That So?

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Abstract

With the rise of the digital age, all aspects of social interaction are becoming digitalized, including dating. Attitudes toward this practice moving into the digital domain have been received with mixed enthusiasm. This paper attempts to find changes in attitudes based on the success of user participation in online dating applications and presents the findings of an investigation into how successful/negative participation leads to successful/negative attitudes regarding online dating applications. While previous studies sought to measure the motivation behind online dating applications, this survey sample of under 70 participants compares how experiences might determine attitudes toward online dating applications and found that there is a correlation between attitudes prior and post participation but that successful participation and length of usage were not significant in influencing attitudes after participation. These findings suggest that other factors besides successful participation can be more influential in determining attitudes about online dating.

Introduction

Online dating is a tool that has been around for decades, dating back to the emergence of computers, with a bloom of increased participants with the emergence of Social Network Services (Kuefler, 2019). In recent years, online dating has become more popular with applications such as Tinder, Bumble, or Hinge coming into the woodwork and having a grounded niche in most peoples' smartphones. Along with the rise of the COVID-19 pandemic and stay-home orders, Tinder has seen a "15% increase in new subscribers Match reported over the quarter" (Meisenzahal, 2020). It has changed the social scene with its easy and accessible features that make dating a different game than it was years prior. While social events, such as parties, were previously the most accepted form of social interaction among people of most demographics, the efficiency of online dating and the pending outcome of the pandemic has made online dating apps one of the most popular and used methods of finding potential partners in a busy world, thus changing its former reputation.

Yet even with the newfound popularity online dating has due to fast interactions and convenience, this form of communication is subject to different biased perspectives. The motives of online dating app users, as well as how it influences outcome (hookup or serious relationship), have long been a topic of discussion and research. Timmermans & Caluwe (2017) for example developed a Tinder Motive Scale (TMS) that successfully identified up to 13 Tinder motives, that suggested these motives were strongly and directly tied to offline outcomes. The same researchers in a different study ventured to use the Five-Factor personality model to assess individual personality and its influences on Tinder motives, highlighting different perspectives that shape interactions in this rapidly growing form of dating.

This paper aims to investigate the relationship between different attitudes and the perceived legitimacy of online dating before and after online dating participation. With an ongoing pandemic, this topic brings significance in identifying possible hindrances that are preventing people from seeking out relationships through online dating, which would help set the foundation for further research as well as application development, enhancing futuristic ways for people to find partners.

The main concept of the research is attitudes towards online dating. While online dating may cover a wide scope of platforms, this research will limit online dating to the use of applications such as Tinder, Bumble, or Hinge. Focus on attitudes prior to online dating participation and post online dating participation is the main measurement of the research. Online dating participation will refer to the usage of apps oriented for the purpose of dating. Attitudes toward online dating can lead to either participation with online dating or it can lead to no participation at all. If participation is present, variables such as success or failure can lead to either changes or continual attitudes towards online dating. For this research, the focus will be mainly on active participation and how that active participation can change a person's attitude towards online dating. The amount of time spent on online dating apps per a week will be used to determine the level of activity and how active a participant is in online dating.

Attitudes towards online dating prior to participation can be found in two ways, as seen in Figure 1. The first is a positive attitude which can be defined as viewing online dating as a legitimate avenue for dating. This can be further specified in that the participant uses the platform with the intent of searching for a relationship. The relationship itself can be of any kind that is related in a romantic or sexual connotation. The second is a negative attitude which can be defined as viewing online dating as an illegitimate avenue of dating. This implies that the

participant does not believe using an online dating platform will lead to any romantic or sexual relationship. Attitudes may also be determined by which platform is being used, and the reputation of that platform might affect the participant's attitude towards either that specific platform or online dating in general.

The next concept would be online dating participation. Attitudes might lead to active participation and this is what the research would take into account and focus on. Participation would consist of actual usage of the applications and be defined as aligning with the intention of the application and usage of the integrated social tools that are presented by the application, such as the matching functions and messaging. Success would be defined as the participant having matched with other individuals and communicating with them in some form (whether that be messaging, video chatting, going on actual dates, etc.).

The concept our research mainly measures is the final concept of a participant's attitude towards online dating after participating in the usage of dating applications. Positive (legitimate) and negative (illegitimate) views will still be defined the same way as attitudes prior to participation, and the attitudes will still be applied towards the same specific platforms used as well as the concept of online dating in general. In this instance, the research will measure whether attitudes towards online dating have changed or not after active participation and the variables of success and failure are taken into account.

Along with the acknowledgments of the variables, we derived two hypotheses for our research; A positive online dating participation experience would lead to more positive attitudes towards online dating applications, regardless of attitude prior to online dating participation (H1). We expect that with the attitude towards online dating being a dependent variable of the participation experience, a positive and successful online dating experience would lead to users

holding more serious and positive attitudes towards online dating applications. Moreover, a negative online dating participation experience would lead to more negative attitudes towards online dating applications, regardless of attitude prior to online dating participation (H2). Being an inverse of H1, H2 suggests that those who hold negative attitudes after online dating are likely to have had an unsuccessful and overall negative experience in their online dating participation experience. There is also the suggestion that the length of usage moderates the effect between attitude after and attitude before (H3). We intend to establish concrete relationships between the online dating participation experiences and the attitude towards online dating post-experience.

Given the similarity of our research to that of Ranzini & Lutz (2016), which also utilized questionnaires to analyze results that they obtained for research on online dating motives, we decided to implement Structural Equation Modeling (SEM) to answer these research questions with the results we obtain from the questionnaires. Ranzini & Lutz (2016) used this method due to its ability to "allow inclusion of latent constructs, easy testing of indirect effects, and specification of measurement errors". Through basic statistical inference and linear regression, we plan to investigate relationships between variables.

Method

In order to recruit data from participants, a survey questionnaire was formulated using Qualtrics, including measurements for the different variables and to determine present effects on the dependent variable. The survey itself was distributed through digital channels including Facebook, Instagram, Snapchat, and Discord. The survey was also distributed through primary connections and also reached secondary connections through that network.

Prior to measurement of the variables, demographic questions were included to determine the age, sexuality, length of usage, etc. These questions gave a basis for where the following

information could come from and how average answers might correlate with other variables of measurement and if those measurements would impact our original hypotheses for changes in attitudes.

The survey itself was centered upon participants' attitudes prior to participation (the independent variable) and attitudes after participation (the dependent variable). Each variable was measured using a Likert scale, asking participants about their attitudes on a scale of 5 points. Within these 5 points included a neutral stance between the two ends, allowing researchers to determine an average based on these results.

Some moderating variables included a successful/negative experience and length of usage. These were thought to affect the outcome of any changes in attitude and were measured using semantic and interval scales. The moderating variable, successful/negative experience, was measured using a semantic scale as this scale dealt directly with positive and negative outcomes, which was best for measuring questions about success and failure. This gave a better average later on to determine the general outcome of participation. The second moderating variable, length of usage, was measured using an interval scale to determine the general time of usage of participants to give an idea of how long average users spent on the applications, giving an idea on how time spent on the applications might indicate attitudes or be the source for any changes.

After collecting these results from a sample of under 70 participants, the data was gathered in Qualtrics and exported to Excel for an analysis of the results. Since the first question was if participants had ever used an online dating application, all who responded negatively were eliminated from the sample since they were not relevant to the change in attitude that was being measured. Then IP addresses were combed to determine if there were any clusters and those

were subsequently eliminated to decrease the chances of a single person answering multiple times.

Results

Out of 128 responses, our survey received 66 responses that answered "Yes" to the question "Have you ever participated in online dating," which would deem the participant fit for the study. Of the 66, 2 responses were lacking data in the "successful experience" variable questions, and were omitted from the analysis. Missing and insufficient data like the aforementioned responses were handled by deleting them and not using them for analysis, but for responses that were lacking only 1~2 answers for variables, a 0 was coded. Data for the four variables were then calculated for their respective descriptive statistics, and is as follows:

$$M_{\text{successful}} = 5.430, SD = 1.3997, 95\% CI = [4.9403, 5.9191]$$

$$M_{\text{Before}} = 5.047, SD = 1.5087, 95\% CI = [4.4731, 5.6102]$$

$$M_{\text{after}} = 5.063, SD = 1.5159, 95\% CI = [4.4891, 5.6371]$$

$$M_{\text{length}} = 1.156, SD = 0.8207, 95\% CI = [0.988, 1.325]$$

To understand the statistical association between these four variables, we analyzed Pearson's correlation coefficient (ρ). The overall data, with no distinction between sexes in the table, showed both weak and strong association between different variables, as shown in Table 1. The variable "successful experience" showed extremely weak correlation with the variables "attitude before," "attitude after" and "length of usage" with the coefficient of ρ being 0.05613, -0.0138, and 0.2100, respectively. However, the variable "attitude before" had a somewhat strong correlation with the variable "attitude after", with the coefficient of $\rho = 0.6353$. The other variables, in turn, had close-to-zero correlation with their ρ approaching 0.

To test the internal consistency and association between different variables, Cronbach's Alpha (α) was applied to analyze the data. The data showed internal consistency of $\alpha = 0.4784$, implying that there were existing variables that decreased the consistency, as shown in Table 2. Per the same table, when the moderating variable "successful experience" was excluded from the data, the internal consistency increased significantly, with $\alpha = 0.5867$. On the other hand, when the moderating variable "length of usage" was excluded, the consistency improved only slightly, with $\alpha = 0.4811$. This information further provides us with the knowledge that there isn't sufficient evidence from our data to prove that successful experience changes the attitude before, and the attitude after, the usage of online dating applications.

As shown in Table 3, the Pearson's correlation coefficient differs between sexes. The correlation coefficient of the variables "attitude before" and "attitude after" in males were lower than that of females, with their respective values $\rho_{\text{male}} = 0.5397$ and $\rho_{\text{female}} = 0.6734$. With this calculation, we are able to make an assumption that males had a more significant change in attitude after using online dating apps, regardless of successful experience or length of usage, than females do.

The analyses hereafter were conducted in R, as shown in Table 4. To test the hypothesis, the overall data was fitted using multiple linear regression. With the variable "attitude after" being the dependent variable and the variables "attitude before", "successful experience", and "length" being the independent variable, we found that "attitude before" was associated with the dependent variable ($\beta = 0.6444, p < 0.001$), which supports both H1 and H2. However, the estimate of the variables "successful experience" and "length of usage" were insignificant ($\beta_{\text{successful}} = -0.0480, p = 0.6647$; $\beta_{\text{length}} = -0.0481, p = 0.80043$), rejecting H3. The analysis

clarifies there is not enough evidence to show that successful experiences with online dating apps and the length of usage moderate the attitude change before and after using online dating apps.

In Table 5 and 6, an analysis was conducted for the different sexes. The variable "attitude before" is shown to have significant correlation with the variable "attitude after" ($\beta_{\text{male}} = 0.6918$, $p < 0.001$; $\beta_{\text{female}} = 0.6918$, $p < 0.001$) for both sexes. Likewise, the variables "successful experience" and "length of usage" again had little or no significance ($p_{\text{successful}} = 0.456$, $p_{\text{length}} = 0.820$), thus supporting the rejection of H3.

Discussion

As per the previous section, our group came to the conclusion of the following regarding our three hypotheses. H1, the hypothesis that a positive online dating participation experience would lead to more positive attitudes towards online dating applications, regardless of attitude prior to online dating participation, was supported by the data. H2, the hypothesis that a negative online dating participation experience would lead to more negative attitudes towards online dating applications, regardless of attitude prior to online dating participation, was supported by the data as well. However, H3, the hypothesis that the length of usage moderates the effect between attitude after and attitude before, was the one hypothesis that our data failed to support. H1 and H2 were supported by data that showed the association between the independent variable "attitude before" and the dependent variable "attitude after." H3 was rejected due to data showing little to no significant association between the moderating variable of "length of usage" and "attitude after."

What our group aimed to find was something different from past studies, which mostly discussed and analyzed the correlation behind motives of using online dating apps and meeting outcomes, being how one's attitude prior to online dating apps could potentially be an indicator

of their attitude after online dating app experiences. Our results indicate that there is correlation between prior and post attitude of online dating app usage, and interestingly enough found that successful experiences, along with length of usage as two moderating variables, were not significant in influencing the dependent variable of "attitude after" online dating app usage.

Implications for this topic on future research could potentially include many more aspects that involve the idea of the attitudes, not motives, influencing outcomes of online dating, and perhaps move closer to predicting behavior related to online dating for different attitudes. Given that our data consisted of younger participants aged 19 to 25 without socio-economic demographic information, future studies could also look into the association between socio-economic status, attitude towards online dating apps, and how the former two could possibly influence how relationships are built in a more technology driven society.

This study has several limitations. First, the sample size was not large enough, with less than 70 participants yielding valid information for our data analysis, which doesn't reach the generally agreed sample size of 100. Consequently, there might be margin for inaccurate analysis of the population based on the smaller sample size. Furthermore, our data consisted of an unequal demographic distribution regarding different sexes, with males only making 31% of the participants. This would decrease generalizability of the data due to it being extremely disproportionate to the general U.S. population. For bias, since our group collected data via a survey and asked participants to measure their attitude on pre-and-post online dating app experiences, recall bias is a potential bias to exist and while it is inevitable in this study, still poses a difficulty to generalize our results. Another bias is selection bias, since our survey was mostly sent to peers and social media, it is likely that the data we collected is largely based on

these groups (university students that use social media or are in Communication courses), and cannot represent a bigger population.

References, Tables, and Figures

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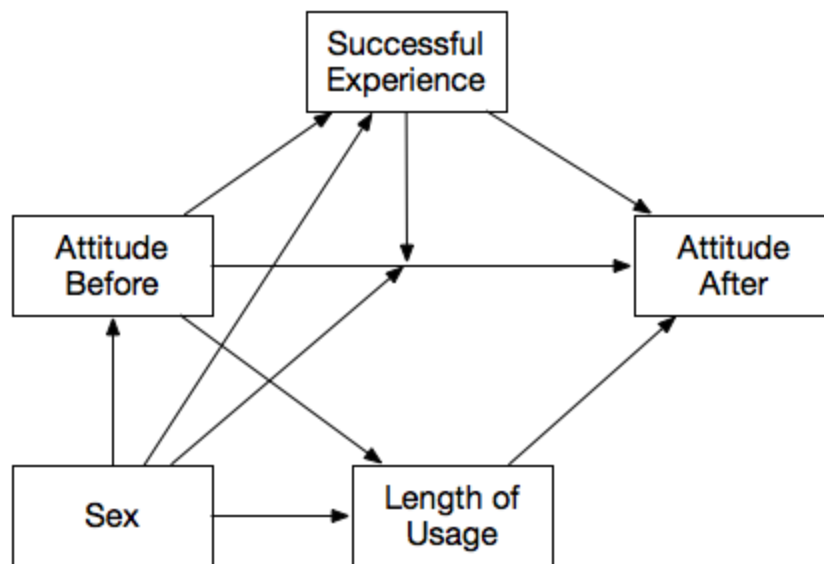
Figure 1*Causal Diagram*

Table 1*Overall Pearson's Correlation Coefficients*

	Successful Experience	Attitude Before	Attitude After	Length of Usage
Successful Experience	1			
Attitude Before	0.05613	1		
Attitude After	-0.01379	0.63532	1	
Length of Usage	0.21005	0.13585	0.05178	1

Note. Pearson's Correlation Coefficients (p) range from -1 to 1, with -1 implies strong negative relationship, and 1 implies strong positive relationship.

Table 2*Overall Cronbach's Alpha (α)*

	Cronbach's Alpha	Std. Alpha
All items	0.4784	0.4662
Successful excluded	0.5867	0.5314
Before excluded	0.1513	0.2129
After excluded	0.2656	0.3171
Length excluded	0.4811	0.4668

Note. Cronbach's Alpha (α) measures the internal consistencies of variables.

Table 3*Pearson's Correlation Coefficient by Different Sexes (ρ)*

Male	Successful Experience	Attitude Before	Attitude After	Length of Usage
Successful Experience	1			
Attitude Before	0.3148	1		
Attitude After	-0.0346	0.5397	1	
Length of Usage	0.4535	0.2007	-0.2097	1
Female	Successful Experience	Attitude Before	Attitude After	Length of Usage
Successful Experience	1			
Attitude Before	-0.1215	1		
Attitude After	0.0135	0.6734	1	
Length of Usage	0.1859	0.1330	0.1352	1

Note. Pearson's Correlation Coefficients (ρ) range from -1 to 1, with -1 implies strong negative relationship, and 1 implies strong positive relationship.

Table 4*Overall Multiple Linear Regression Coefficients (β) and Its Respective P-values*

Coefficients:				
	Estimate	Standard Error	t-value	p-value
Intercept	2.1305	0.7666	2.779	0.0073 (**)
Before	0.6444	0.1009	6.387	2.74e-08 (***)
Successful	-0.0480	0.1102	-0.436	0.6647
Length	-0.0481	0.1894	-0.254	0.8004

Note. The estimate of the variable indicates a regression coefficient (β). Respective p-value and its asterisks (*) indicate the significance of the variable. The smaller the p-value, the more significant the variable is.

Table 5*Male Multiple Linear Regression Coefficients (β) and Its Respective P-values*

Coefficients:				
	Estimate	Standard Error	t-value	p-value
Intercept	2.7628	1.1645	2.372	0.0293 (*)
Before	0.6150	0.1930	3.186	0.0054 (**)
Successful	-0.0799	0.1715	-0.466	0.6471
Length	-0.5195	0.3770	-1.378	0.1860

Note. The estimate of the variable indicates a regression coefficient (β). Respective p-value and its asterisks (*) indicate the significance of the variable. The smaller the p-value, the more significant the variable is.

Table 6*Female Multiple Linear Regression Coefficients (β) and Its Respective P-values*

Coefficients:				
	Estimate	Standard Error	t-value	p-value
Intercept	0.9400	1.1088	0.848	0.402
Before	0.6918	0.1217	5.686	1.41e-06(***)
Successful	0.1261	0.1673	0.754	0.456
Length	0.0531	0.2316	0.229	0.820

Note. The estimate of the variable indicates a regression coefficient (β). Respective p-value and its asterisks (*) indicate the significance of the variable. The smaller the p-value, the more significant the variable is.

Appendix

Team Member Contribution:

1. Prospectus Extended

- Henry Lin: Based on idea for individual prospectus, wrote the introduction, and provided concepts and variables
- Justin Chu: Provided ideas for methods and proofread, help formulate hypotheses
- Chan Woong Joo: Discovered related researches and assisted defining variables of interest. Wrote Methods section.
- Caydee Schweitzer: Revised

2. Questionnaire

- Henry Lin: Formulated some questions and came up with some demographics to measure.
- Chan Woong Joo: Formatted the questions. Added blocks for the questions' corresponding categories. Added skip logic function to better achieve the desired data. Clarified each question to avoid confusion for participants.
- Caydee Schweitzer: Created questionnaire and initial questions.

3. Recruitment and Data Clean

- Justin Chu, Chan Woong Joo, Henry Lin, Caydee Schweitzer: Recruited the participants
- Justin Chu, Chan Woong Joo: Deleted unnecessary questions/columns. Re-coded the semantic and likert scales into numeric, continuous, and interval values. Omitted the missing values,
- Henry Lin: Assisted to revise/delete unnecessary questions/columns.

4. Final Report

- Henry Lin: Wrote the abstract and provided the details of used methods for research.
- Chan Woong Joo: Performed data analysis using R. Created table/figure per APA guidelines. Wrote the result section of the final report.
- Justin Chu: Wrote the discussion section of the final report. Finalized Hypotheses and decided on what types of data to analyze and implications of data.
- Caydee Schweitzer: Wrote the Introduction. Formatted references using APA guidelines.