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Original Paper

Understanding Deception Tactics with the Utilization of Dating Applications

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Abstract

This study investigated the relationship between the utilization of deceptive tactics and dating applications. The Machiavellian IV Scale, Taxonomy of Deceptive Mating Acts, and Tactics Scale were analyzed and used to gather information from participants' experiences from online dating. An Independent T-test sample test evaluated the statistical differences between gender and the likely use of deception. One-Way ANOVA determined statistical differences between age groups and their relationship to the use of deception. Pearson correlation assessed the correlation between the numbers of dating applications owned by a single individual to their use of deception. The findings of this study encompass the guiding theories of Hyperpersonal Communication Theory and Evolutionary Theory. The null hypothesis stating that there is no relationship between gender and age to the likelihood use of deception, and the level of Machiavellianism was supported. The experimental hypothesis stating that there is a positive correlation in owning multiple dating applications to increased use of deceptive tactics was supported.

Keywords

online dating and deception, dating apps, online dating platforms

1. Introduction

Everyone has a chance to find someone through online dating platforms. However, a successful relationship depends on one's person's preferences and the techniques they utilize. Online platforms offer a greater probability of obtaining a significant other. The two most popular dating applications in the United States are Tinder, with 7.86 million users, and Bumble, with 5.03 million users. Other listed

applications are POF, Match.com, OkCupid, Grindr, Hinge, Zoosk, MeetMe, and Ashley Madison (Clement, 2020).

About 57% of online users share positive experiences. The majority of these users find potential partners through one's physical attractiveness, shared common interests, and the willingness to meet in person. In addition, technological advances and online platforms have enhanced people's inclusivity within diverse cultures. Approximately 3/10 of the online users share negative interactions, 37% of these users received messages from people they were not interested in, 35% of these users received unwanted explicit images and 28% had been called an offensive name. The negative perception of online dating stems from these negative interactions, the stigma of desperation, and deceptive techniques. Once an individual becomes more aware of the different deceptive tactics and learns the precautions against it, individuals can have a higher success rate in finding a significant partner (Vogels, 2020).

Toma and Hancock (2012) explored the Linguistic Deception in a dating profile. A person is able to maneuver one's self-representation by adjusting their close-ended factual statements (e.g., height, age, occupation, religion) and their open-ended factual statements (e.g., short biography). Tooke and Camire (1991) discussed three deceptions: physical, financial, and commitment. Physical deceptions are alterations of one's real appearance. Financial deceptions are statements or actions used to exaggerate the number of resources an individual owns: income, housing, cars, job, and more. Commitment deception is when one appears more committed than one actually is. Recognizing these deceptive tactics lead to an individual possessing a better sense of judgment when interacting with others. Therefore, individuals can have a higher success rate that stems from their understanding of these four types of deceptions. Over time, comparing dating tactics reveals similarities and differences between them. These represent the modern-day tactics of utilizing objects as compared to the past, where physicality was more prominently used.

A popular deceptive tactic of the modern online dating era is known as dog fishing. A male would pose in a picture with a dog that is not their own to lure a false sense of security, carefree, and trustworthiness to their potential partners (Booth, 2019). Dunlop (2018), further explores the different other deceptive tactics used in online dating. Some tactics shown were alteration of appearance through editing applications, use of makeup, body, and angling of the phone in pictures. Others were posting humorous quotes in their factual bio statements, posting group photos, and more. The main purpose of these tactics is to appear less unappealing or show fewer undesirable traits to their matches.

Various authors supported the idea that using deception tactics increases one's likability and initial impression of themselves leading to different scenarios. Alexopoulos, Timmermans, and McNallie (2020) determined the relationship of online application use to infidelity. The results show a positive correlation between self-perceived desirability and an intention to commit infidelity. Deception tactics can also be used in catfishing relationships to appear more trustworthy or attractive. Mosley, Lancaster, Parker, and Campbell (2020) explored the inter-relationship of attachment styles with gender and

catfish status in online dating. Predators have the tendency to use deceptions on their prey when initiating these types of relationships. These individuals create a similar persona in all of their multiple outlets of social media while withholding real information about their true identity. Toma, Hancock, and Ellison (2008) observed self-representation in online dating profiles. They discovered that the information provided did deviate from one of the participant's observable characteristics. Since these discrepancies dealt with more observable characteristics, it is considered intentional and can be operationalized as deception. The individual's purpose follows the belief that altering information will make them more desirable to their potential partners.

Barnacz, Amati, Fenton, Johnson, and Keenan (2009) examined the relationship between the ability to detect deception in females and their baseline knowledge about how men lie. The data results indicated that females were accurate in detecting female deceptions, but not male deceptions. This led to the belief that deception detection skills could be based on perceptual monitoring rather than cognitive monitoring. Thus, giving an individual more awareness and a better sense of judgment in their dating circumstances. Deception detective skills can lead to a better chance of a successful relationship online.

1.1 Evolutionary Theory & Hyperpersonal Communication Theory Model

Online dating is becoming a more popular approach to finding a potential partner. An individual's interest in online dating can be caused by many factors, but how an individual gets that partner is what differentiates the result of success in their relationships. These two theories explore more on this idea.

The Evolutionary Theory Model is how individuals compete with each other to increase their chances of reproduction and survival. The competition between people can be differentiated by the amount of quality and quantitative resources an individual possesses. Intrasexual selection deals with competing within the same sex, while intersexual selection deals with an individual's preferential choice on their partner. The guiding theory further addresses the different components of why deception tactics can be used in online dating and why being aware of these tactics are important in order to achieve better quality and success in a relationship (Buss, 1988).

According to Fullwood and Atthril-Smith (2019), if the individual has more of a positive representation of their ideal self, then they are able to create a favorable outcome. The Hyperpersonal Communication Theory Model further addresses the different components as to why it is easier to build connections and a better self-image online than offline. This explains why people use photos to show their physical attractiveness online and therefore are more confident in their ability to find a partner. Matched couples are able to idealize each other based on their self-representation in their profile and through shared messages. The more appealing personal characteristics of each individual tend to be overemphasized, which influences the judgment on each other's behavior and identity. These deceptions make the person appear more desirable and builds a fabricated relationship (Gentile, 2013).

Following the guiding principles of Hyperpersonal Communication Theory and Evolutionary theory, this study explores how dating deceptive tactics and self-perception affects relationships within dating applications.

2. Method

This study utilizes a Posttest-Only Design with Randomization. A convenience sampling method was utilized to gain participants. Participants were over the age of 18 and had at least one online dating application and an account with the Amazon Mechanical Turks. For the experiment, participants were required to use electronics such as a laptop, desktop computer, smartphone, or a tablet device such as an iPad to complete the anonymous surveys. The surveys were distributed through Amazon Mechanical Turk. Prior to the administration of the survey, participants were informed about the purpose of the study and were assured that participation was voluntary, anonymous, and confidential. Depending on their age, gender, and past experiences with or without deception in online dating, participants were analyzed and subjected to different groups. All groups were required to fill up the same surveys in order to obtain information about dating experiences with deception or no deception, interest in online dating, online dating application experiences, length of the relationships, relationship quality and satisfaction, a measurement in Machiavellianism personality traits and the levels of deception with their mating acts and tactics. The participation of this trial was voluntary, anonymous, and confidential. After survey completion, the participants viewed a debriefing statement and were compensated $0.50 for their participation.

The first questionnaire gathered the participants' demographic information. The demographic information included age, race, gender, religion, relationship status, educational level, online applications, and other characteristics. Three questions involving participant's past experiences with deception through online dating were asked. The information was used to subject the participants into two groups: with or without previous experiences with deception. For example, one question asked was, "In the past while using any of these dating applications, have you ever encountered catfishing and/or deception?" If the participant answered yes, participants were asked another question, "If you answered yes to the previous question, what kind of deception have you encountered?"

The Machiavellian IV Scale and Taxonomy of Deceptive Mating Acts and Tactics Scale were chosen as the instruments of quantitative assessment due to the high reliability and validity in assessing the relationship between online dating applications or sites and deceptive tactics.

Dussault, Hojjat and Boone (2013) used the Machiavellian IV Scale consisting of a 20-item Likert scale that measures a person's willingness to use manipulative tactics, measure level distrust of others, and lack of morals and concerns. The scale has been psychometrically tested and has shown high test-retest reliability ($r > .75$) and high internal consistency of alpha coefficients ($a = 0.70 - 0.80$). The questions were rated on a 5-point Likert scale of 1 (disagree) to 5 (agree). The scoring ranges from 20 (least Machiavellian) to 100 (most Machiavellian). A participant scoring 60 or more is considered as a high Machiavellian and below 60 is considered as low Machiavellian. A participant scoring 60 or above tends to manipulate others for their own personal gain and a participant scoring below 60 is likely to be more honest and show altruistic traits. An example statement used is "It is safest to assume that all

people have a vicious streak and it will come out when they are given a chance," which participants had to rate.

Dussault, Hojjat and Boone (2013) also used the Taxonomy of Deceptive Mating Acts and Tactics Scale that consists of a 72-self report item Likert Scale that measures the differences in deceptive tactics in order to gain attraction in intrasexual and intersexual relationships. The scale has also been psychometrically tested and has been reported to show high internal consistency (a > 0.93). The questions were rated on a 5-point Likert scale of 1 (never) to 5 (very frequently). The score ranges from 72 points to 360 points. The questions were grouped into four types of deceptions. The questions were altered to address the deceptive tactics used in online dating. An example question would be "Have you ever posted pictures with exotic animals (e.g., lions, tigers, crocodiles, etc.) to appear more masculine on a dating profile?"

These two surveys were analyzed using SPSS to show statistical significance. After the data from the participants was collected, all surveys were numbered into cases and entered into SPSS. The survey data was further analyzed using Independent T-test samples, ANOVAs, and Pearson correlation for statistical significance. One-way ANOVA was used to find the difference between the age group and the likelihood of deception. An Independent T-test was used to find the difference between gender and their use of deception, while Pearson correlation was used to look at the different variables and their relationship.

3. Result

The total sample size collected from Amazon Mechanical Turk was 297 participants. The majority of the participants were male and less than half were females. Participants experienced in deception or catfishing were also taken into consideration.

Table 1. Age of Participants

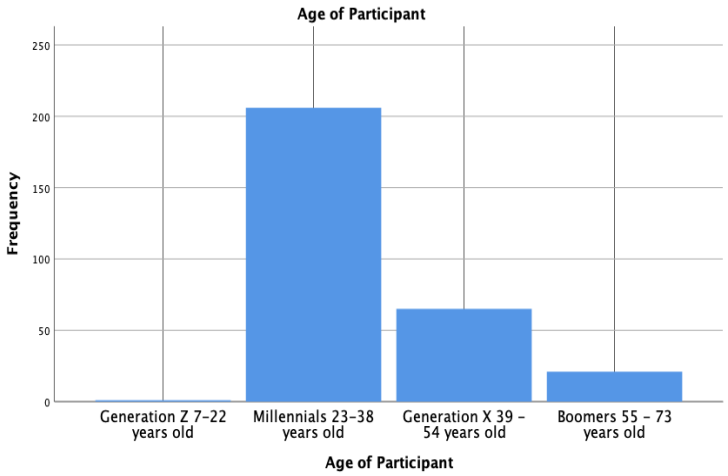
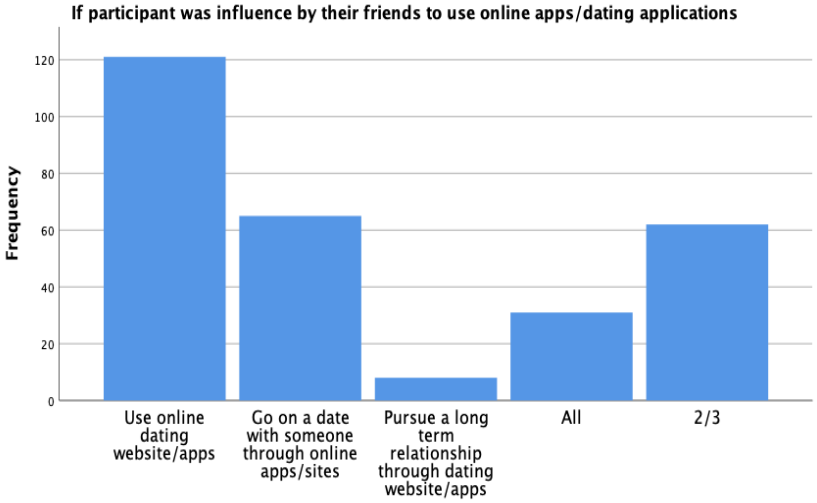


Table 2. Influence by Friends to Use Online Dating Apps/Dating Applications



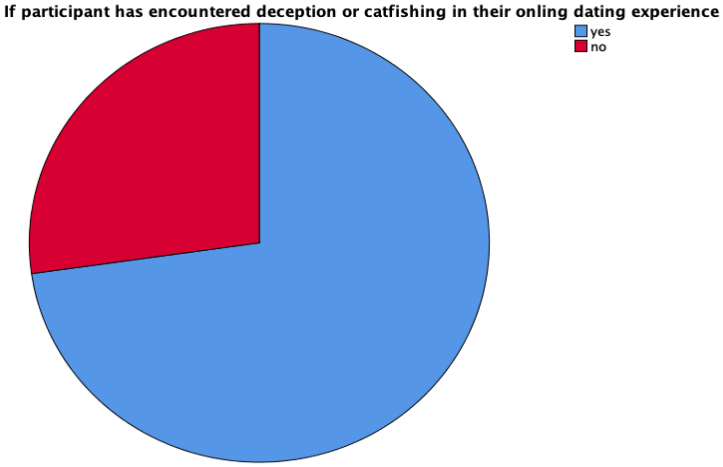


Figure 1. Encounter with Deception or Catfishing

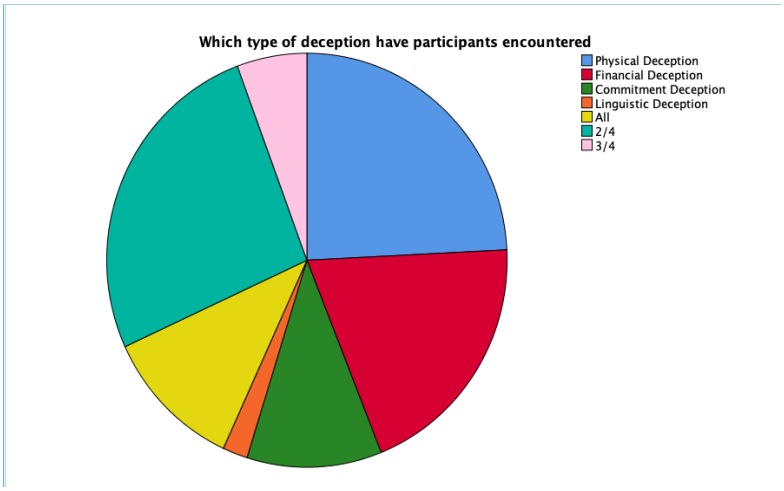


Figure 2. Types of Deception Participants Encountered

A relationship between two variables was first assessed. The relationship between our Machiavellian Personality Traits (as measured by Machiavellian IV scale) and their use of deception on dating applications (as measured by the Deception Mating Acts and Tactics Scale) was investigated using the Pearson product-moment correlation coefficient. There was a strong, positive correlation between the two variables, r = .783, n = 159, p = .000, with elevated Machiavellian personality traits is associated with higher levels of deception in the utilization of dating applications. The results above demonstrate the likelihood of manipulation and its relation to one's personality traits (See Table 3).

Table 3. Correlation of Machiavellian IV Scale and Taxonomy of Deceptive Mating Acts and Tactic Scale

Correlations

		Physical Deception Based Questions	Linguistic Deception Based Questions	Financial Deception Based Questions	Commitment Deception Based Questions
Physical Deception Based Questions	Pearson Correlation	1	.957**	.876**	.908**
	Sig. (2-tailed)		.000	.000	.000
	N	230	195	213	219
Linguistic Deception Based Questions	Pearson Correlation	.957**	1	.917**	.945**
	Sig. (2-tailed)	.000		.000	.000
	N	195	230	217	222
Financial Deception Based Questions	Pearson Correlation	.876**	.917**	1	.898**
	Sig. (2-tailed)	.000	.000		.000
	N	213	217	271	250
Commitment Deception Based Questions	Pearson Correlation	.908**	.945**	.898**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	219	222	250	270
All Deception Questions Based	Pearson Correlation	.984**	.990**	.921**	.956**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	177	177	177	177
All Mach IV Questions Based	Pearson Correlation	.783**	.737**	.707**	.734**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	205	204	236	238

The relationship between our participants' experiences with deception or catfishing and their use of deception on dating applications (as measured by the Deception Mating Acts and Tactics Scale) was investigated using the Pearson product-moment correlation coefficient. There was a negative correlation between the two variables, r = -.321 n = 290, p = .000, with participants' past experience with deception or catfishing associated with the use of deception. People who have experienced deception are less likely to use deception or manipulation techniques in online dating (see Table 4).

Table 4. Correlation of Experienced Deception/Catfishing and Deception Mating Tactics & Acts Scale

Correlations

		If participant has encountered deception or catfishing in their onling dating experience	All Deception Questions Based
If participant has encountered deception or catfishing in their onling dating experience	Pearson Correlation	1	-.321**
	Sig. (2-tailed)		.000
	N	290	175
All Deception Questions Based	Pearson Correlation	-.321**	1
	Sig. (2-tailed)	.000	
	N	175	177

**. Correlation is significant at the 0.01 level (2-tailed).

The data supported the null hypothesis that there is no difference between the overall likelihood uses of deception as a whole between genders. An independent-samples t-test was conducted to compare the deception level (as measured by Deception Mating Acts and Tactics Scale) for males and females (See Table 5).

Table 5. Independent t-test Sample of Gender with Deception Mating Tactics & Acts Scale

T-Test

Group Statistics

	Gender of Participant	N	Mean	Std. Deviation	Std. Error Mean
All Deception Questions Based	Male	102	257.9706	63.95287	6.33228
	Female	74	247.5000	60.63573	7.04876

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
All Deception Questions Based	Equal variances assumed	.127	.722	1.096	174	.275	10.47059	9.55639	-8.39078	29.33196
	Equal variances not assumed			1.105	162.076	.271	10.47059	9.47538	-8.24052	29.18170

There was no significant difference found in the scores of the overall deception between males and females (t (176) = 1.096, p = 0.275, two-tailed). When the overall deception scale was further broken down into four different components: Commitment, Financial, Physical, and Linguistic, a significant difference was found between the genders of the participants (See Appendix E). There was a significant difference found in the scores of Commitment Deception for males (M = 31.88, SD = 8.15; t (267) = 2.059, p = .040, two-tailed) and females (M = 29.69, SD =9.019; t (267) = 2.059, p = .040, two-tailed). The magnitude of the differences in the means (mean difference = 2.186, 95% Cl: - 0.96 to 4.276) was

minimal effect (eta squared = 0.01). There was a significant difference found in the scores of Linguistic Deception for males (M = 99.48, SD = 24.868; t (228) = 1.966, p = .053, two-tailed) and females (M = 92.77, SD =26.251; t (228) = 1.966, p = .053, two-tailed). The magnitude of the differences in the means (mean difference = 6.714, 95% Cl: - .0151 to 13.44) was a minimal effect (eta squared = 0.01). There is a higher mean average for commitment and linguistic deception for males than females. There was no significant difference found for both Financial and Physical Deceptions between females and males. (See Table 6).

Table 6. Independent t-test Sample of Gender with Taxonomy of Deceptive Mating Acts and Tactic Scale (Broken down to 4 components: Commitment, Financial, Linguistic, and Physical)

T-Test

Group Statistics

	Gender of Participant	N	Mean	Std. Deviation	Std. Error Mean
Commitment Deception Based Questions	Male	159	31.8805	8.15154	.64646
	Female	108	29.6944	9.01967	.86792
Financial Deception Based Questions	Male	159	17.5472	4.67379	.37066
	Female	109	16.5872	4.98370	.47735
Linguistic Deception Based Questions	Male	132	99.4848	24.86804	2.16449
	Female	96	92.7708	26.25121	2.67925
Physical Deception Based Questions	Male	136	99.5294	24.26060	2.08033
	Female	92	98.4022	19.85943	2.07049

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Commitment Deception Based Questions	Equal variances assumed	2.409	.122	2.059	265	.040	2.18606	1.06149	.09604	4.27608
	Equal variances not assumed			2.020	214.043	.045	2.18606	1.08222	.05289	4.31922
Financial Deception Based Questions	Equal variances assumed	.907	.342	1.608	266	.109	.96001	.59715	-.21572	2.13575
	Equal variances not assumed			1.588	222.264	.114	.96001	.60436	-.23099	2.15102
Linguistic Deception Based Questions	Equal variances assumed	.454	.501	1.966	226	.051	6.71402	3.41491	-.01513	13.44316
	Equal variances not assumed			1.949	198.235	.053	6.71402	3.44433	-.07821	13.50624
Physical Deception Based Questions	Equal variances assumed	2.748	.099	.370	226	.712	1.12724	3.04968	-4.88221	7.13669
	Equal variances not assumed			.384	217.831	.701	1.12724	2.93508	-4.65755	6.91203

The data does support the null hypothesis that there is no difference between the likelihood use of deception of the different age groups. A one-way between-groups analysis of variance was conducted to explore the three different age groups and their use of deception on dating applications (as measured by the Deception Mating Acts and Tactics Scale). Group 1 was under 28 years old; group 2 was between 29 to 35 years old and group 3 was between the ages of 36 and above. There was no significant difference found between the age groups (F (176) = 1.380, p = .093) and no effect size was found (See

Table 7). A one-way between-groups analysis of variance was conducted to explore the three different age groups and their level of Machiavellian Personality Traits (as measured by the Machiavellian IV Scale). Group 1 was under 28 years old; group 2 was between 29 to 35 years old and group 3 was between the ages of 36 and above. There was no significant difference found between the age groups (F (254) = 1.1316, p = .111) and no effect size was found (See Table 8).

Table 7. One-Way ANOVA Analysis between Age Groups and Machiavellian IV Scale

Oneway

ANOVA

All Mach IV Questions Based

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7097.924	41	173.120	1.316	.111
Within Groups	28029.040	213	131.592		
Total	35126.965	254			

Table 8. One-Way ANOVA Analysis between Age Groups and Taxonomy of Deceptive Mating Acts and Tactic Scale

Oneway

ANOVA

All Deception Questions Based

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	190093.294	38	5002.455	1.380	.093
Within Groups	496686.700	137	3625.450		
Total	686779.994	175			

Other relationships between different variables in the data were analyzed. The results of these relationships support the hypothesis that a positive correlation in owning multiple dating applications with the increased use of deceptive tactics. The relationship between our participants' amount of dating applications and their use of deception on dating applications (as measured by the Deception Mating Acts and Tactics Scale) was investigated using the Pearson product-moment correlation coefficient. There was a weak, positive correlation between the two variables but a strong significance, r = .200 n = 290, p = .008, with participants' amount of dating applications associated with the use of deception (see Table 9 and Table 10).

Table 9. Correlation between Age and Deception Mating Tactics & Acts Scale

Correlations

		Age of Participant	All Deception Questions Based
Age of Participant	Pearson Correlation	1	.038
	Sig. (2-tailed)		.613
	N	294	176
All Deception Questions Based	Pearson Correlation	.038	1
	Sig. (2-tailed)	.613	
	N	176	177

Table 10. Correlation between Gender and Deception Mating Tactics & Acts Scale

Correlations

		Gender of Participant	All Deception Questions Based
Gender of Participant	Pearson Correlation	1	-.083
	Sig. (2-tailed)		.275
	N	289	176
All Deception Questions Based	Pearson Correlation	-.083	1
	Sig. (2-tailed)	.275	
	N	176	177

The relationship between participant's daily use dating applications and their use of deception on dating applications (as measured by Deception Mating Acts and Tactics Scale) was investigated using the Pearson product-moment correlation coefficient. There was a strong, positive correlation between the two variables, (Tinder: r = .633, n = 172, p = .000; Coffee Meet Bagels: r = .718, n = 173, p = .000; Hinge: r = 641, n=173, p = .000; Bumble: r = .696, n = 174, p = .000; and Other Applications participants' listed: r = .649, n = 172, p = .000), use of dating applications associated with higher levels of deception in utilization in dating applications. Based on this data, the more time spent on dating applications, correlates to an increased utilization of deceptive tactics in the application (See Table 11).

Table 11. Correlation of Daily Use of Dating Applications and Machiavellian IV Scale

Correlations

		Participant's rate their daily use of Tinder Application	Participant's rate their daily use of Coffee Meet Bagels Application	Participant's rate their daily use of Hinge Application	Participant's rate their daily use of Bumble Application
Participant's rate their daily use of Tinder Application	Pearson Correlation	1	.500**	.459**	.459**
	Sig. (2-tailed)		.000	.000	.000
	N	289	282	283	284
Participant's rate their daily use of Coffee Meet Bagels Application	Pearson Correlation	.500**	1	.589**	.680**
	Sig. (2-tailed)	.000		.000	.000
	N	282	286	284	284
Participant's rate their daily use of Hinge Application	Pearson Correlation	.459**	.589**	1	.607**
	Sig. (2-tailed)	.000	.000		.000
	N	283	284	287	285
Participant's rate their daily use of Bumble Application	Pearson Correlation	.459**	.680**	.607**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	284	284	285	288
Participant's rate their daily use of Others Application	Pearson Correlation	.315**	.560**	.558**	.548**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	279	280	282	282
All Mach IV Questions Based	Pearson Correlation	.517**	.589**	.546**	.538**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	252	247	249	250

The relationship between a participant's daily use dating applications and participants' level of Machiavellian Personality Traits (as measured by the Machiavellian IV Scale) was investigated using the Pearson product-moment correlation coefficient. The significance of the correlation between all applications is equal, or all applications have moderate strong relationships. There was a strong, positive correlation between the two variables, (Tinder: r = .517, n = 252, p = .000; Coffee Meet Bagels: r = .589, n = 247, p = .000; Hinge: r = .546, n=249, p = .000; Bumble: r = .538, n = 250, p = .000; and Other Applications participants' listed: r = .526, n = 245, p = .000), use of dating applications associated with elevated levels of Machiavellian Personality Traits. Therefore, the more time spent on dating applications, there is greater expectation of scoring higher in their level of Machiavellianism. (See Table 12).

Table 12. Correlation of Daily Use of Dating Applications and Taxonomy of Deceptive Mating Acts and Tactic Scale

Correlations

		Participant's rate their daily use of Tinder Application	Participant's rate their daily use of Coffee Meet Bagels Application	Participant's rate their daily use of Hinge Application	Participant's rate their daily use of Bumble Application
Participant's rate their daily use of Tinder Application	Pearson Correlation	1	.500**	.459**	.459**
	Sig. (2-tailed)		.000	.000	.000
	N	289	282	283	284
Participant's rate their daily use of Coffee Meet Bagels Application	Pearson Correlation	.500**	1	.589**	.680**
	Sig. (2-tailed)	.000		.000	.000
	N	282	286	284	284
Participant's rate their daily use of Hinge Application	Pearson Correlation	.459**	.589**	1	.607**
	Sig. (2-tailed)	.000	.000		.000
	N	283	284	287	285
Participant's rate their daily use of Bumble Application	Pearson Correlation	.459**	.680**	.607**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	284	284	285	288
Participant's rate their daily use of Others Application	Pearson Correlation	.315**	.560**	.558**	.548**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	279	280	282	282
All Deception Questions Based	Pearson Correlation	.633**	.718**	.641**	.696**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	172	173	173	174

Finally, the relationship between the different dating applications and participant's use of deception on dating applications (as measured by the Deception Mating Acts and Tactics Scale) was investigated using Pearson product-moment correlation coefficient. There was a strong, positive correlation between the two variables, the use of all dating applications associated with elevated levels of all the different types of deception being used in all of those dating applications (See Table 13).

Table 13. Correlation of Daily Use of Dating Applications, and Taxonomy of Deceptive Mating Acts and Tactic Scale

Correlations

		Participant's rate their daily use of Tinder Application	Participant's rate their daily use of Coffee Meet Bagels Application	Participant's rate their daily use of Hinge Application	Participant's rate their daily use of Bumble Application
Participant's rate their daily use of Tinder Application	Pearson Correlation	1	.500**	.459**	.459**
	Sig. (2-tailed)		.000	.000	.000
	N	289	282	283	284
Participant's rate their daily use of Coffee Meet Bagels Application	Pearson Correlation	.500**	1	.589**	.680**
	Sig. (2-tailed)	.000		.000	.000
	N	282	286	284	284
Participant's rate their daily use of Hinge Application	Pearson Correlation	.459**	.589**	1	.607**
	Sig. (2-tailed)	.000	.000		.000
	N	283	284	287	285
Participant's rate their daily use of Bumble Application	Pearson Correlation	.459**	.680**	.607**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	284	284	285	288
Participant's rate their daily use of Others Application	Pearson Correlation	.315**	.560**	.558**	.548**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	279	280	282	282
Physical Deception Based Questions	Pearson Correlation	.512**	.666**	.632**	.671**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	225	223	223	225
Linguistic Deception Based Questions	Pearson Correlation	.576**	.705**	.639**	.683**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	225	223	224	225
Financial Deception Based Questions	Pearson Correlation	.520**	.657**	.630**	.598**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	266	264	266	266
Commitment Deception Based Questions	Pearson Correlation	.514**	.666**	.627**	.642**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	265	263	264	263

In comparison to the significant level of strength of relationship between the dating applications to the use of deception, Coffee Meet Bagels Application shows the strongest relationship between three out of four types of deceptions: (Commitment Deception: r = .666, n = 263, p = .000; Financial Deception: r

= .657, n = 264, p = .000; Linguistic Deception: r = .705, n = 223, p = .000). Bumble shows the strongest relationship for Physical Deception across all applications, (r = .671, n = 225, p = .000). Tinder shows the weakest relationship across the four types of deceptions: (Commitment Deception: r = .514, n = 265, p = .000; Financial Deception: r = .520, n = 266, p = .000; Linguistic Deception: r = .576, n = 225, p = .000, and Physical Deception: r = .512, n = 225, p = .000). Users of all of these dating applications utilize deceptive tactics in their profile and online dating experiences.

4. Discussion

This study was conducted to further understand how dating deceptive tactics and self-perception affect the building of relationships within dating applications. The research results support the null hypothesis that there is no relationship between gender and age to the likelihood use of deception and the level of Machiavellian Personality Traits. The findings of the research support the experimental hypothesis that there is a positive correlation with owning multiple dating applications to increased use of deceptive tactics. The results of this study ties with the guiding theories of Hyperpersonal Communication Theory and Evolutionary Theory.

The first result to look at is the negative correlation between the participants' past experiences with deception or catfishing and the likelihood of deception. Buss's (1988) Evolutionary Psychology explores the idea of negativity bias. People are wired to think negatively because being aware of any potential threats can help with a higher success rate on survival and reproduction. The potential threats in dating are mostly psychosocial threats such as manipulation, lying, and cheating. Individuals recognizing the red flags and avoiding the past traumas from previous relationships gives an increased chance of success in the future. A tighter dating competition pool could lessen the chances of finding the right partner. Increasing the number of applications or the use of deception techniques does increase the probability of success.

The statistically significant difference found in both the Commitment and Linguistic deception between the two genders can be explained through both theories. Gentile's (2013) Hyperpersonal Communication Theory Model is about developing a positive self-representation online. A first impression is made based on what the user has put in their profile. Writing fake self-referential quotes on the dating profile and lying about factual statements such as height is one of the few ways a person is able to make themselves appear more attractive and likable than they actually are in person. These examples are useful to men as it allows females to evaluate and make the decision to swipe. The more information put in the profile, the likely they are being swiped by their matches.

In conclusion, these results further support the idea that deceptive tactics have a prominent role in the modern dating era. As individuals, becoming more aware of these deceptive tactics will further give a person a better sense of judgment in their dating experiences and gain a more successful relationship in the future.

4.1 Limitations and Future Research

All survey data collected was self-reported and errors of recall may have reduced the overall accuracy of the data collected. It would have been helpful for more participants to provide a diverse age group, education, income which would provide further data to study statistical significance or correlations within different variables. Furthermore, more applications for assessing one's daily use are required. Future surveys may be administered in the future so that data results can be compared.

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