Original Paper

Development and Validation of the Mobile Dating App Gratification Scale: Effects of Sought Gratifications on User Behavior and Outcomes

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Abstract

Mobile dating apps were created to meet the needs of Millennials, who tend to be more interested in casual relationships than serious dating. Despite their popularity, research has found that dating apps are not being used for their intended purpose. Two studies were conducted to develop and validate a scale for mobile dating app gratifications and to determine how individuals' behavior varies based on their sought gratifications. Results indicate that there are four primary mobile dating app gratifications (Validation, Entertainment, Relationships, and Hookups) and that they vary between genders. Individuals who seek different gratifications also engage in different behaviors while using the app and achieve different relational outcomes. The study highlights implications for future research and additional use of the Mobile Dating App Gratification Scale.

Keywords

uses and gratifications, mobile dating apps, online dating, scale development

Study One

1. Introduction

Since the creation of the first dating website in 1994, the stigma surrounding online dating has decreased drastically (Kauflin, 2011). Now Match.com claims 21,575,000 members and other online dating sites have cropped up to follow suit, including OKCupid (which is responsible for 40,000 first dates every day) and eHarmony (which is responsible for 600,000 marriages since its creation) (Dutcher, 2014; eHarmony.com, 2014; Rudder, 2014). Although online dating is continuing to increase in popularity among the older generation, some stigma still exists among emerging adults (age 18-24) who are looking for more casual and convenient relationships (Baxter & Cashmore, 2013; Bleyer, 2014; Dredge, 2014; Stampler, 2014).

Proximity-based mobile dating applications were created to satisfy the dating needs of these always-on-the-go Millennials. The most popular of these dating apps is "Tinder", which was created in August 2012 by Sean Rad and Justin Mateen (Dredge, 2014). The app features GPS capabilities which allow users to "match" with nearby individuals and includes a basic profile of 500 characters and up to six pictures (Crook, 2015). Tinder's interface is modeled after a deck of cards and allows users to "swipe" on other individuals' profiles (Crook, 2015). A "right swipe" indicates interest while a "left swipe" indicates disinterest. When two users swipe right on each other they are notified that they have a "match" and can message each other on the app. After interacting on the app users may choose to move to a different communication medium or even meet face to face.

There is evidence suggesting that Tinder may serve a variety of uses for adopters (Covarrubias, 2014; Dredge, 2014; Finkel, 2015). Tinder's intended purpose, according to the developers, is to expand social networks but many young people claim that is it a "hookup app" that facilitates casual sexual encounters (Baxter & Cashmore, 2013; Covarrubias, 2014; Dey, 2015; Dredge, 2014; Finkel, 2015). Although those are the two most widely accepted purposes for using the app, very few individuals actually use it in those ways (Covarrubias, 2014; Dey, 2015; Dredge, 2014). In fact, although Tinder sees 850 million swipes and 15 million matches daily, most of those matches never meet face-to-face and, if they do, it is a one-time thing (Lee, 2014; Rea, 2015). Although the 10 million individuals who use Tinder daily log in an average of 11 times and spend approximately 1.25 hours on the app, the majority do not meet face to face (Lee, 2015; Rea, 2015). In fact, many individuals who originally downloaded Tinder for its intended purpose now use it only for entertainment (Rea, 2015). Timmermans and De Caluwé's (2017) study of Tinder use in Belgium found that there are 13 motivations for using the app, many of which deviate from the uses mentioned by Tinder's founders. Although Timmermans and De Caluwé's (2017) scale may be helpful for individuals seeking extremely nuanced views of Tinder motives, its lack of parsimony may negatively affect its ease of adoption in future studies. This study, therefore, aims to develop a scale with a more practical number of items that

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measures more fundamental dating application motives.

Many technologies find unintended purposes that become driving forces for their adoption (Boyd, 2008; Tosun, 2012). To better understand media use it is important to know not just how many people are using a certain medium, but also *how* and *why* they are using it. Therefore, this study examines how and why individuals are using mobile dating apps, regardless of their intended purpose.

1.1 Uses and Gratifications Theory

One approach for examining why people adopt a communication medium is the Uses and Gratifications Theory. This audience-centered approach claims that individuals have inherent needs that are satisfied with media and that certain media satisfy specific needs (Miller, 2015; Katz, Blumler, & Gurevitch, 1974a; Katz, Blumler, & Gurevitch, 1974b). The Uses and Gratifications Theory aims to identify the factors that create needs among individuals and explains how those needs affect individuals' behavior. These behaviors then help to establish expectations about media exposure and engagement, which result in satisfaction of the need or, sometimes, other unintended consequences (Haridakis, 2002; Katz et al., 1974a; Palmgreen, Wenner, & Rosengren, 1985; Rubin, 2009; Sundar & Limperos, 2013). Based on prior literature, this study included two individual difference variables within the Uses and Gratifications framework to determine how these factors may impact Tinder users' uses and gratifications. These individual difference variables were gender and self-perceived physical attractiveness.

1.1.1 Gender

Historically, dating behaviors and norms have differed for males and females (Bailey, 1988; Freitas, 2013). One of the most significant differences is related to sexual behavior. Previous research suggests that a double standard existed—and may still exist—regarding what is considered "acceptable" behavior for men and women (Laumann, Gagnon, Michael, & Michaels, 1994; Martin & Hummer, 1989). Whereas men who engage in many casual sexual encounters are considered "studs", women have been expected to limit their number of partners to avoid earning a bad reputation (Bogle, 2008; Harding & Jencks, 2003; Reiss, 1997). Gender differences in behavior on dating websites have also been identified. Although women make up the majority of participants on the most popular dating sites (68.6% on eHarmony and 55% on Match.com), men make 80% of the initial contacts (Hartman, 2012; DatingSiteReviews.com, 2015). Given differences identified in sexual behavior and related to behaviors on dating websites, we expect that gender may influence the uses and gratifications sought on Tinder.

1.1.2 Physical Attractiveness

The second variable thought to impact Tinder uses and gratifications is self-perceived physical attractiveness. Past dating behaviors, both on and offline, have varied based on an individual's physical attractiveness (Ahuvia & Adelman, 1992; Jagger, 2001; Toma & Hancock, 2010). Past research

indicates that men place more importance on their partner's physical attractiveness than do women (Langlois et al., 2000). Women are aware of the importance potential suitors place on their attractiveness and therefore have learned to draw attention to their physical attributes while searching for a mate. For example, more attractive women include more photos in their online dating profiles than their less attractive counterparts (Toma & Hancock, 2010). The researchers therefore believe that a Tinder user's perception of their own physical attractiveness will impact their behavior on the app.

Based on this review, the following research questions were developed to guide our data collection and analyses:

RQ1: What are the underlying gratifications of Tinder use?

RQ2a: How are these underlying gratifications impacted by gender?

RQ2b: How are these underlying gratifications impacted by self-perceived physical attractiveness?

Uses and Gratifications Theory also claims that an individual's behavior on (uses of) a medium will vary based on their sought gratifications (Hampton, Goulet, Marlow, & Rainie, 2012; Tosun, 2012). Therefore, this research examines how these variables affect individuals' behavior on Tinder:

RQ3: What factors (gender, physical attractiveness, and gratifications) are associated with Tinder behaviors?

While Tinder's founders claim that the app was designed to broaden users' social networks and many people argue that it is a "hookup app", it appears that individuals rarely succeed in using it for either purpose (Lee, 2014). Therefore, the researchers are interested in what behaviors lead to "success" on the app, in the form of face to face meetings and hookups.

RQ4: What factors, including Tinder behaviors, are associated with relational outcomes (face to face meetings and hookups)?

2. Method

2.1 Participants and Procedures

The elicitation of key beliefs is an important step in the development of a scale. Therefore, as the initial step in this study, three focus groups were conducted to explore individuals' motivations for using Tinder. All questions were open-ended and followed a semi-structured style. Questions focused specifically on why participants originally downloaded Tinder and how they currently use it. Each focus group was audio recorded and thematically analyzed. The data provided the basis for all uses and gratifications-related items in the survey.

The final survey consisted of 100 items examining individuals' motivations for downloading and utilizing Tinder and questions regarding specific behaviors on the app. After several questions related to basic demographic information, uses and gratifications items were included. These items were measured using five-point Likert-type scales with strongly disagree and strongly agree as anchors.

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Behavior items included both behaviors that Tinder users engage in on the app itself and behaviors they may engage in as a result of the app (see Table 2). The survey concluded with a single-item measure of self-perceived physical attractiveness.

All study participants were recruited via a research participation system that serves a variety of courses from many schools across a large Mid-Western public university. To be eligible to participate, individuals had to be 18 or older, a college student, and have had a Tinder profile at some point. A total of 425 respondents (45.4% male, 54.6% female) completed the survey. Upon completion of the survey, participants were awarded course credit.

2.2 Measures

The item measuring self-perceived physical attractiveness was adapted from a study examining individuals' evaluations of self and partner physical attractiveness (Swami, Furnham, Georgiades, & Pang, 2007). The original survey listed 22 items, including 17 individual body parts and five categories of overall attractiveness, which participants assessed on a scale of 55 (very unattractive) to 145 (very attractive). Due to the nature of photos generally posted on Tinder profiles, in the present study, the researcher chose to include only the item that related to overall physical attractiveness (M=109.2; SD=16.34).

3. Result

3.1 Gratifications

A principal component factor analysis with varimax rotation was used to investigate underlying components to create a set of reliable measures of sub-dimensions related to Tinder gratifications. The initial solution included 19 items with eigenvalues greater than one that accounted for 60.42% of variance. After removing items with cross-loadings greater than .4 and primary loadings less than .6, a four-factor solution was identified that explained 71.6% of variance. Results indicate that there are four primary Tinder gratifications: validation, relationships (platonic and romantic), hookups (casual sexual encounters), and entertainment (See Table 1). The first three gratifications had acceptable reliability. The entertainment loading items fell below normally accepted levels, possibly because that component contained only two items, but this variable was retained for subsequent analyses due to the potential meaningfulness of the construct and the exploratory nature of the project.

3.2 Impact of Gender and Attractiveness on Gratifications

RQ2a and RQ2b asked what effects gender and physical attractiveness have on a Tinder user's motivations for using the app. Hierarchical regressions were conducted for each of the four gratifications with gender controlled in block one and self-perceived physical attractiveness controlled in block two (See Table 2). Block 1 was significant in all four analyses, indicating that gender has a significant impact on individuals' Tinder gratifications. Specifically, female users tend to use the app

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for validation and entertainment purposes while males use Tinder for relationships and hookups. Self-perceived physical attractiveness did not have any statistically significant effects, so Block 2 was insignificant in all analyses.

3.3 Impacts on Specific Behaviors

To answer RQ3, hierarchical regressions were conducted for four on-Tinder behaviors (See Table 2). Gender was controlled in Block 1, self-perceived attractiveness was controlled in Block 2, and Block 3 controlled for the four gratifications (validation, relationships, hookups, entertainment). The behaviors that were analyzed were "Frequency of Use" (how often individuals use Tinder), "Messaging Matches First" (individuals' tendency to initiate contact with matches), "Number of Photos" (how many photos individuals include in their Tinder profile, and "Biography Inclusion" (whether individuals include a biography in their profile).

Table 1. Gratification Scale Items for Study 1 and 2

Study				One				Two		
Items	Comp. 1	Comp. 2	Comp. 3	Comp. 4	M	SD	Alpha	M	SD	Alpha
Validation					3.05	.79	.83	2.93	.79	.86
DA make me feel good about myself.	.82							2.94	.98	
DA make me feel attractive.	.82							3.06	.96	
Using DA boosts my ego.	.79							2.97	1.00	
DA make me feel validated.	.75							2.76	.94	
Relationships					2.84	.82	.75	3.03	.85	.76
DA are a great way to meet potential significant others.		.83						2.85	1.05	
DA are a great way to meet new people.		.79						3.54	.99	
I would start a serious relationship with someone I met on a DA.		.75						2.68	1.07	
Hookups					2.42	1.08	.82	2.43	1.06	.90
I downloaded a DA because I wanted to find casual sexual partners.			.92					2.30	1.15	
I would have a			.88					2.57	1.28	

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casual sexual relationship with someone I met on a DA.						
I use DA to look for casual sexual partners. +				2.21	1.17	
DA are a great place for me to find hookup partners. +				2.65	1.23	
Entertainment		3.80	.70	.59	3.13	1.02	.89
I use DA when I'm bored.	.83				3.40	1.23	
DA are a good form of entertainment. X	.80				X	X	
DA keep me occupied during lulls in conversation or activity. +					2.86	1.11	
I use DA when I don't have anything else to do. +					3.15	1.17	
I use DA when there's nothing else going on. +					3.09	1.17	

+ represents an item that was added in Study 2

X represents an item that was removed from the model to improve fit in Study 2

*DA= dating app; in Study 1, items included "Tinder" rather than "dating app".

Of the four on-Tinder behaviors analyzed, only **Frequency of Use** had no significant predictors. This indicates that men and women, varying in attractiveness, do not differ in how often they use Tinder regardless of their motivations for using the app. On the other hand, Blocks 1 and 3 were highly significant for **Messaging Matches First**, indicating that men and individuals seeking relationships and hookups are more likely to initiate contact with Tinder matches. Self-perceived physical attractiveness was not a significant predictor for messaging matches first. Blocks 2 and 3 were significant for **Number of Photos**, which demonstrates that Tinder users with higher self-perceived physical attractiveness and those seeking validation and entertainment tend to include more photos in their profile. Finally, only Block 3 had significant effects for **Biography Inclusion.** Validation and entertainment were both significant predictors for this variable, indicating that individuals seeking validation and entertainment are more likely to include a biography in their profile.

3.4 Impacts on Relational Outcomes

To answer RQ4, hierarchical regressions were conducted for two Tinder-related outcomes (See Table 2). Gender was controlled in Block 1, self-perceived physical attractiveness was controlled in Block 2, the four gratifications were controlled in Block 3, and the four on-Tinder behaviors were controlled in Block 4 (Frequency of Use, Messaging Matches First, Number of Photos, and Biography Inclusion). The first Tinder-related outcome examined was participants' engagement in **Face-to-Face Meetings** with Tinder matches. This dichotomous variable measured whether individuals had met face-to-face with users that they matched with on Tinder. Only Block 3 was a significant predictor, indicating that individuals using Tinder to find relationships are more likely to engage in face-to-face meetings than users seeking other gratifications. The other relational outcome was **Hookups**, which examined whether a Tinder user had had a casual sexual encounter with an individual they met on the app. Again, only Block 3 was a significant predictor and indicated that individuals seeking relationships or hookups are more likely to hook up with Tinder matches.

4. Discussion

4.1 Gratification Scale

A significant contribution of Study One was the development of a preliminary scale for the gratifications of Tinder use. Past research (Timmermans & De Caluwé, 2017) resulted in a scale that lacked parsimony, but this scale includes only the fundamental Tinder gratifications: Validation, Relationships, Hookups, and Entertainment. Additionally, these gratifications help to explain Tinder behavior above and beyond explanations based on gender and self-perceived physical attractiveness. All gratification factors were significant predictors of at least one Tinder behavior, and they were typically the strongest predictors in the full models, although the entertainment factor evidenced low internal consistency.

The only Tinder behavior specifically predicted by gender was the tendency to message matches first, indicating that men are typically the *pursuers* on Tinder. This finding reflects dating trends that began back in the early 1920's with the "Dating Era" where men were expected to initiate romantic relationships (Bogle, 2008). The fact that gender was not a significant predictor of the number of hookups in which a user has engaged may indicate that women's engagement in casual sexual encounters is becoming less stigmatized. On-Tinder behaviors did not significantly predict any relational outcomes, which indicates that individuals' motivations for using Tinder play a more important role than on-app behaviors for achieving relational goals.

4.2 Study limitations

One limitation of this study was that the entertainment factor was measured with only two items, resulting in low internal consistency. Different or additional items are needed to improve the reliability of that factor. This study also examined only the uses and gratifications of one dating app. Additional research is needed to validate the gratification scale and determine whether it is generalizable to other mobile dating apps.

Table 2. Hierarchical Regressions for Dating App Gratifications and Behaviors

	Valid.	Relation.	Hookups	Entertain.	Freq. of Use	Message First	N. of Photos	Bio.	Total Meetings	Total Hookups
Block 1 (R² Change)	.03**	.02*	.28***	.03***	.00	.32***	.01	.00	.00	.00
Gender	.18**	-.13*	-.52***	.18***	.03	-.57***	.09	-.06	.02	.00
Block 2 (R² Change)	.01	.00	.00	.00	.00	.00	.03**	.00	.00	.01
Phys. Attract.	.09	-.06	.02	.03	-.01	-.01	.18**	.02	.00	.08
Block 3 (R² Change)					.01	.07***	.12***	.07***	.10***	.11***
Validation					.00	-.03	.20**	.18**	-.04	-.10
Relationships					.09	.18***	.10	.00	.27***	.19**
Hookups					-.05	.18**	.08	.03	.13	.29**
Entertainment					.02	-.02	.15**	.13*	-.05	.02
Block 4 (R² Change)									.02	.02
Frequency of Use									.09	.10
Message First									.06	-.02
Number of Photos									.10	.10
Include Bio									.01	.01
Total Adj. R²	**.04****	**.02***	**.27****	**.03****	**-.02**	**.38****	**.14****	**.05****	**.08****	**.09**

male=1, female=2; *p<.05, **p<.01, ***p<.001.

Study Two

1. Introduction

A second study was designed to address the limitations from Study One, as well as to strengthen and validate the gratification scale and expand it to include all mobile dating applications.

2. Method

2.1 Measures

Because one limitation of Study One was the low reliability evidenced by the Entertainment factor, additional gratification items were included in Study Two's survey with the goal of strengthening the Mobile Dating App Gratification Scale. These new items were also measured using five-point Likert-type scales with strongly disagree and strongly agree as anchors.

The survey was uploaded to a research participation system serving a variety of courses from many schools across a large, public Mid-Western university. To be eligible to participate, individuals had to be 18 or older, a college student, and have had a profile on a dating app at some point. Upon completion of the survey, participants were awarded course credit. A total of 985 participants, ages 18-24 (61.3% female) completed the survey.

3. Result

To validate Study One's scale, responses from Study Two were randomly divided and an exploratory factor analysis was conducted on one half. The EFA resulted in 17 items, divided into the same factors found in Study One (Validation, Relationships, Hookups, Entertainment), which explained 71.49% of variance. A confirmatory factor analysis was then conducted on the second half of the data to validate results. During the CFA two additional gratification items were removed to improve the fit of the model, resulting in a 15 item and four-factor solution. Available fit indices demonstrated well to acceptable fit (RMSEA 90% Confidence Interval=.06; CFI=.96; TLI=.95; SRMR=.06). See Table 1 for all scale items and Figure 1 for CFA results.

4. Discussion

The inclusion of additional items in Study Two enhanced the Mobile Dating App Gratification Scale and improved reliability for the Entertainment factor. Another important contribution is that Study Two measured gratifications for all dating apps, allowing results to be generalized to include mobile dating apps other than Tinder.

4.1 Limitations and Future Research

Like Study One, Study Two included only college students from a large, Mid-Western university. A more diverse sample may have different motivations for using mobile dating apps and different on-app

behaviors. Future research should include a more diverse sample to see how results differ. Although this study expanded Study One to include all mobile dating apps in addition to Tinder, homosexual-specific dating apps were likely underrepresented because 94.3% of respondents identified as heterosexual. Future research is required to determine if sought gratifications and on-app behaviors differ based on sexual orientation.

4.2 Final Conclusions

Despite these limitations, this project revealed important results and conclusions. Most significantly, this is the first scale measuring the gratifications of all mobile dating apps. This scale could also be used to explore other social networking tools that overlap in functionality or potential purpose. Finally, this research determined how sought gratifications affect individuals' behavior while using mobile dating apps and their "success" on the app in the form of relational outcomes.
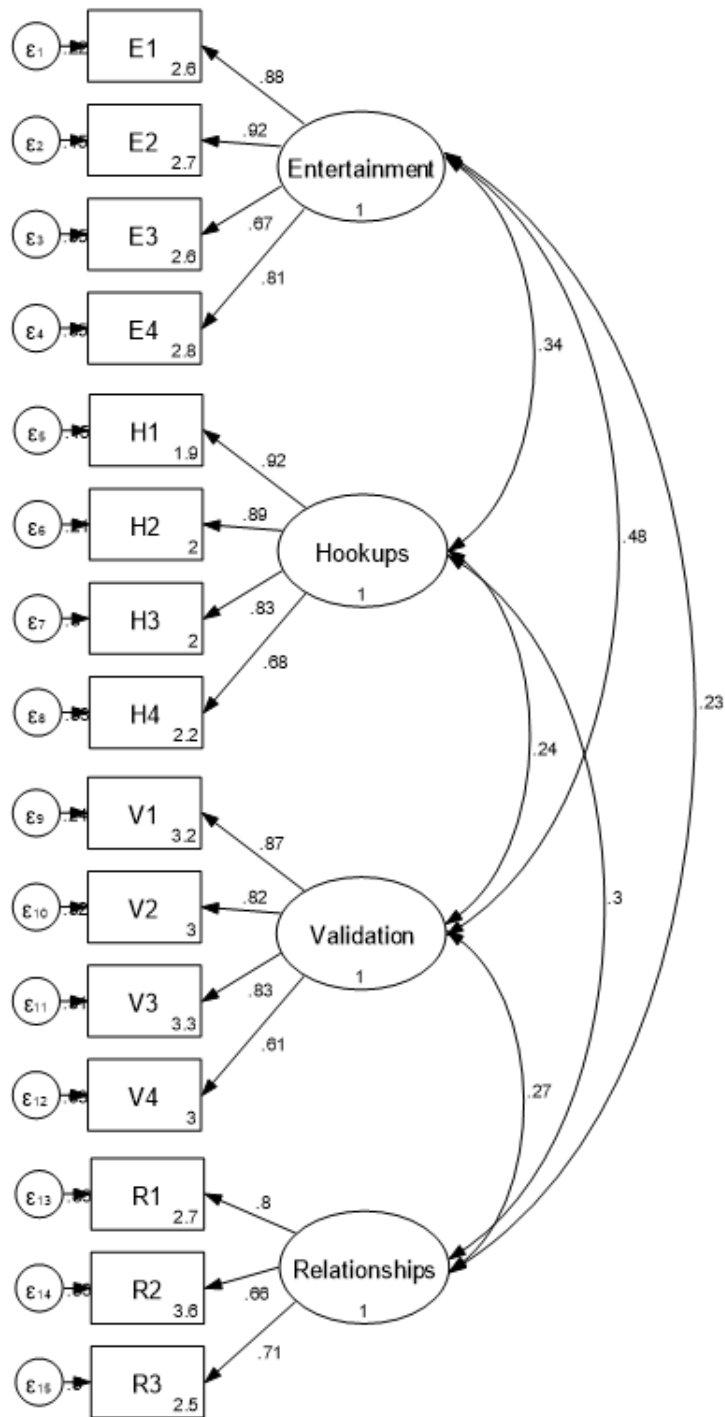
Figure 1. Final Model Resulting from the Confirmatory Factor Analysis

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