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# Terror on Twitter: A Comparative Analysis of Gender and the Involvement in Pro-Jihadist Communities on Twitter

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TERROR ON TWITTER: A COMPARATIVE ANALYSIS OF GENDER AND  
THE INVOLVEMENT IN PRO-JIHADIST COMMUNITIES ON TWITTER

By

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### **Abstract**

Social media has become the milieu of choice to radicalize young impressionable minds by terrorist organizations such as al Qaeda and the Islamic State. While a plethora of research exists on the recruitment and propaganda efforts by terrorist organizations there is limited number of quantitative studies that observe the relationship of gender and the involvement in online radical milieus. This current research will build upon prior studies through the comparative analysis of 750 unique Twitter accounts supporting the IS and the affiliates of al-Qaeda that were non-randomly sampled between January and September of 2015. The research aimed to address the questions of: 1) whether women that are involved in pro-jihadist communities on Twitter post substantively different amounts of content than men, 2) whether women that are involved in pro-jihadist communities on Twitter post substantively different content than their male counterparts and, 3) whether the gender disparity in level and type of involvement on Twitter differ amongst the supporters of different jihadist organizations. This study found that, while pro-jihadist communities on Twitter continue to be dominated by male participation, female supporters of the IS are more active and post more violent content than women that support any other organization. The intragroup differences found amongst the female supporters suggests that group ideology, recruitment and propaganda strategies play a role in the level of involvement of women in radical milieus.

*Keywords: Islamic State, social media, jihad, twitter, radicalization, gender, al*

*Qaeda.*

## Introduction

Social media has become perceived as the medium of choice where young impressionable minds are radicalized with extremist ideology (Weidmann, 2015; Thompson, 2011). Facebook, Instagram, Ask.fm and Tumblr are all targeted by the media and researchers alike, with particular attention towards Twitter as the radical milieu of choice in recent times (Vidino & Hughes, 2015). Twitter's initial reluctance to infringe on members' freedom of speech facilitated the establishment of a large number of online communities that support jihadist organizations around the world. The variety of online support that is garnered for the jihadist organizations like al Qaeda, its affiliates<sup>1</sup>, and the IS has been attributed to their differing recruitment and propaganda strategies (Sheppard, 2016; Stern & Berger, 2015).

While the internet has been previously utilized by jihadist organization to disseminate their message, the active recruitment of women through social media is an emerging public policy concern. Official propaganda distributed by al Qaeda and the IS has revealed little difference between the perceived roles that women play within their organization, that is, that there is no need for women fulfilling roles outside their intended domestic realm (Huey, 2015). The supporters of the IS, however, frequently disseminate content on social media that portrays women as active combatants in the battlefield (Winter 2015). Moreover, the IS has allowed women who are already radicalized to engage with potential female recruits on social media to further encourage others to migrate as well (Peresine & Cervone, 2015). The transition away from ideologically driven propaganda that perpetuates the historically dichotomous

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<sup>1</sup> Al Qaeda affiliates consist of established terrorist groups and homegrown terrorist cell that receive some form of assistance from al-Qaeda. Organizations affiliated with al Qaeda include, but are not limited to: Al Qaeda and the Islamic Maghreb (AQIM), Al Shabaab, Al Qaeda in the Arabian Peninsula (AQAP), Nusra Front, and Al Murabitoun (Humund et al., 2014)

gendered jihad by the IS's online community through the depiction of active female involvement is a departure from others organizations such as al Qaeda, and has influenced the way online supporters interact amongst each other (Saltman & Smith, 2015).

While previous quantitative research exists on the Twitter communities that support jihadist organizations, due to the collection of data with software that was unable to algorithmically determine an account owner's gender, a comparative analysis between the level of online involvement on radical milieus and gender has not been previously conducted (Berger & Morgan, 2015). Through the use of a comparative analysis between those who support different jihadist organizations, we can understand how the various propaganda and recruitment strategies of each group plays a part in influencing the way women participate within online radical milieus. Understanding the gender differences between male and female supporters will allow government agencies to better improve policies and programs to combat jihadist recruitment online.

This paper aims to build on existing literature through a comparative analysis of Twitter accounts that supported jihadist organizations in order to determine: 1) how the amount of content posted by men and women that support jihadist organizations on Twitter compared, 2) whether women involved in pro-jihadist communities on Twitter post substantively different content than men, and 3) whether intragroup differences in the amount and type of content posted by women existed on Twitter. In total, 750 unique Twitter accounts operated by both men and women were collected over the course of 9 months, January to September 2015.

### **Literature Review**

Historically, the active involvement of women within jihadist organizations was restricted by the interpretations of a gendered jihad, as well as what was considered acceptable female behavior within the organization (Von Knop, 2007). This resulted in many women fulfilling the domestic and administrative roles of the organization while men were placed in leadership and combat positions. The anonymity provided by the internet has allowed women to transgress the previously established gender norms that existed among jihadist and extremist organizations and become active participants online (Von Knop, 2007). The evolution of the online jihad into the realm of social media further emancipated women and allowed them to become increasingly involved within their online community in a way that was not attainable in the early years of internet use by organizations such as al Qaeda. Since then the participation of women in online radical milieus has continually grown. It is important for researchers to understand how organizations have managed the recent influx of female involvement, as well as how their strategies to do so have influenced the way in which women participate online.

In a post-9/11 world, extremists have taken advantage of the internet to effectively and inexpensively communicate, disseminate propaganda, and recruit supporters with little risk of reprisal from counterterrorism agencies (Blaker, 2015; Winn & Zakkem, 2009). During the initial adoption of the internet as the milieu of choice, the use of password protected discussion boards allowed existing members to communicate amongst one another with relative anonymity (Weimann, 2015). The involvement within these networks was dominated by male membership due to the reliance on previously existing real-world contacts required to access the closed forums. Discussion boards allowed registered members to converse on all topics related to their jihad; however, it was extremely difficult to disseminate their propaganda and

recruit additional followers outside of their network. 2008 marked the year that online terrorism departed from its reliance on obscure discussion boards and made its public debut (Weidmann, 2016). Anwar al Awlaki, a Yemeni-American Cleric began to post video-taped sermons calling for a violent jihad onto file-sharing services like YouTube (Maura, 2012). The decision to make their jihad go public allowed existing members to engage with the general public to further develop their jihadist ideology.

Jihadist organizations have been able to effectively leverage the social media platforms' liberal views on the freedom of speech to disseminate their propaganda with little resistance. The use of official websites was no longer needed to spread their extremist ideologies (Weimann, 2015). Instead, the de-centralized nature of social media allowed for the rapid dissemination of propaganda amongst its growing base of followers. The rapidity of growth amongst the pro-jihadist communities on social media resulted in an increase in public pressure to limit the distribution of hateful rhetoric (Stern & Berger, 2015). As publicly owned social media sites began to remove pro-jihadist content and shut down the accounts that disseminated the content, jihadist groups found another platform to disseminate their message: Twitter.

The reliance on Twitter to spread extremist ideology has resulted in varying degrees of success that has been dependent on the individual group's recruitment strategies and the content of their propaganda (Weidmann, 2015; Stern and Berger, 2015). Organizations such as Jabhat al-Nusra, a Syrian based affiliate of al Qaeda and the Islamic State (IS) have had great success in their social media campaigns and have gone so far to create dedicated media wings that focus specifically on the creation of propaganda and the engagement of their followers (BBC News, 2013; Becker, 2014). Through the use of battlefield footage, music

videos and multi-lingual documents, organizations are able disseminate their ideology to a wider audience than what was possible in the previous decade (Hall, 2012; Ali, 2015). The IS in particular has demonstrated an aptitude for cultivating a large community of supporters through their use of Twitter that has exceeded the ability of other jihadist organizations (Hosken, 2015).

IS's propaganda section, al-Hayat, produces high quality recruitment videos that mimic the special effects seen in action movies, along with music videos and an online magazine (Blaker, 2015). The content of their propaganda often contains a juxtaposition of extreme violence with scenes of a utopic society (Stern & Berger, 2015). Videos and pictures depicting beheadings, executions and battlefield footage stand in contrast to images of IS-run nursing homes and the building of city infrastructure (Hosken, 2015). The IS propaganda helps to further their ideology while still appealing to a variety of audience members (Peresin, 2015).

Discussions occurring on Twitter ranges from mundane life events to in-depth discussions of topics on their respective organization's ideology (Hosken, 2015; UN News Centre, 2014; Weimann, 2014). While it is common for organizations to declare battlefield victories or to claim a terrorist attack on social media, the IS frequently accompanies their posts with images of the death, torture and the executions of those who are considered to be unbelievers (Peresin, 2015; Stern & Berger, 2015). The exhibitionism of violence portrayed in the continuous stream of propaganda on social media is one of the features that defines the IS's propaganda strategy from other organizations (Hosken, 2015). The violence displayed towards Westerners and Muslims alike exists throughout the rhetoric of the IS and was partially attributed to the organizations separation from al Qaeda in 2014 (Stern & Berger, 2015). The IS's preference for violent battlefield theatrics and executions stands in stark contrast when

compared to al Qaeda's prior propaganda that is focused on religious instruction and ideology (Malik, 2015). This strategy has resulted in an increase in teenagers and young adults who express enthusiasm towards the support of the IS, likening the jihad to an adventure rather than a solemn religion tenet (Hosken, 2015).

Interestingly, an emerging phenomenon is the relatively high proportion of women who are actively involved in the online community (Hosken, 2015). The IS and al-Qaeda viewed active female involvement of any type in the organization to be a dishonorable activity (Ducol, 2012; Dienel et al., 2010). The roles ascribed to women by global jihadist groups are often non-violent and include activities such as distributing Qurans in prisons, raising the next generation of jihadists or creating propaganda (Huey & Witmer, 2016). The anonymity provided by the internet gives women the opportunity to transgress the previously dichotomous gender norms of jihadist organizations and become actively involved in group dynamics online (Von Knop, 2006). The anonymity of the internet has resulted in an increase in the relative proportion female membership and participation.

In a response to the increased levels of female engagement online, jihadist organizations have developed a variety of approaches to garner additional female support on social media (Weidmann, 2016). Interestingly, the content of official propaganda that is directed towards women by the IS and al Qaeda share similar ideological underpinnings and views on female involvement. Indeed, both organizations have official magazines with content found to be nearly interchangeable which revealed the belief that women are to remain in their ascribed domestic realm (Huey, 2015). For example, by creating a Twitter account *The Zora Foundation*, the IS was able to provide information geared specifically toward women (Peresin, 2015). The Zora Foundation was designed to be easily accessible among on Twitter

and Facebook, aiming to prepare potential female recruits of the IS for their jihad. The account propagates the important skills that women should be competent with prior to migrating to Syria or Iraq including: first aid, design and editing software to create propaganda, cooking and sewing (Peresin, 2015). Much of the content distributed by the Zora foundation discussed topics similar to those propagated by al Qaeda; however, the online IS community has supplemented official propaganda with additional content that displays women as active participants on the battlefield (Winter, 2015). Pictures of women holding Kalashnikovs or in a tactical formation are strewn across many of the female supporter's accounts. Though the realities of women living in the IS controlled territories are not reflective of the online content, the propaganda further encourages the online involvement of women on social media that exists in limited amounts amongst pro-al Qaeda supporters on Twitter (Havlicek, 2015).

Research suggests that women share similar motivations to join jihadist networks as their male counterparts. The battle against Muslim oppression, the creation of a utopic society and the comradery were all found were commonly cited as reasons to join groups such as the IS; however, the desire to seek adventure, was less common amongst women that had migrated (Magdey et al., 2015; Hoyle et al., 2014). Capitalizing on the above wants of sisterhood and to be a part of a community, the IS has also utilized female contact points to actively recruit women on social media (Sheppard, 2015).

Though al Qaeda had previously relied on conventional human interaction in key locations such as schools, religious centers or marketplace to aid in their recruitment efforts, they did not reappropriate this method in their social media campaign (Weimann, 2015). The IS however, had encouraged those who are radicalized, with some living outside of the IS controlled territory, to actively engage with women that they are networked with on social

media (Hosken, 2015). Through discussions on topics ranging from mundane life events to in-depth discussions of IS ideology, women are now able to develop and expand their own discourse in the online realm. As such, the perceived active participation within the group dynamics encourages women to become active producers of discourse rather than remain passive consumers (Stern & Berger, 2015). As such, the researchers hypothesized that the encouragement of active involvement through female contact points greatly increases the level of involvement by women when compared to jihadist organizations that rely solely on the dissemination of propaganda (Sheppard, 2015; Berger & Stern, 2015).

Terrorist groups such as al Qaeda and the IS have the ability to engage both men and women from around the world through their propaganda and recruitment efforts. Both the public and researchers alike have taken great interest in understanding the role social media plays in the formation of online pro-jihadist communities, however, little is known about how the level of involvement of men and women on Twitter is influenced through the various propaganda and recruitment efforts of jihadist organizations. This paper aims to address this gap in the literature through the use of a comparative analysis between the indicators of the activity levels of men and women who support the IS, al Qaeda and its affiliates on Twitter.

### **Methodology**

This paper is the result of a portion of the research garnered from a larger study that aimed to gain a greater understanding of the role of gender in influencing the selection of pathways through which individuals and groups can become radicalized. This study specifically explored women's participation in online spaces that served as radicalizing milieus. The resultant paper aims to build on previous work by analyzing the similarities and differences in posting patterns of men and women who support different jihadist organizations

on Twitter in an effort to determine whether the level and type of interactions by women on Twitter is influenced through the ideology, propaganda, and recruitment strategy of the particular jihadist organization that they support. In doing so, this study will address the three following research questions:

**R1:** Do women who are involved in pro-jihadist communities on Twitter post substantively different amounts of content than their male counterparts?

**R2:** Do women who are involved in pro-jihadist communities on Twitter post substantively different content from their male counterparts?

**R3:** Does the gender disparity in level and type of involvement on Twitter differ amongst the supporters of different jihadist organizations?

### *Sample*

From January to September of 2015 posts from the Twitter accounts of 750 online supporters of pro-jihad groups (Islamic State or al-Qaeda affiliated) were collected for a cross-sectional analysis. To locate accounts that would be included in the study, we drew from a sample of followers of three prominent accounts that promote pro-jihad ideology. Due to the limited number of pro-jihadist supporting women that made their information public, snowball sampling was conducted on the previously collected Twitter accounts to increase the size of the sample. The result was a non-random sample of male and female supporters of IS and AQ affiliated groups.

### *Independent Variables*

Two independent variables were included to explore the interaction between gender and the amount of activity of pro-jihadist Twitter accounts. The Twitter user's gender was

categorized as: 1) male, 2) female. Indicators used to determine the gender of a Twitter user included: 1) the use of male or female titles for usernames and Twitter handles; 2) pictures of female or male avatars or background photos, and; 3) self-referencing using terms such as ‘mother’ ‘daughter’ ‘fighter’ and ‘father’, among others.

The second variable included was the jihadist organization that the Twitter account claimed to be affiliated with, which was coded as: 1) no affiliation; 2) IS; 3) Jabhat al-Nusra<sup>2</sup>, and; 4) al-Qaeda affiliated. The decision to include the above organizations within the study allowed for a comparison of how the ideological differences, recruitment strategies and content of propaganda influenced the disparity between gender and the level and type of interaction on online milieus. The criteria used to identify an account’s group affiliation included: 1) pictures of the organizations emblem, black standard or prominent figurehead as a profile or background photograph; 2) whether the account posted content that explicitly stated their support for a specific group, and; 3) the use of the organization’s name within the account’s Twitter handle or description. Accounts that were involved in the pro-jihadist radical milieus of Twitter, but did not contain the above criteria, were coded as having no affiliation.

#### *Dependent Variables*

Several dependent variables were utilized in this study as indicators of the level and type of involvement of an individual within their network. In total, five variables were measured which included the number of Tweets posted by the account, the number of times an account retweeted content that was created by another user, the number of times an account

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<sup>2</sup> While it is recognized that Jabhat al-Nusra is an affiliate of al-Qaeda the decision to create a separate category in the analysis based on several reasons. Firstly, Jabhat al-Nusra has grown into one of al-Qaeda’s largest affiliates with a membership of roughly 5 000 and have developed their own official media outlet (The White Minaret). Secondly, Jabhat al-Nusra has competing interests with the IS in Syria and frequently contends over the recruitment of foreign fighters.

posted content per day, the number of followers per account and, the number of accounts that the user followed. The above measures help to determine whether women are as well connected, or interacting as frequently, as their male counterparts. Greater gender parity within a group of supporters for a jihadist organization would suggest that the recruitment and propaganda efforts are cultivating a larger and more involved female following.

This data was gathered in two ways. First, the number of tweets, followers and those that the account followed were collected directly from the account's Twitter page. Additional information was collected using the web browser extension NCapture which was subsequently analyzed through NVIVO to determine the number of retweets per account and the number of times the account tweeted per day. The dependent variables listed above have been used in prior research that analyzed the Twitter accounts of jihadist networks and have proven to be successful in measuring one's involvement within the milieu (Berger & Morgan, 2015).

To add another layer of depth to the analysis, the type of content that was most often posted by an account was collected and coded into the following categories: 1) no explicit content, 2) expressions of sympathy for their organization and its members, 3) moral support for the organization and its members, 4) offers of material support, 5) violent content, and 6) displaying a willingness to engage in violence. The analysis of the type of content posted provides the opportunity to determine whether the ideology, and the recruitment and propaganda strategies of each organization influences the way that women participate within the milieu. To determine the type of content propagated by a Twitter user, postings were collected through NCapture, a web browsing extension that gathers all postings by a Twitter account. The account's first 20 posts were coded into the above categories. This method of content analysis for large networks has proven successful in prior research (Klausen, 2015). A

limiting factor is that the content analyzed was posted over a short period of time when the accounts were very active.

### *Control Variables*

Several control variables were utilized in this study. First, the age of the Twitter users was coded as: 1) unknown, 2) 15-19, 3) 20-24, 4) 25-29, 5) 30-34, and 6) 35 and above. Prior research has found that the majority of participants in pro-jihadist milieus on Twitter are predominately teenagers and young adults. This was reflected in the decision to create five year age intervals up to the age of 34 with a category that included the limited number of accounts that disclosed an age of 35 and above. The user's self-disclosed nationality was coded as: 1) Unknown, 2) North American, 3) European, 4) African, 5) Middle Eastern, and 6) Asian. Finally, the user's self-disclosed location was coded as follows: 1) Unknown, 2) North America, 3) Africa, 4) Europe, 5) Middle East, 6) Syria and Iraq, and 7) Asia. The measurement of these variables provides researchers with the demographic information of jihadist supporters which adds another layer of depth to the analysis.

### *Analysis*

This paper offers a comparative analysis of posting patterns by gender among supporters of jihadist organizations on Twitter. Due to the non-random sampling techniques, the results of this study lack external validity. As a result, an in-depth descriptive analysis of the demographics of the sample was conducted. In the descriptive analyses, we compare the age, nationality and location of the supporters by gender and their group affiliation. Following the descriptive analysis, we observe the relationship between the level of activity on Twitter by gender and group affiliation in a cross-tabulation of the measures of central tendency. We then compared the type of interactions by gender and affiliation.

## Results

Table 1 displays the demographics of the sample by gender and group affiliation as a percent. As previously stated, the sample of this study was comprised of men and women who were involved in pro-jihadist Twitter communities that supported the IS, Jabhat al-Nusra, and the other affiliates of al-Qaeda. The IS supporters comprised the largest portion of observations in this study (N=291). Additionally, 49 percent of the overall sample consisted of female respondents. Table 1 displays the sample characteristics and distribution of the independent and control variables. Those involved in pro-jihadist Twitter communities are a hidden population that makes deliberate attempts to conceal their identities. Although unfortunate for research purposes, it is not surprising that 35 percent of respondents did not disclose their age and roughly 20 percent of respondents did not disclose their nationality or location. When age was disclosed, over half of the sample stated they were under 30 years old. Among those who disclosed their nationality, approximately 40 percent stated that they belonged to a country in the Middle East with another 20 percent claiming to belong to a European nation.

Table 2 displays the variables that indicate the level of involvement in pro-jihadist communities on Twitter by gender and group affiliation. Men and women that supported pro-jihadist organizations exhibited several differences in their level of involvement on Twitter as well as the type of content that they posted. All the women in the sample were not as active as their male counterparts when the total amount of content posted per account was compared. However, when tweets per day was analyzed, women that supported the affiliates of al-Qaeda as well as those who claimed no specific affiliation were more active than their male counterparts. This could partly be explained by the shorter account lengths of the women in the sample. Men supporting the IS and Jabhat al-Nusra posted significantly more content per

day than women supporting the same organizations. Men supporting the IS posted 25 percent more content than women per day with men supporting Jabhat al-Nusra posting 30 percent more content which translated into 229 and 181 more pieces of content throughout the lifetime of the accounts.

The ratio of tweets to retweets does help illuminate how often supporters create new content compared to distributing previously generated content. The ratio of tweets to retweets between the men and women supporting different organizations were similar with the exception of those who supported al-Qaeda's affiliates. The results suggest that men do not play a larger role in the creation of new content in their respective communities. One caveat is that this study only observed what Twitter would deem as a tweet or a retweet. Therefore, content that is continually redistributed by community members without being retweeted would be considered original content in this analysis. It is likely that the redistribution of content is higher than the tweet to retweet ratio suggests.

With exception to those supporting the IS, men had considerably larger numbers of followers per account on average than women. The Twitter accounts of women and men supporting the IS had a similar number of followers on average per account, however, women followed more accounts on average than their male counterparts. The results from this study suggests that, with exception of those that support the IS, men involved in pro-jihadist communities continue to be better connected and more active than their female counterparts.

Interestingly, the levels of involvement were noticeably different between female IS supporters and the women who supported other organizations. When the duration of the Twitter account was taken into consideration, female IS supporters posted between 0.7 and 1.2 times per day more than the women in the other two groups. The higher amount of tweets per

day translated into 639 posts per account on average compared to 554 for Jabhat al-Nusra supporters and 693 for al-Qaeda supporters; despite having an average account length that was two to five months less than the other groups in the sample. The results of this analysis does suggest that the recruitment and propaganda strategies aimed at increasing female participation online by the IS has resulted in increased levels of participation by women that was not observed in other terrorist organizations.

Overall, the IS supporters had the shortest account durations among all groups in the sample. The average account length for both men and women support IS was 11 months on average. The lower account duration can be attributed to Twitter's recent crackdown on accounts violating the terms and service agreement through the posting of violent images. The posting of propaganda that is peppered with violence has been a feature of much of the content distributed among IS supporters (Hosken, 2015). Research suggests that accounts that are the most active within pro-jihadist communities are more likely to post content that violates terms of service and are, therefore, at an increased risk of becoming removed from Twitter (Berger & Morgan, 2015). Table 3 does suggest that, despite the increased closure of accounts posting violent content by Twitter, the content being posted by IS supporters continues to be riddled with violence.

Table 3 displays the type of content posted by gender and group affiliation by percent. With the exception of al-Qaeda affiliated groups, men posted comparatively larger amounts of content was deemed to be an incitement of violence. Content that expressed a willingness to engage in violence was the least frequent type of material to be posted within this study's sample. The most common type of content posted by both men and women in the sample was

moral support – considered support or help at a psychological level – to either the organization or individual fighters.

Another disparity found between female supporters of the IS and the women who supported other organizations surrounded the type of content being posted. When compared to women in other organizations, women supporting the IS posted far more violent content. IS supporters posted between 5 and 13 percent more content that was considered to incite and support violence than any other group. This trend did not occur when we compared the amount of content that displayed a willingness to engage in violence. Also, women supporting the IS posted less content that expressed sympathy towards fallen fighters when compared to other organizations. It is likely that women supporting the IS are less sympathetic because the fallen soldier is often celebrated as a martyr in the IS community.

Overall men were more actively involved in their respective groups than women, with the exception of those who did not specify which group they supported. Men also posted violent content more frequently than women. When comparing women from the different groups of supporters, those who supported the IS participated at higher rates. The indicators of activity to suggest that the IS's unique approach towards the recruitment of females has been effective at promoting an increased involvement amongst supporters that are women.

### **Discussion**

Supporters of jihadist organizations on Twitter have grown into established communities that are well connected and highly active (Berger & Morgan, 2015; Weidmann, 2016). The results of this study suggest that while men continue to play a dominant role among the supporters of jihadist organizations on social media, female involvement online has become

a significant subset of the pro-jihadist community. The anonymity provided by the internet has allowed women to transgress the previously established gender norms that exist among jihadist and extremist organizations (Von Knop, 2007). Without fear of reprisal, women were observed as being able freely interact online.

The emancipatory nature of the internet that was theorized by Von Knop does help us to understand why the majority of the women observed in this study were actively involved in their community; however, it does not offer an explanation towards the variation found amongst the female supporters of the different jihadist organizations. This study found that women supporting the IS were more active than women supporting any of the other jihadist organizations. The IS supporters frequently posted more content than any other group of women with higher amounts of the posted content containing violence. To explain this phenomenon, we referred to prior research on IS' ideology and recruitment strategies.

Media reports have found that the ideology of the IS contains a dichotomous attitude towards the roles and responsibilities of women within the newly established caliphate (Gardner, 2015). On one end of the spectrum women are considered to exist as sub-humans and are treated as commodities that are to be sold or provided to fighters as a reward. On the other end, the IS considers women to be fulfilling an essential role in their efforts to further develop their utopic society (Gardner, 2015). To establish their caliphate, the IS aggressively recruits new members on social media platforms and other milieus (Stern & Berger, 2015). In their effort to recruit additional followers, the IS implemented a method that was not utilized by groups such as al-Qaeda. Rather than simply distributing propaganda, the IS has employed indoctrinated women that were previously recruited from Western countries to act as contact points for other potential female recruits (Shephard, 2016).

The IS' use of women as contact points has provided them with the ability to actively engage their female supporters. The use of individuals as contact points for potential recruits was frequently employed by al-Qaeda in a pre-9/11 world; however, it was never adapted to be used on social media platforms (Weidmann, 2015). The IS was able to reinvent this recruitment strategy to be used in today's online world which marked a drastic departure from competing organizations recruitment and propaganda strategies (Shephard, 2016; Weidmann, 2015) Topics range from the mundane to conversations that are deeply rooted in IS ideology (Shephard, 2016). As such, women supporting the IS are actively engaged within their online communities. The heightened level of interaction among female members supporting the IS observed in this study does indicate that the IS's use of female contact points has resulted in increased participation among their female supporters. The broader implication of this increased involvement through direct communication and recruitment is the potential for the radicalization of additional women followed by their subsequent migration to IS-controlled territory. As women are becoming more actively involved as participants in pro-jihadist communities, both social media platforms and government agencies must create policies to mitigate this type of risk towards public safety.

The results of this study can also contribute to the growing discussion involving the formation of policy aimed at combatting jihadism on social media. The prevalence of violent propaganda, threats of future terrorism offences and the active recruitment of foreign fighters on Twitter resulted in a mounting of public pressure for Twitter to control a growing social problem (Yadron, 2016). Twitter responded to the increased pressure by revising their policies to remove Twitter users who posted hateful and violent content. The reformulation of the terms of service resulted in the closure of 125, 000 accounts linked to pro-jihadist organizations

since the mid-2015 (Calamur, 2016). The consistent suspension of accounts that supported terrorism was believed to result in fewer terrorists online and would thus reduce the effectiveness of IS' propaganda strategy (Wright et al., 2016). It is important to note however that while the majority of the population will be exposed to some form of jihadist propaganda during their time spent on the internet and social media, very few will become involved in pro-jihadist communities on Twitter. Among those that do become involved within these communities, even fewer will become radicalized (Saltman & Smith, 2015). What will follow is a review of the effectiveness of Twitter's aggressive policy towards pro-jihadist accounts.

The sample in this study was collected during Twitters mass-removal of accounts linked to pro-jihadist networks. This created a unique opportunity to better understand how an aggressive policy that relied on the mass closure of accounts would impact the pro-jihadist community. This study found Twitters policy shift did have a limited effect on the IS' networks. The results of this study found that both men and women posted approximately half the amount of content per day than was observed prior to the change in policy (Berger & Morgan, 2015). However, the accounts included within this study reveals a community that continues to remain active and well connected despite the frequent closure of their accounts. Additionally, approximately 18.5 percent of the sample disseminated content that was dominated with violent imagery. While there was no previous measure on the amount of content posted that is violent, this result does suggest that Twitter's policy has also had an inadequate effect on limiting the dissemination of violent content.

An unintended consequence is this shift in policy is that the closure of accounts is now viewed as a badge of honor among pro-IS community members (Huey & Witmer, 2016). Oftentimes a new account is created shortly after the initial closure. The new accounts

frequently post a screenshot of the notification that their previous account was closed due to posting prohibited content that they had received by Twitter in an attempt to prove that they are 'hardcore' jihadists. A growing body of literature suggests that most terrorist supporters simply start over and reconnect with other users the day after their initial account was closed (Stern & Berger, 2015; Wright et al. 2016). The continual cycle of the closing and reopening of Twitter accounts is considered by some to be an ineffective counter terrorism strategy, and has been referred to as a virtual game of whack-a-mole (Stern and Berger, 2015; Wright et al., 2016; Arthur, 2014).

The constant closure of Twitter accounts also creates a difficult environment for law-enforcement agencies, counter-terrorism experts and researchers to locate and surveil those at risk of becoming further radicalized as the process of radicalization online occurs over an extended period of time (Von Behr et al. 2013). The constant closure and reopening of accounts can further muddy law-enforcement's perspective of whether an individual has become further radicalized. It is likely that the decision to stop closing accounts may result in a larger number of pro-jihadist account holders on Twitter, however, it would provide law enforcement agencies with the ability to look at the entire life-course of a Twitter account rather than requiring them to have to develop a storyline from a collage of previously created accounts.

Finally, prior research has indicated that a large portion of women involved in pro-IS communities are unlikely to become more deeply involved in terrorist activities (Huey & Witmer, 2016). A large portion of those that support jihadist networks are drawn towards the allure of belonging to a subversive network. Those that posted more ideologically-oriented posts would frequently display contradictions in their behaviors and attitudes either in their

subsequent posts or through their avatars. A large portion of the supporters in this sample consisted of teenagers and young adults and it is likely that many will age out of their involvement without the use of aggressive social media policies. Due the reasons stated above, the results of this study and additional research do suggest that a shift in policy would provide a more effective counter-terrorism strategy.

### *Limitations*

As with any study of a hidden population, the research was not without limitations. First, the identity of Twitter users in the sample can be concealed through the anonymity provided by the internet. An account holder has the ability to post false information, use stock photos as their profile photo or disable the geo-location of their posts to further conceal their identity. Due to the deviant nature of participating in pro-jihadist communities it is likely that a portion of the account holder's personal information has been falsified. Additionally, many accounts supporting jihadist organizations kept their content private and did not post publicly. The non-random manual sample of Twitter accounts was conducted to identify accounts that were blatantly dishonest in revealing their personal information to minimize this type of error.

A second limitation of this study was the lack of generalizability. The population of IS supporters on Twitter alone continually fluctuates on a regular basis and has been estimated to be between 40,000 and 100,000 users (Berger & Morgan, 2015). This estimation does not include those supporting other organizations. Additionally, a non-random sample was conducted to ensure enough women were included in the study. Due to the above reasons the study was limited to a descriptive analysis of a portion of the pro-jihadist supporters on Twitter.

Finally, the methodology used for the content analysis was based on previous work on jihadist social media accounts (Klausen, 2015). An inherent limitation of this method was that only a small portion of an accounts total number of tweets were analyzed. The analysis of a limited number of tweets may not fully represent the overall content that is posted by each account.

While this study had several limiting factors, it provides greater insight into how group ideology, recruitment, and propaganda strategies influence the way men and women interact on a radical milieu. Further research into account holders that did not post content publicly would also provide a greater understanding of how men and women interact in the more closely knit communities of pro-jihadist supporters. Jihadist organizations such as the IS and al-Qaeda constantly reformulate the way they spread their propaganda to recruit additional followers. Twitter is but one of many different social media platforms used to spread pro-jihadist ideologies and it is imperative to understand the differing effects that each social media platform has on the user base. Therefore it is recommended that additional research should observe how different social media platforms are exploited to pass on, debate and internalize information.

Social media has become tool of social change and identity formation in much of the developed world. Many of its uses have improved the way we live and interact with one another; however, it has also been utilized as a tool for insidious purposes. Jihadist organizations have been able to successfully radicalize and recruit supporters through the relentless distribution of propaganda on social media platforms. Interestingly, the unique approach to recruiting women through already radicalized women has resulted in female IS supporters participating at increased rates than women who support any other organization

within this study. Despite Twitter's recent efforts to mitigate the dissemination of IS content on their platform, pro-jihadist supporters remain well connected and active. This research helps build on the existing body of literature to help provide law enforcement officials, governmental agencies and private corporations with the resources required to implement evidence based-policy.

### **Conclusion**

This paper aimed to further develop an understanding of whether the ideology, propaganda, and recruitment strategy influenced how women interact in a radical milieu through the comparative analysis of 750 unique Twitter accounts. The results of this study found that men continue to dominate much of the discourse within the online communities of Twitter. However, the recruitment and propaganda strategies of each pro-jihadist community on Twitter does play a part in the level and type of interaction exhibited by the female supporters. This study suggests that organizations which create gendered propaganda and employ contact points to engage women within their online community have closer gender parity amongst its supporters. The insights gleaned from this study will help to better inform further research surrounding the use of social media by pro-jihadist communities.

## Tables

**Table 1.** *Demographics of Sample by Gender and Group Affiliation, by Percent*

	Group Affiliation							
	<u>No Affiliation</u>		<u>Islamic State</u>		<u>Jabhat al-Nusra</u>		<u>al-Qaeda</u>	
	Male	Female	Male	Female	Male	Female	Male	Female
<b>Age</b>								
15-19	5	8	7	9	10	13	5	18
20-24	16	30	21	18	11	14	9	27
25-29	38	38	32	44	43	54	43	44
30-34	13	15	21	13	21	15	14	22
35+	29	8	19	17	14	4	30	0
Total	100 (48)	100 (26)	100 (68)	100 (71)	100 (28)	100 (26)	100 (44)	100 (9)
<b>Nationality</b>								
North American	13	6	9	13	4	0	6	7
European	13	20	18	21	8	20	14	7
African	3	2	4	7	2	2	3	2
Middle Eastern	53	33	25	28	39	36	42	27
Asian	10	9	11	7	20	14	12	17
Unknown	8	30	23	24	27	29	23	41
Total	100 (62)	100 (66)	100 (141)	100 (150)	100 (51)	100 (56)	100 (66)	100 (59)
<b>Location</b>								
North American	15	14	11	17	6	7	6	8
European	11	24	11	22	16	25	9	19
Africa	5	2	1	6	2	0	5	0
Middle East	40	12	22	17	24	16	29	15
Syria/Iraq	5	17	20	15	25	4	18	10
Asia	11	8	9	5	14	20	12	15
Unknown	13	24	26	18	14	29	21	32
Total	100 (62)	100 (66)	100 (141)	100 (150)	100 (51)	100 (56)	100 (61)	100 (59)

**Table 2.** *Indicators of Activity by Group Affiliation, by Group Averages*

Indicators of Activity	<u>No Specified Affiliation</u>		<u>Islamic State</u>		<u>Jabhat al-Nusra</u>		<u>al-Qaeda and Affiliates</u>	
	Male	Female	Male	Female	Male	Female	Male	Female
Total Tweets	932	624	868	639	732	554	946	693
Tweet to Retweet Ratio	2.4	2	2.5	2.5	2.4	2.8	2.4	1.2
Tweets Per Day	2.3	3.8	3.5	2.8	2.3	1.6	1.8	2.1
Followers	433	234	324	311	374	255	582	319
Following	647	289	302	434	338	164	620	346
Follower to Following Ratio	5.5	7.5	3.1	1.9	4.2	4.4	4.7	1.4
Account Length	19	10	11	11	12	17	18	13

**Table 3.** *Content by Group and Gender, by Percent*

Content	No Specified Affiliation		<u>Islamic State</u>		<u>Jabhat al-Nusra</u>		<u>al-Qaeda</u>	
	Male	Female	Male	Female	Male	Female	Male	Female
None	21	26	11	15	10	20	12	19
Sympathy	19	38	6	11	19	18	26	25
Moral	40	29	46	51	41	45	47	37
Material	3	3	6	5	8	5	5	9
Inciting Violence	13	2	23	15	18	9	9	9
Engaging in Violence	3	3	7	3	4	3	2	2
Total	100(62)	100(66)	100(141)	100(149)	100(51)	100(56)	100 (66)	100 (59)

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