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# The attitude, norm and perception of communities towards Sumatran tiger conservation initiatives in Aceh

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## ABSTRACT

At the end of January 2014, the Indonesian Ulama Council announced a fatwa on *Wildlife Conservation for the Balance of the Ecosystem*. In Aceh province, Islam is strongly adhered to and it is expected that the fatwa would be beneficial to conservation in the province. We tested the effect of this fatwa in relation to attitude, norm and perception of the communities in relation to conservation initiatives. The study was conducted at the villages of Ulu Masen, Keumala Damlam and Pidie Jaya in April, 2015. The result of t test then partially there is significant relation (significance) between attitude, norm and behavior with intention with value  $p < 0.05$ , except on the knowledge variable having the sig value  $p > 0.05$ . In the F test results together to four independent variables have a significant relationship (significance) that is the value  $p 0,000 < 0,05$ . In the summary model there is a R number of 0.668. This shows that there is a good relationship between the four variables with the intention. While on the determination analysis  $R^2$  illustrates all the independent variables contribute to the intention of 41.1%. From the result of regression equation in relation to the intention to conservation action according to TPB theory is norm, behavior, and attitude, and if will do intervention in conservation investment with limited funding, hence according to this research better done by norm.

## ABSTRAK

Pada akhir Januari 2014, Majelis Ulama Indonesia (MUI), mengumumkan fatwa tentang Pelestarian Satwa Langka untuk Keseimbangan Ekosistem. Terkait dengan sosialisasi fatwa tersebut, perlu diketahui hubungan sikap, norma dan persepsi masyarakat terhadap aksi konservasi. Aceh merupakan provinsi dimana masyarakat Islam sangat taat sehingga memungkinkan peneliti mendapatkan gambaran tentang pentingnya norma (Islam) dihadirkan dalam mendorong aksi konservasi di Aceh. Penelitian dilakukan di sekitar desa Ulu Masen, yaitu di Desa Keumala Dalam dan Desa Genie Kabupaten Pidie pada bulan April 2015. Metode penelitian yang digunakan adalah survei dengan instrumen berupa kuesioner yang digunakan untuk mengukur sikap, norma, pengetahuan dan persepsi sebagai faktor determinan niat berpartisipasi sesuai dengan theory of planned Behavior (TPB) dengan skala likert 1-5. Analisis yang di gunakan menggunakan alat SPSS , dengan batas signifikan  $p < 0,05$ . Dari hasil uji t maka secara parsial adanya hubungan yang bermakna (signifikansi) antara sikap, norma dan perilaku terhadap niat dengan  $p < 0,05$ , kecuali pada variabel pengetahuan mempunyai nilai  $p > 0,05$ . Pada hasil uji F secara bersama-sama ke empat variabel independent memiliki hubungan yang bermakna (signifikansi) terhadap niat yaitu nilai  $p < 0,05$ . Pada model summary terdapat angka R sebesar 0,668. Hal ini menunjukkan bahwa terjadi hubungan yang baik antara ke empat variabel dengan niat . Sedangkan pada analisis determinasi Re empat variabel dengan niat . Sedangkan anberkontribusi pada niat sebesar 41,1%. Dari hasil persamaan regresi dalam kaitannya dengan niat terhadap aksi konservasi menurut teori TPB adalah norma, behavior, dan attitude. Dapat disimpulkan dan jika akan melakukan intervensi dalam investasi konservasi dengan pendanaan terbatas, maka menurut penelitian ini lebih baik dilakukan melalui norma.

**Keywords:** Attitude, norm, perception, conservation, fatwa, Aceh

## INTRODUCTION

Indonesia is one of the world's most biodiversity

rich countries, second only to Brazil is a global priority for conservation (Brooks et al., 2006; Myers et al., 2000). One of the challenges faced in endangered species conservation is the general lack of knowledge and awareness of the importance of

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Submitted 1<sup>st</sup> March, 2018. Accepted 20<sup>th</sup> March, 2018

maintaining biodiversity. The effects of hunting, collection and trafficking of wildlife has made many of Sumatra's charismatic species endangered. Past studies have shown human behaviour and relationship to nature is influenced by knowledge of the environment, as well as attitudes and intentions (Busse and Menze, 2014; Suki 2013). However, few studies have focused on how current fatwas can affect and/or assist a community in developing policies related to conservation, where values, beliefs and norms play important roles (Stern, et al., 1999). In a Muslim society, religion forms a main value-pillar that forms socio-cultural life, including that of community involvement in conservation efforts, since it is believed that Islam also teaches people how to guard nature and all its beings (Bhangwat et al. 2011; Mangunjaya and McKay 2012; Palmer and Vinlay, 2003). This offers the opportunity to enhance conservation by using religion in addition to knowledge about human behaviour and education (St. John et al., 2010).

Indonesia faces major challenges in its efforts to manage and protect endangered species. Some umbrella species, such as tigers, rhinoceros, orangutan and elephants, are already listed as critically endangered on the IUCN Red-list (IUCN, 2017). Human-tiger conflicts bring about prolonged problems that may lead to further reduction and loss of tigers (Nyhus and Tilson, 2004).

The Sumatran provinces Aceh, Riau, Jambi, and South Sumatra are often in the spotlight due to many cases of human-wildlife conflicts. (Wibisono et al., 2011). The Sumatran tiger (*Panthera tigris sumatrae*) is one of the rarest cats in the World. After the extinction of the Javan tiger (*Panthera tigris sondaica*) and the Balinese tiger (*Panthera tigris balica*) in the middle and late 20<sup>th</sup> century, the Sumatran tiger is the only tiger species left in Indonesia (WWF, 2011). Currently, the species has sustained a drastic population decline due to habitat loss and poaching, with other conflicts continuing to undermine their existence and survival in nature (Sunarto, et al. 2012; Wibisono and Pusparini 2010).

There have been several conservation strategies

developed for tiger conservation in Indonesia. In general, they have focused on protecting tiger core habitat as well as eliminate poaching. Despite the development of the National Tiger Recovery Program (NTRP), created as part of the Global Tiger Recovery Program (KLHK 2010), the tiger population continues to decline.

There are three main drivers of population decline

1. habitat loss resulting from opening so-called economic development zones such as logging, land conversion to plantations and / or other functions (IUCN, 2017; Sunarto et al., 2012)
2. illegal hunting and trade in tiger products (Chng and Eaton, 2016)
3. lack of environmental awareness and incentive to protect the habitat

All three points are relevant to Aceh. The province also reveres Islam as the dominant religion in the region (Aspinall 2009). The attitude and perception of the public towards endangered species, especially tigers as flagship species present in Aceh, Sumatra may, therefore, be affected more by doctrines set out by local religious leaders and institutions.

This study aims at assessing the effect Fatwa MUI No. 4 (2014) on the of attitudes and perceptions of the general public, especially with regards to their intention of participating in conservation activities in Aceh.

## METHODS

Data collection was done in the field around Ulu Masen Forest, Aceh, Keumala Dalam Village and Genie Village of Pidie Regency in April 2015. Ulu Masen spans over 266,573ha natural forest making 36% of the regency as Protected Area. Aside from being a tiger habitat, Ulu Masen is also used as a program model for REDD. The area is considered a very important Sumatran tiger habitat (Wibisono and Pusparini, 2010).

We developed a questionnaire to measure attitudes, norms, and perceptions as determinants of the intention of participating in conservation efforts in accordance with the theory of planned behaviour (Theory of Planned Behaviour (BAL) 1991). Behaviour in TPB is assumed as a function of beliefs that can be divided into three categories, namely (1) behavioural *beliefs* that are assumed to influence attitudes toward behaviour, (2) *normative beliefs* as determinants of subjective norms, and (3) control beliefs assumed to affect PBC. Our two main questions revolved around:

- a) Is there a qualitative relationship between attitudes, norms, behaviours, knowledge with the intention of participating in conservation?
- b) What is the relationships pattern (if any?) concerning attitudes, norms, behaviours and knowledge with the intention of participating in conservation in Aceh?

Subsequently, participants were asked to respond in the form of degree of approval following the Likert scale 1-5. Data were analysed using SPSS 22 with a 95% confidence limit ( $p < 0.05$ ) for multiple regression analysis.

## RESULTS AND DISCUSSION

### *Profile of Respondents*

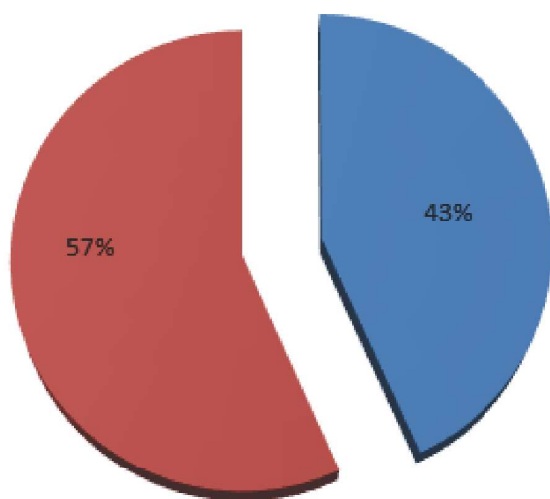
The survey was conducted on 67 respondents consisting of 14 women (20.9%) and 53 men (79.1%). This. The Acehnese are generally devout Muslims, however, our upon validating the level of obedience, our results reveal that, with regards to the obligation to perform the five daily prayers, 65.7% of respondents never performed prayers and 34.3% performed all prayers.

A little less than half (43.30%) was aware of the Fatwa, whereas 56.70% had no knowledge about it (Fig. 1). Some 3% had experienced conflicts with wildlife.

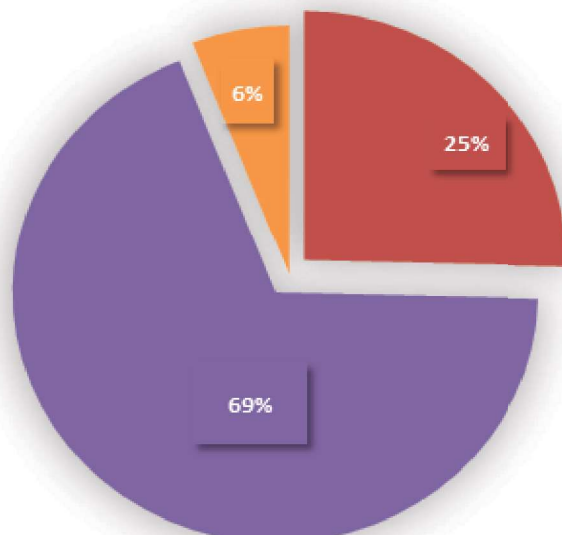
### *Relationships of attitudes, norms, behaviors, and knowledge with intent*

The results reveal a high degree of willingness by the Acehnese to participate in conservation (69%), even with 31% “less interested” and with poor intentions (Fig. 2). Positive intention and attitude are important when transforming a Fatwa into action, since the individual’s desire to behave is a combination of attitudes toward behavior and subjective norms (Ajzen, 1991).

Data from the four independent variables



**Figure 1.** The number of respondents who were aware (blue) / not aware (red) of Fatwa MUI No. 4, 2014 in Ulu Masen Forest study area.



**Figure 2.** The number of respondents who expressed willingness to engage in conservation with “high (purple), medium (orange) and low interest (red).

**Table 1.** Relationships between attitude, norms, behaviour and knowledge in connection to the intention of participating in conservation activities.

Category	Intention (%) (n = 67)			
	Poor	Sufficient	Good	Very good
Attitude	12 (25,53)	31 (65,96)	4 (8,51)	0
Norm	17 (26,15)	44 (67,69)	4 (6,15)	0
Behaviour	10 (21,28)	33 (70,21)	4 (8,51)	0
Knowledge	9 (20,93)	34 (79,07)	0	0
Average	23,47%	70,73%	5,79%	0

**Table 2.** Regression coefficients.

Coefficients <sup>a</sup>						
Model		Non-standardized Coefficients		Standardized coefficients	t	Sig.
		B	Std. Error	Beta		
1	Constant	0,051	0,480		0,106	0,916
	Attitude	0,181	0,067	0,283	2,714	0,009
	Norm	0,365	0,125	0,298	2,915	0,005
	Knowledge	0,035	0,063	0,059	0,557	0,580
	Behaviour	0,244	0,071	0,379	3,425	0,001

a. Dependent variable: Intention

**Table 3.** Model Summary<sup>b</sup>

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	SE - Estimate
1	0,668a	0,447	0,411	0,29613

a. Predictors: (Constant), Sikap, Norma, Pengetahuan, Perilaku

b. Dependent Variable: Niat

(attitudes, subjective norms, behaviour, and knowledge) were analysed for the accumulation of the effects on increasing participation in conservation. The intention of participating in the Acehese community is generally good, with 70.73% in the “sufficient” category and with some in the “less” category (23.47%). However, only 5.79% are categorized as good, and none were in the “very good” category. The results of this study indicate that; although Acehese’s attitude, norms,

behaviour and knowledge is positive, the intention to participate in conservation remains relatively low (Table 1).

The result of the multiple linear regression analysis showed significant relationship ( $p < 0,05$ ) between attitude, norm, and optimism with participation intention; while there is no significant relationship between knowledge and the intention to participate in conservation. The relationship pattern suggest that improving “attitudes” can

increase the intention to participate in conservation by 0.181; improving the “norm” will increase the intention to participate in conservation by 0.365; and improving “behaviour” will increase the intention to participate in conservation by 0.244 (Table 2). Thus, the intention of participating in conservation in Aceh is more influenced by norms (Islam) than attitude and behaviour. Therefore, the priority sequence of interventions for increasing conservation intentions in Aceh is norms, behavior, and attitudes.

The attitude of subject norms in this survey raises the question of what role religious leaders and community leaders can play to contributing to the preservation of wildlife and conservation in general. Our results suggest that religious and community leaders can play an important role in conservation by improving communities’ intentions to engage in wildlife and forest conservation in Aceh. Our results also suggest that respondents believe that participating in wildlife conservation can improve livelihoods through income generating activities related to eco-tourism.

The relationship between attitude, norm, behaviour, and knowledge with the intention to participate in conservation suggest that “intention” is closely related to “norm” when compared to attitude and behaviour ( $R = 0.668$ ). The four variables of attitude, norm, knowledge and behaviour can contribute to wildlife conservation action 41,1% (Table 3), meaning conservation interventions in Aceh should prioritize “norms” ahead of behaviour and attitude.

Our study suggests that, in general, people have enough time and money to play an active role in preserving the forest, and have a passion for wildlife conservation. The people of Aceh already scores high on attitudes, norms, behaviours and knowledge as the main capital to participate in conservation, but future conservation intervention can benefit from involving religious and community leaders. This may also be the most cost-effective way of raising awareness about the conservation needs in Aceh. Specifically for Aceh, knowledge does not appear related to intent and, therefore, conservation awareness raising through increasing knowledge is not likely to be as effective as “awareness” raising through “norms”.

## ACKNOWLEDGEMENT

This study was funded by Research and Technology Research Department under the “Applied Product Research” programme under the title “Change of Attitude and Perception on the Conservation of Animals through Religious Approach: Mui Fatwa Research No 4 About Wildlife Conservation”. The was also supported by US Fish and Wildlife Service, LPPM National University and Alliance of Religions and Conservation, UK. Data collection was conducted in collaboration with Fauna and Flora International in the village around Ulu Masen Forest. Thank you to the inhabitants of Keumala Village and Genie Village of Pidie District, and Jijiem and Abah Lueng Villages in Pidie Jaya District.

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