

Rescue Personality among Voluntary Emergency Services in Ireland; a Cross-sectional Study Using the Five-Factor Model

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Abstract

The study aimed investigate rescue personality in an Irish context, by examining (1) the relationship between OCEAN trait scores, and volunteer status (emergency volunteer, or non-volunteer), length of service, and weekly hours volunteering, and (2) sex differences in trait scores among emergency volunteers and a community sample. Purposive sampling was employed to recruit a sample of 77 emergency volunteers (52 males, and 25 females) from a range of Irish voluntary emergency service organisations. This research was cross-sectional, and quantitative. Participants completed the IPIP-NEO-120 personality measure online. Descriptive statistics investigated group characteristics of the sample, and the distribution of trait scores. Using independent samples t-tests, and binary logistic regression, it was found that as hypothesised volunteers score higher on extraversion and conscientiousness, but lower on neuroticism, openness, and agreeableness, than the community sample. Significant ($p < .001$) medium to large differences between volunteers and community individuals were found on all traits except extraversion. The regression model of the five traits was also significant in predicting belonging to the two groups ($p = .00$). Correlation results supported a predisposition model of rescue personality ($p > .08$). Implications for the expansion of rescue personality theory, stress interventions, and emergency training are discussed, and suggestions made for future research.

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Introduction

Volunteerism as a psychological construct involves premeditated, sought out, long-term helping, that is consistent with an individual's objectives and requirements, and for which the individual receives no monetary reward (Clary, & Snyder, 1999). Personality is an implicit system that determines an individual's traits and characteristics, which determine behaviour, cognitions, beliefs, and emotional response patterns (Allport, 1961). Early research highlights the value of personality in predicting volunteerism (Bronfenbrenner, 1960). Reviews have found that research into personality, enduring dispositions and capacities of volunteers is scarce, and lacks the utilization of well-established personality models such as the five-factor model (FFM), especially on the trait of extroversion (Smith, 1994). Despite this, volunteers were found to have significantly higher conscientiousness than the population norm, in a review of personality and social investment; however, sufficient research could not be found on the trait of agreeableness to produce results (Lodi-Smith, & Roberts, 2007).

Other volunteer personality findings must be reported, despite their disjointed nature due to not being associated with an established personality model, which inhibits comparison and therefore makes the task of review difficult. In a review of the limited volunteer personality literature (specifically among Community Mental Health volunteers in this instance), it was found that a consistent pattern of internal locus of control (efficacy), higher empathy, emotional stability and self-esteem levels predicted volunteer participation (Allen & Rushton, 1983). Further research supports the finding of the importance of locus of control (Brown & Zahrlly, 1989; Florin, Jones, & Wandersman, 1986; Miller, 1985). Additional personality traits that

predict volunteerism are assertiveness (Florin, Jones, & Wandersman, 1986), tenacity, warmth and fewer symptoms of depression (Hunter, & Linn, 1981).

Volunteering has been robustly associated with a large number of beneficial health outcomes among individuals at different points in the lifespan (Moen, Dempster-McClain, & Williams, 1989, 1992; Onyx, & Warburton, 2003). In general, the relationship between volunteering and self-rated health is consistent across income level in 139 countries (Kumar, Calvo, Avendano, Sivaramakrishnan, & Berkman, 2012). Findings from a large longitudinal study suggest that self-rated health is strongly predicted by objective measures of health and mortality rate in males and females, despite demographic or socioeconomic variables (Idler, & Kasl, 1991; Wolinsky, & Johnson, 1992; Young, & Glasgow, 1998). Cross-sectional data has found the relationships between volunteering and wellbeing and self-perceived health (Jirovec, & Hyduk, 1999; Okun, 1993; Van Willigen, 2000; Warburton, Le Brocque, & Rosenman, 1998). A meta-analysis also reported the relationship between volunteering, wellbeing, and quality of life (Wheeler, Gorey, & Greenblatt, 1998). One study found that volunteering was positively associated with life satisfaction, however most importantly, as volunteers socioeconomic disadvantage increased, life satisfaction also increased (Fengler, 1984). This relationship between volunteering and life satisfaction has been mirrored in other cross-sectional research (Hunter, & Linn, 1981), and longitudinally (Van Willigen, 2000).

Additionally, volunteering has been associated with a number of positive psychological health outcomes such as self-esteem (Okun, 1994), stress and coping (Jackson, Antonucci, & Gibson, 1990), adjustment in the face of significant life events (for example, death of a spouse), (Richardson, & Kilty, 1991; Szinovacz, 1992), and finally lower reported anxiety and depressive

symptomology (Hunter, & Linn, 1981). Longitudinally volunteering has been associated with reduced mortality rates among older volunteers (Musick, Herzog, & House, 1999). Volunteering has also been shown to be longitudinally predictive of mental states such as happiness, which in turn is also predictive of a number of other beneficial outcomes including conflict resolution skills, original thinking, immune system functioning, physical health, and sociability (Borgonovi, 2008; Dulin, Gavala, Stephens, Kostick, & McDonald, 2012; Smith, 2016). While there are a number of benefits that have been associated with volunteering in the literature, the predictive or beneficial value of the traits of the individual volunteer has rarely been examined. However, one study found the personality of students who volunteer is a significant predictor of life satisfaction (Buchanan, & Bardi, 2010), and extensive research supports the claim that life satisfaction is a significant beneficial outcome of volunteering (Finkelstein, Penner, & Brannick, 2005; Grant, 2012).

There is also a variety of types of volunteering, including a wide range of roles, from coaching an underage basketball team, to volunteering abroad delivering humanitarian aid amid conflict or natural disasters. Research during the mid to late twentieth century produced a large number of theories on the different types of volunteer and levels of commitment to volunteering. Although this research is disjointed, a review by Britton has attempted to bring sixteen of these theories together (see appendix 1 for a tabulation of some volunteer types (1991)). For the purpose of the current review, one type of volunteer will be focused on, that is an emergency service volunteer (front-line or second-line). This group has also been labelled civic volunteers (McBride, Sherraden, Benítez, & Johnson, 2004), and permanent disaster volunteers (Britton, 1991) in the literature. Theoretically, disaster volunteers can be in one of two categories

according to American Sociologist Elwin Stoddard. Ephemeral disaster volunteers encounter an emergency and are willing to give assistance, whereas permanent disaster volunteers are constantly in training, preparing for such an event (Stoddard, 1969). In the current piece, this group will be referred to as the voluntary emergency services (VES).

The existence of a rescue personality (RP) was first suggested late in the twentieth century when a description of the traits of Emergency Service (ES) personnel was given (Mitchell, & Bray, 1990). Traits such as intrinsic motivation, being devoted, type-A, conventional, impulsive, bored easily, a social traditionalist, and preferring taking action were listed (Mitchell, & Bray, 1990). The theory itself has received little interest in the literature. Although limited research has examined ES personality with, and without referring to rescue personality theory itself. There has also been criticism for the descriptive nature of the theory (Wagner, Martin, & McFee, 2009). Merely listing traits, which were not discovered based on research findings, and finally for the theory not being associated with an established model of personality, as this does not facilitate empirical testing (Wagner, 2005b; Wagner, Martin, & McFee, 2009). Wagner, Martin, and McFee attempted to make links between the aforementioned description, and the FFM (2009). It was hypothesised that ES would display lower openness to experience, and higher conscientiousness (Wagner, Martin, & McFee, 2009). Klee and Renner, furthered this association with the FFM, by linking the following rescue personality traits with the big five (low neuroticism and openness, and high extraversion, conscientiousness, and agreeableness):

— Low neuroticism: ES individuals are composed, not avoidant or self-conscious

- High extraversion: ES individuals are social, impulsive, take risks, seek excitement, action-orientated, easily bored, active, and easily able to befriend others
- Low openness: ES individuals are social traditionalists, and not liberal or highly emotional
- High conscientiousness: ES individuals are motivated, competitive, possess high standards, detail-driven, and obsessive
- High agreeableness: ES individuals are drawn to help people, enjoy being indispensable, committed, empathetic, altruistic (2013).

RP suggests that individuals involved in the VES and paid/career ES display the same pattern of personality traits (Klee, & Renner, 2013; Mitchell, 1983; Mitchell, & Bray, 1990). Due to the lack of VES specific research on rescue personality, the literature among both VES groups and ES groups will be reviewed. With regard to prevalence, the majority of countries across the world have ES personnel that carry out long-term helping with critical incidents, to aid, and protect society, while receiving monetary reward for this service (Parrish Meadows, Shreffler, & Mullins-Sweatt, 2011). These professions are labelled critical occupations (Parrish Meadows, Shreffler, & Mullins-Sweatt, 2011), and there are a number of differing front-line ES careers including but not limited to fire, police and emergency medical services (EMS) (Paton, & Violanti, 1996; Parrish Meadows, Shreffler, & Mullins-Sweatt, 2011). In 57 countries, individuals volunteer in 210 organisations that are some form of civic or national service, in which training is delivered in techniques used by career ES personnel (McBride, et al., 2004).

Findings on RP suggest that neuroticism as a trait is consistently found to be non-significantly below norm among ES worker groups; firefighters compared with blue-collar workers (e.g. welders, mechanics, etc.) (Wagner, Martin, & McFee, 2009), and among EMS professionals and EMS volunteers contrasted with population norms (Klee, & Renner, 2013). These findings with the assumed pattern of traits in the FFM associated with rescue personality (Klee, & Renner, 2013). Conscientiousness was found to be marginally higher, and openness to be marginally lower consistently among different groups of ES. Klee and Renner found the aforementioned pattern among a relatively large sample of both EMS professionals and volunteers, which were contrasted with population norm scores (2013). This design of study, which examines both paid/career and volunteer groups of ES, is scarce in the body of literature, but is vital in examining the claim that VES and ES do not differ on personality (Klee, & Renner, 2013; Mitchell, 1983; Mitchell, & Bray, 1990).

RP findings on the remaining FFM traits are more mixed. The majority of studies have found that extraversion is the only trait that differs significantly among ES workers compared to general population levels. Extroversion scores are significantly higher among firefighters than blue-collar workers (Wagner, Martin, & McFee, 2009), and in a sample firefighters and police officers compared to a normative sample (Salters-Pedneault, Ruef, & Orr, 2010). One finding among EMS personnel contradicts this claim, as extroversion score was the only non-significant finding (Klee, & Renner, 2013), however, extraversion was marginally higher among the EMS, which is consistent with rescue personality theory. More problematic for RP are the finding that, firefighters contrasted with blue-collar workers (Wagner, Martin, & McFee, 2009), and EMS professionals and EMS volunteers compared to norm population scores have lower agreeableness

levels (Klee, & Renner, 2013). This is directly contradictory to the committed, empathetic, altruistic description provided (Mitchell, & Bray, 1990). However, Klee and Renner have given a possible explanation for this, which places blame on measurement issues in the limited research rather than a flawed theory (2013). It was discovered that studies have utilized different scales of the FFM, each of which measure different facets, some of which in this case do not represent the aspects of agreeableness displayed by ES or VES personnel (Klee, & Renner, 2013).

There are a number of other criticisms of RP to be made. According to the theory, only police, firefighters and EMS (for example paramedics), display RP. However, research among the military (Klee, & Renner, 2016), and US Airforce (Callister, King, Retzlaff, & Marsh, 1999; King, McGlohn, & Retzlaff, 1997), indicates that these groups also display this pattern. Neuroticism is consistently yet non-significantly below norm among male and female student pilots assessed against male and female population norms (Callister, et al., 1999; King, McGlohn, & Retzlaff, 1997). Conscientiousness was found to be higher and openness lower among male and female German soldiers compared with a norm sample (Klee, & Renner, 2016). A similarly consistent pattern of higher conscientiousness and lower openness has been found among a very large student pilot group (Callister, et al., 1999), and more experienced male and female pilots (King, McGlohn, & Retzlaff, 1997). Extroversion scores are significantly higher among soldiers, and (student and experienced) Airforce pilots contrasted with a norm sample (Callister, et al., 1999; King, McGlohn, & Retzlaff, 1997; Klee, & Renner, 2016).

Finally, agreeableness findings are conflicting (which is consistent with research among the three proposed RP occupations) and suggest sex-differences. Female pilots displayed higher agreeableness levels than Airforce-male pilots, and a female normative sample (King, McGlohn,

& Retzlaff, 1997). Studies among Airforce pilots and soldiers of both sexes show this lower agreeableness pattern. (Callister, et al., 1999; Klee, & Renner, 2016). A meta-analysis of 18 studies of military pilot personality discovered a significant consistent pattern in findings that matches that of much of the research on general ES workers, a pattern of lower neuroticism and agreeableness, and higher extroversion and conscientiousness (Castaneda, 2007). Possible explanations for this may be the similarity or commonality of certain tasks to both groups, such as being delivered medical or first aid training, handling weapons, and regularly facing life or death situations; each of which could be presented as predisposition or socialisation explanations. Regardless, the aforementioned findings highlight opportunity for criticism of RP theory, and for the expansion of the theory (Klee, & Renner, 2016).

An additional issue with RP theory arises from findings of differences on personality trait scores between different ES occupations. Firefighters and paramedics differed on in terms of firefighters displaying lower openness and agreeableness than paramedics, while paramedics were more extroverted (Fannin, & Dabbs, 2003). Secondly firefighters and police officers were contrasted and police officers scored higher on extraversion and conscientiousness than firefighters (Salters-Pedneault, Ruef, & Orr, 2010). Furthermore, it was established that different groups within a German military sample differed on openness score, in this case military students and military medical personnel (Klee, & Renner, 2016). Paton has suggested that researchers exercise caution in treating all ES occupations as a homogenous group, and instead that differences be examined, in order to inform RP theory (2003). Further problems with the theory are found in the claim that VES and ES both display the trait pattern in question, as one finding among EMS personnel contradicts this claim. EMS volunteers differed from professional EMS

on the extroversion trait (Klee, & Renner, 2013). However, there is such a lack of RP research that has been carried out among VES, further investigation is required to draw conclusions.

Finally, according to the RP framework, there are further traits of the individual that can be investigated in order to capture the full description provided (Mitchell, 1983; Mitchell & Bray, 1990). However again, due to the descriptive nature of the theory, difficulty is experienced in finding consensus on the additional traits that should be tested. It has been suggested that motivation, personality facets as opposed to higher-level traits, stress response, leisure behaviour, risk-taking, and resilience be examined (Klee, & Renner, 2013, 2016, & Wagner, Martin, & McFee, 2009). Risk taking behaviour is problematic as an additional variable, in that measures of extraversion often include items on risk-taking, creating overlap. Some RP research has included measures of type A personality (Wagner, Martin, & McFee, 2009). Further research on the traits of VES postulated hardiness to be a common trait (Dunning, 1985; James, 1992). However, aside from findings not supporting the claim, research in these areas is methodologically flawed as a result of incomplete questionnaires and data manipulation, through the use of stepwise regression, and the deletion of participants (Moran, & Britton, 1994b). Finally, some research has found unique coping styles among ES, using problem-oriented coping, rather than emotion-oriented coping, furthermore, this profile may be beneficial in having a positive influence on general health, and perhaps act to prevent adverse reaction to stressors (Moran, & Britton, 1994a). No research has been found that examined all aspects (albeit controversial) of the rescue personality framework among one sample.

There are a number of reasons that further research is essential in the area of RP. Firstly, the VES are heavily relied upon by career ES workers in mass emergencies due to the higher

number of volunteers to career professionals, which are provided, with equivalent training and qualifications, (Britton, 1991). Governmental leaders, also heavily rely upon these volunteers especially in times of economic recession, when cutting expenditure on career ES workers, is employed as an effective fiscal policy (Brudney, 1990; Estepp, 1990; Snook, 1990; Sundeen & Siegel, 1986; Zech, 1982). Furthermore, permanent volunteers provide a network between career ES responders, their relevant formal governmental resources, and the unofficial neighbourhood resources. Research into the psychology of stress has revealed that individuals who aid in emergencies are often as likely to require treatment following a disaster as general witnesses, and yet this group is rarely involved in research (McBride, Sherraden, Benítez, & Johnson, 2004).

Previous research also indicates that investigating personality and gaining an understanding of the traits of ES is vital in developing preventative procedures and interventions (Klee, & Renner, 2016; Parrish Meadows, et al., 2011), such as Critical Incident Stress Debriefing (CISD) (Everly, Flannery, & Mitchell, 2000; Mitchell, 1983). The character description provided in the RP framework was foundational to the development of the Critical Incident Stress Management (CISM) model (Mitchell, & Bray, 1990), and Critical Incident Stress Debriefing (CISD) (Everly, Flannery, & Mitchell, 2000; Mitchell, 1983). CISM involves a seven-stage intervention for ES workers, aiming to reduce the effects of critical incident stress (Everly, & Mitchell, 2000), which due to the presumptive and descriptive nature of the theory it has been based on, has proved a controversial intervention model (Wagner, 2005a; Wagner, 2005b).

The CISM intervention stages include planning and preparation pre-crisis, soon after the crisis workers disband and hold a staff consultation, 12-hours post-crisis hold small informal group interventions, and 1-10 days post-crisis small formal group debriefings. Furthermore,

individual intervention is possible at any time in the process, pastoral intervention, and organisational intervention, conclude the seven stages, in which methods and procedures are reviewed, further support and communication is offered, and if aims are achieved, closure is gained (Everly, & Mitchell, 2000). Mitchell maintained that it is vital that clinical specialists working with ES clients are informed about, and consider the specific traits, inclinations, and job tasks of these specialised occupations (1988). Much of the body of research has been carried out on U.S. Airforce pilots, as it is maintained that personality research is necessary for clinical assessments, (Callister, et al., 1999). Conversely, it has been recommended that should RP theory receive no empirical support, the CISM intervention be replaced. This highlights the urgent need for research contrasting ES, and those engaged in other occupations, for the appropriate development, implementation and evaluation of ES tailored interventions (Wagner, 2005a; Wagner, 2005b).

ES workers encounter traumatic events regularly, and therefore can experience occupational stress. Research has highlighted a number of risk factors (pre-, peri-, and post-trauma) for the development of Post-Traumatic Stress Disorder (PTSD) (Kessler, et al., 2014). These findings are highly important in creating a risk profile for PTSD. Such factors unsurprisingly include neuroticism, which predicts depression following life trauma (Fava, & Kendler, 2000), and the development of PTSD itself (Jakšić, Brajković, Ivezić, Topić, & Jakovljević, 2012). Personality trait levels can be associated with both positive and negative outcomes, for example high extraversion has been linked with posttraumatic growth (Sheikh, 2003), and more recently low extraversion predicts depression, and the development of PTSD (Pajonk, Cransac, Teichmann, & Weth, 2010). Furthermore, a systematic review of over thirty

years of research has found a negative relationship between both extraversion, and conscientiousness, and the development of PTSD (Jakšić, et al., 2012). This paper highlights the value of personality as one element of a model explaining the development of arguably one of the most controversial psychiatric conditions (PTSD) (Jakšić, et al., 2012), therefore it is important to investigate the personality of ES personnel who are exposed to traumatic events frequently.

It has also been claimed that personality characteristics can be utilized both as predictors of traumatic response, but also for work performance (Wagner, Martin, & McFee, 2009). Research into how individuals perform in an occupation, and function in a specific role suggests that personality influences the above relationships (for a review see Tokar, Fischer, & Subich, 1998). Job performance and role function are especially important in emergency occupations, when lifesaving is the job task. Therefore, personality research among the ES is relevant to vocational choice researchers.

In addition to addressing the aforementioned problematic claims, inconsistent findings, and methodological flaws in RP research, future research must consider a number of other variables that have rarely been investigated in the body of literature, such as gender and cultural differences, and the predisposition vs socialisation debate. A distinct military personality subtype, based on gender was discovered, in which male soldiers scored significantly lower on neuroticism and agreeableness than did female soldiers (Klee, & Renner, 2016). Additionally, gender differences between experienced Airforce pilots were found, with males scoring lower than females on the traits of conscientiousness, agreeableness, and extroversion (King, McGlohn, & Retzlaff, 1997). Furthermore, longitudinal research among an Airforce sample found gender differences on the remaining two traits, with males also scoring lower than females on

neuroticism and openness (King, Callister, Retzlaff, & McGlohn, 1997). These findings add magnitude to the suggestion that future research must examine sex-differences in such groups, as differences were found on each of the five traits (King, McGlohn, & Retzlaff, 1997; Klee, & Renner, 2016).

Much research into cross-cultural differences in personality supports the construct of multiculturalism (Benet-Martínez, 2012), and consistently highlights a similar pattern to that which is evident in American cultures (Kajonius, & Mac Giolla, 2017; Mlačić, & Goldberg, 2007). This result has been found among fifty cultures, however variation does exist, albeit slight (McCrae, & Terracciano, 2005). In order to investigate the possible impact of such variation, it is vital to investigate RP in many cultural contexts. Especially considering the fact that the majority of RP research has been carried out in North America (Salters-Pedneault, Ruef, & Orr, 2010; Wagner, Martin, & McFee, 2009; Wagner, 2005a; Wagner, 2005b), and Australia (Moran, & Britton, 1994b), with studies only recently beginning to examine European samples (Klee, & Renner, 2013; 2016). Furthermore, there are possible implications for the use of personality research in intervention development, as qualitative research has indicated that volunteer firefighters rely partially on culture to aid with resilience in dealing with potentially traumatising events (Blaney, 2017).

RP theory would suggest a predisposition towards joining the ES or VES (Klee, & Renner, 2013), while longitudinal research is required to test this hypothesis, and no longitudinal research has been found addressing this, for the purpose of the current review. Only two pieces of research attempted to address this preliminarily, (Klee & Renner, 2013, 2016). Measures of socialisation such as length of service were not associated with trait score, which provides some

support for the claim of predisposition made in RP theory (Klee, & Renner, 2013). Another example of a socialisation variable that could be utilized in research, especially with VES rather than ES is a self-report weekly/monthly dedication to ES volunteering, which could be measured in hours for example. However, length of service did predict differences in extroversion score (but not any other trait) among EMS career and voluntary professionals (Klee, & Renner, 2013), student soldiers and medical division soldiers (Klee, & Renner, 2016). These findings raise questions over the accuracy of the predisposition claim.

To discuss implications, were the socialisation model to be supported by future findings, consideration must be given to the possible impact of frequency and type of call out. This is especially important considering the majority of RP research has been carried out in differing climates (Australia, and parts of North America), and the topical issue of climate change. For example, the Australian and North American ES and VES have likely been dealing with forest and bush fires quite often for decades. Whereas with global warming Irish VES and ES have only more recently received a number of call outs for major weather events such as ‘Hurricane Ophelia’, and ‘The Beast from the East’, which were previously much less frequent events. It is unknown what impact, if any, these socialisation differences may have, however the role climate related events play in influencing the type of call outs, and therefore tasks services engage in may be related to cross occupational differences (Salters-Pedneault, Ruef, & Orr, 2010; Wagner, Martin, & McFee, 2009), provided that findings supported a socialisation model. This highlights the current need for research addressing the predisposition vs. socialisation debate, and also for cross cultural research with a focus on gender difference.

An objective of the current research is to address some problems with RP literature, such as have been reviewed above. It is aimed that the current study will add cross-sectional evidence to the literature on RP theory in an Irish VES sample. It is also intended that both the VES sample trait scores on the IPIP-NEO-120 (Johnson, 2014), will be contrasted with an Irish community internet sample included in a previous piece of research (Kajonius, & Mac Giolla, 2017). Furthermore, the study will go some way in testing the predispositional nature of RP, through the investigation of the cross-sectional relationship between FFM personality trait score and two socialisation variables. Years of service and weekly time spent volunteering with the ES, will act as measures of level of socialisation. To address the question of gender difference, which has been raised in the literature, this will also be tested in the current piece. This study will investigate four hypotheses; three hypotheses are non-causal, directional (hypotheses 1, 2 and 3), and the fourth will be non-causal, non-directional due to the lack of research among RP occupations specifically that address gender difference (hypothesis 4). Hypothesis 1: VES will score higher on extroversion, agreeableness, and conscientiousness, and lower on neuroticism, and openness than an Irish community sample. Hypothesis 2: having more years of service will not be associated with personality trait scores. Hypothesis 3: dedicating more weekly hours to volunteering will not be associated with personality trait scores. Hypothesis 4: VES females and males will differ in some way on personality trait scores.

Methods

Participants

The current sample consisted of 77 ES volunteers from Irish organisations such as Civil Defence, Order of Malta Ambulance Corps (OMAC), Dundalk Sub Aqua Search and Rescue Club, and Drogheda Coastguard. Inclusion criteria were broad; participants were permitted to have any length of service with the respective volunteer organisation, and could volunteer for any number of hours per week. Additionally, participants were required to be 18 or over, and have provided the branch officer with a valid email address. The aim was that more than 75 participants would be sampled from the population of 3,500 Civil Defence volunteers across Ireland. This proposed sample was derived from calculations based on the number of predictor variables, according to two of these calculations the sample needed to be 75 (15x5) (Stevens, 1996), or greater than 90 (50 + (8x5)) (Tabachnick & Fidell, 2007).

The Irish Civil Defence is a volunteer based organization that supports the front-line ES in dealing with severe weather, flooding, and major incidents, firefighting, and searching for missing people. The organisation has thirty branches across the twenty-six counties in the Republic of Ireland. However, recruitment pools were later extended to include other VES organisations (as outlined above), due to a low response rate (1.51%). The proportion of the sample that each VES organisation made up is presented in table 1 (note that many participants reported a number of organisations, proportions reflect only primary organisation (first listed in questionnaire response)). The sample was gathered using purposive sampling methods and consisted of 52 males (67.5%), and 25 females (32.5%). 20 participants are/were paid employees of the ES, in addition to being part of the VES, with EMS being the biggest proportion (table 1).

A number of participants were members of more than one VES organisation; however, the majority volunteered with only one organisation (table 1). Comparisons were made in the current study between the above VES sample, and Irish community scores on the personality measure (IPIP-NEO-120; Johnson 2014). The comparison group data results were taken from a study examining cross cultural differences on the five factor model using an internet sample (N = 130,602), with 1281 (45.01%) male and 1565 (54.99%) female participants from Ireland (Kajonius, & Mac Giolla, 2017). This sample was not nationally representative, as non-probability sampling was utilized, instead participants were passively obtained as individuals encountered the web-administered IPIP-NEO-120 measure themselves, or through word of mouth (Johnson, 2005, 2014; Kajonius, & Mac Giolla, 2017).

Table 1

Frequencies for the VES Sample on Each Demographic Variable (N = 77)

Variable	Frequency	Valid Percentage
VES Organisation		
Civil Defence	50	64.9
OMAC	20	26.0
Coastguard	2	2.6
Dundalk Sub Aqua Search and Rescue	5	6.5
Number of Vol. Organisations		
1		
2	66	85.7
3	9	11.7
	2	2.6
Job		
Non- ES Occupations	57	74.0
EMS	12	15.6
Fire	4	5.2
Police	1	1.3
Prison	1	1.3
Military	2	2.6

Design

The current study was cross-sectional and employed quantitative data analytic methods. Variables were not manipulated, and participants were not randomly assigned to groups therefore

the study did not imply causation. To investigate hypothesis 1, between group differences on trait scores of the Big Five personality traits (neuroticism, openness to experience, conscientiousness, agreeableness, and extroversion) were investigated among the volunteer participants and Irish community scores. Continuous independent/predictor variables for all hypotheses were scores on the IPIP-NEO-120 (appendix 2) (Johnson, 2014). Categorical dependent/criterion variables were, volunteer status (belonging to the control community group, or volunteer group) for hypotheses 1, and sex for hypothesis 4. While years of service, and weekly hours (in minutes for data analysis) spent volunteering were continuous variables in hypotheses 2 and 3.

Procedure

Participants were recruited through the officer in charge over each unit or branch, or the committee chairperson in the case of some organisations (appendix 3). Officers confirmed permission to recruit via email before recruitment began (appendices 8-11). This authority figure forwarded the Google Forms questionnaire link to all adult volunteers via the emailing list. Each participant was also required to give informed consent as part of the online questionnaire by ticking “Yes, I agree” (appendix 5). No aspect of the research involved deception, and the voluntary nature of participation was stressed. Participants were given information on the purpose, possible risks, and benefits, useful contacts for counselling, confidentiality, time commitment, and participant rights in the study. The contact details of the researcher and supervisor were also provided, and participants were encouraged to ask questions (appendix 4). The online questionnaire included seven sections. Section one required participants gave consent (appendix 5). Section two presented demographic questions, (appendix 7). Sections three to seven each questioned participants on one of the five personality traits (neuroticism, extroversion,

openness to experience, agreeableness, conscientiousness, respectively) (appendix 2).

Participants were provided with debriefing information following questionnaire completion, which approximately took between 10 and 15 minutes (appendix 6). Participants were informed that the removal of data following questionnaire submission was impossible, due to data being fully anonymised.

Measures/Materials

The self-report questionnaire included demographic questions which investigated variables such as sex, length of service, age, weekly hours volunteering, naming the organisations one is involved with, volunteer status, and to specify the career field of the emergency services one is/was employed with (if applicable) (appendix 7). An example was “What is your sex?” These demographic questions were presented following the participant’s information document (appendix 4). A range of question response types were utilized, such as short and long written answers, Likert rating scales, and tick box options. The personality questionnaire was the International Personality Item Pool-NEO-120, (IPIP-NEO-120; Johnson, 2014) (appendix 2), which was a free 120-item public domain inventory questionnaire of the five major traits and thirty facets of the five-factor model, shortened from other questionnaires (IPIP- NEO-300; Goldberg, 1999). The IPIP-NEO-120 and IPIP- NEO-300 assess facets similar to measures utilized by other rescue personality researchers (Wagner 2009), such as the NEO Five Factor Inventory (NEO-FFI; Costa & McCrae, 1992). The NEO-FFI was not used as it required purchase, and no funding had been secured.

The IPIP-NEO-120 was developed based on data from four samples, the Eugene-Springfield community sample (N = 481) (Goldberg, 2008; Johnson, 2014), a local sample (N =

160), and two internet samples (N = 307,313, and N = 619,150) (Johnson, 2014). The Cronbach's alpha reliability scores were at a satisfactory level (DeVellis, 2003), r for each trait $>.82$ (neuroticism $r = .90$, extraversion $r = .89$, openness $r = .83$, agreeableness $r = .87$, and conscientiousness $r = .90$) (Johnson, 2014). As a result of the measure evaluating similar traits to the NEO-PI-R and NEO-FFI (Costa & McCrae, 1992), validity of the IPIP-NEO-120 was calculated as a correlation with corresponding trait facets of the NEO-PI-R, (neuroticism $r = .87$, extraversion $r = .85$, openness $r = .84$, agreeableness $r = .76$, and conscientiousness $r = .80$) (Johnson, 2014). In the VES sample reliability was neuroticism $r = .82$, extraversion $r = .87$, openness $r = .83$, agreeableness $r = .83$, and conscientiousness $r = .88$ and this remained satisfactory $>.80$ for the scale if each individual item were deleted. Finally, in the Irish community sample reliability was neuroticism $r = .91$, extraversion $r = .88$, openness $r = .81$, agreeableness $r = .85$, and conscientiousness $r = .91$ (Kajonius, & Mac Giolla, 2017).

On the IPIP-NEO-120, an example of an item measuring neuroticism was "Dislike myself". Extraversion was measured using items such as "Avoid crowds". Openness was assessed with items such as "Dislike changes". Agreeableness items of the IPIP-NEO-120 included "Trust others". An example of an item measuring conscientiousness was "Break rules" (appendix 2). The questionnaire involves rating how accurately a statement describes the individual, using a Likert scale, (1= very inaccurate, 2= moderately inaccurate, 3= neither inaccurate nor accurate, 4= moderately accurate, 5= very accurate) Each major trait was measured on six facets, each of which were allocated four items, therefore minimum score was 24 and maximum was 120. There was not an equal number of positively and negatively coded items. 65 items were positively coded, in this case meaning that a score of 4 or 5 indicate higher

levels of the respective major trait. Whereas, 55 items were negatively coded, meaning that a score of 1 or 2 indicate higher levels of the respective major trait. All negatively coded items were recoded using SPSS 24 following data collection.

Data Analysis

Hypothesis 1 was investigated firstly using independent samples t-tests to ascertain whether the VES sample differs from the community sample (DV) on each trait (IVs). Secondly, a binary logistic regression further investigated the predictive power of personality traits (PVs), for belonging to the VES or community sample (CV). The relationships between years of service and trait score (hypothesis 2), and weekly minutes volunteering and trait score (hypothesis 3) were tested using bivariate correlation analyses. Hypothesis 4 was assessed using independent samples t-tests, for males and females (DV) on each trait (IV).

Results

Descriptive Statistics

Descriptive statistics for each of the measured variables in the current study are presented in Table 2. Among the VES sample preliminary analysis indicated that all personality traits approximated normality, with only openness violating the Shapiro-Wilk test however examination of skew and kurtosis values, histogram of frequency values, and Q-Q plots indicated that openness was relatively normally distributed. On average the current sample has been volunteering with emergency service organisations for approximately 12 years, and volunteers for 5 hours per week, however the large standard deviations suggest a good deal of variability around these figures. Years of service and minutes of weekly volunteering levels were low-to-moderate. Extraversion, openness, agreeableness, and conscientiousness were high in the sample, while neuroticism was comparatively low. For a description of the community sample, see Kajonius, and Mac Giolla, (2017).

Table 2

*Descriptive Statistics of all Continuous Variables of the Volunteer Emergency Service (VES)
Sample (N=77)*

	Mean (95% Confidence Intervals)	Std. Error Mean	Median	SD	Range
Age	38.18 (34.94-41.43)	1.63	37	14.20	18-71
Year of Service	11.88 (9.54-14.22)	1.17	9	10.23	1-54
Time Volunteering Weekly	308.29 (249.63-366.95)	29.45	240	256.70	30- 1200
Neuroticism	53.43 (50.86-56.00)	1.29	54	11.25	29-86
Extraversion	85.99 (83.23-88.75)	1.39	86	12.08	54-109
Openness	75.45 (72.67-78.22)	1.39	73	12.14	47-111
Agreeableness	100.12 (97.95-102.29)	1.09	101	9.50	72-118
Conscientiousness	98.09 (95.47-100.71)	1.32	99	11.47	69-119

Note. Time Volunteering Weekly = Number of minutes individuals report engaged in emergency volunteering per week.

Table 3

Descriptive Statistics of all Continuous Variables of the Community Sample (N=2846) (Kajonius, & Mac Giolla, 2017)

	Mean (95% Confidence Intervals)	Std. Error Mean	Median	SD	Range
Age	28.13 (27.79- 28.46)	.17	25	9.02	19-66
Neuroticism	69.37 (68.75-70.00)	.32	69	17.03	24-120
Extraversion	81.74 (81.22-82.26)	.27	83	14.16	32-120
Openness	86.58 (86.14-87.01)	.22	87	11.08	47-120
Agreeableness	87.34 (86.92-87.76)	.22	88	11.49	27-115
Conscientiousness	84.20 (83.63-84.77)	.29	84	15.58	28-120

Inferential Statistics

Hypothesis 1

Independent Samples T-tests

Five independent samples t-tests were conducted to compare personality trait scores between the VES sample and the Irish community sample (Kajonius, & Mac Giolla, 2017). Bonferoni adjustments were made to correct for multiple analyses, the adjusted p-value is $p < .001$. There was a significant difference in scores between the two groups on neuroticism, $t(85.80) = -12.18$, $p = .00$, two-tailed with VES ($M = 53.43$, $SD = 11.25$) scoring lower than community (M

= 69.37, SD = 17.03). The magnitude of the differences in the means (mean difference = -16.02, 95% CI: -18.64 to -13.40) was very large (Cohen's $d = 1.41$).

There was a non-significant difference in scores between the two groups on extraversion, $t(2921) = 2.56$, $p = .01$, two-tailed with VES ($M = 85.99$, $SD = 12.08$) scoring higher than Community ($M = 81.74$, $SD = 14.16$). The magnitude of the differences in the means (mean difference = 4.17, 95% CI: .98 to 7.37) was small (Cohen's $d = .30$).

There was a significant difference in scores between the two groups on openness, $t(2921) = -7.96$, $p = .00$, two-tailed with VES ($M = 75.45$, $SD = 12.14$) scoring lower than Community ($M = 86.58$, $SD = 11.80$). The magnitude of the differences in the means (mean difference = -10.85, 95% CI: -13.53 to -8.18) was large (Cohen's $d = .92$).

There was a significant difference in scores between the two groups on agreeableness, $t(82.18) = 11.69$, $p = .00$, two-tailed with VES ($M = 100.12$, $SD = 9.50$) scoring higher than community ($M = 87.34$, $SD = 11.49$). The magnitude of the differences in the means (mean difference = 12.86, 95% CI: 10.67 to 15.04) was very large (Cohen's $d = .135$).

There was a significant difference in scores between the two groups on conscientiousness, $t(83.78) = 10.48$, $p = .00$, two-tailed with VES ($M = 98.09$, $SD = 11.47$) scoring higher than community ($M = 84.20$, $SD = 15.58$). The magnitude of the differences in the means (mean difference = 14.03, 95% CI: 11.37 to 16.70) was very large (Cohen's $d = 1.21$).

Binary Logistic Regression

Binary logistic regression was performed to assess how well a model with five factors including Neuroticism, extraversion, openness, agreeableness, and conscientiousness could

predict volunteer status group membership (VES or community group) (table 5). The multicollinearity assumption was not violated, as correlations between PVs were $r < .90$.

The full model containing all predictors was statistically significant, $\chi^2(5, 2923) = 234.148, p = .00$. The model as a whole explained between 7.7% (Cox and Snell) and 35.6% (Nagelkerke) of the variance in belonging to VES group. The model demonstrated good overall predictive validity (97.5%), and demonstrated poor sensitivity (13.0%), but good specificity (99.8%).

Three predictor variables made a unique statistically significant contribution to the predicting of being in the VES (table 5). Neuroticism recorded an odds ratio (OR) of .95 (95% CI = .93 – .97), openness recorded an OR of .91 (95% CI = .89 – .93), and agreeableness recorded an OR of 1.17 (95% CI = 1.12 – 1.21). Decreased levels of neuroticism, and openness, and increased levels of agreeableness, were associated with an increased likelihood of being a member of the VES.

Table 4

Logistic Regressions Predicting Volunteer Status

Variable	B	SE	WALD	P	OR (95% CI)
Neuroticism	-.05	.01	19.31	.00	.95(.93-.97)
Extroversion	-.00	.01	.08	.78	1.00(.97-1.02)
Openness	-.09	.01	58.92	.00	.91(.89-.93)
Agreeableness	.15	.02	72.13	.00	1.17(1.12-1.21)
Conscientiousness	-.01	.01	.67	.41	.99(.97-1.01)

Note. Volunteer Status = whether an individual belongs to the VES or community sample. B= unstandardized Beta value; SE= standard error for B; P= statistical significance, OR (95% CI) = odds ratio with 95% confidence interval.

*Hypothesis 2**Correlations*

The relationship between years of service and personality trait scores were investigated using Pearson product-moment correlation coefficient. Results indicate that more years of service are associated with higher levels of openness, agreeableness, and conscientiousness, but lower levels of neuroticism and extraversion. All findings were non-significant ($p > .23$); therefore, the H_0 is accepted for all personality variables.

Table 5

Correlations between Years of Service in the VES, and all Personality Variables

Variables	1	2	3	4	5	6
1. Years of Service	1					
2. Neuroticism	-.18	1				
3. Extraversion	-.09	-.50***	1			
4. Openness	.001	-.31**	.25*	1		
5. Agreeableness	.03	-.11	-.003	.21	1	
6. Conscientiousness	.09	-.26*	.30**	.13	.50***	1

Note. Statistical significance: * $p < .05$; ** $p < .01$; *** $p < .001$

*Hypothesis 3**Correlations*

The relationship between weekly minutes spent volunteering and personality trait scores were investigated using Pearson product-moment correlation coefficient. Results indicate that more minutes spent emergency volunteering per week are associated with higher levels of neuroticism, extraversion, openness, agreeableness, and conscientiousness. All findings were non-significant ($p > .08$); therefore, the H_0 is accepted for all personality variables.

Table 6

Correlations between Time Spent Emergency Volunteering per Week (in minutes) and all Personality Variables

Variables	1	2	3	4	5	6
1. Time Volunteering Weekly	1					
2. Neuroticism	.03	1				
3. Extraversion	.20	-.50***	1			
4. Openness	.12	-.31**	.25*	1		
5. Agreeableness	.08	-.11	-.003	.21	1	
6. Conscientiousness	.09	-.26*	.30**	.13	.50***	1

Note. Time Volunteering Weekly = number of minutes per week that individuals reported engaging in emergency volunteering. Statistical significance: * $p < .05$; ** $p < .01$; *** $p < .001$

Hypothesis 4

Independent Samples T-tests

Five independent samples t-tests were conducted to compare personality trait scores between VES males and females. There was a non-significant difference in scores between the two groups on neuroticism, $t(75) = .34$, $p = .73$, two-tailed with males ($M = 53.65$, $SD = 11.65$) scoring higher than females ($M = 52.72$, $SD = 10.39$). The magnitude of the differences in the means (mean difference = .93, 95% CI: -4.53 to -6.40) was very small (Cohen's $d = .1$).

There was a non-significant difference in scores between the two groups on extraversion, $t(75) = -.61$, $p = .54$, two-tailed with males ($M = 85.33$, $SD = 12.74$) scoring lower than females ($M = 87.12$, $SD = 10.48$). The magnitude of the differences in the means (mean difference = -1.79 95% CI: -7.64 to -4.06) was small (Cohen's $d = .2$).

There was a significant difference in scores between the two groups on openness, $t(32.39) = -2.86$, $p = .01$, two-tailed with males ($M = 72.63$, $SD = 9.16$) scoring lower than females ($M = 82.16$, $SD = 15.42$). The magnitude of the differences in the means (mean difference = -9.53 , 95% CI: -16.32 to -2.73) was medium to large (Cohen's $d = .7$).

There was a significant difference in scores between the two groups on agreeableness, $t(75) = -3.83$, $p = .00$, two-tailed with males ($M = 97.56$, $SD = 9.13$) scoring lower than females ($M = 105.68$, $SD = 7.76$). The magnitude of the differences in the means (mean difference = -8.12 , 95% CI: -12.35 to -3.90) was large (Cohen's $d = .8$).

There was a non-significant difference in scores between the two groups on conscientiousness, $t(75) = -1.93$, $p = .06$, two-tailed with males ($M = 96.52$, $SD = 11.08$) scoring lower than females ($M = 101.80$, $SD = 11.66$). The magnitude of the differences in the means (mean difference = -5.28 , 95% CI: -10.74 to $.18$) was medium (Cohen's $d = .5$).

Discussion

An objective of the current research was to address some problems with RP literature, such as have been reviewed above. It was aimed that the current study would add cross-sectional evidence to the literature on RP theory in an Irish VES sample. It was also intended that both the VES sample trait scores on the IPIP-NEO-120 (Johnson, 2014), would be contrasted with an Irish community internet sample included in a previous piece of research (Kajonius, & Mac Giolla, 2017). Furthermore, the study would go some way in testing the predispositional nature of RP, through the investigation of the cross-sectional relationship between FFM personality trait score and two socialisation variables. Years of service and weekly time spent volunteering with the ES, acted as measures of level of socialisation. To address the question of gender difference, which has been raised in the literature, this was also tested in the current piece. This study investigated four hypotheses; three hypotheses were non-causal, directional (hypotheses 1, 2 and 3), and the fourth was non-causal, non-directional due to the lack of research among RP occupations specifically that address gender difference (hypothesis 4).

The hypotheses of the current study stated that the VES participants would score higher on extroversion, agreeableness, and conscientiousness, but lower on neuroticism, and openness than an Irish community sample (hypothesis 1). Furthermore, neither years of service nor time spent volunteering (in weekly minutes) would be associated with personality trait scores (hypothesis 2 and 3). Finally, it was predicted that VES females and males would differ in some way on personality trait scores (hypothesis 4).

In regard to hypothesis 1, it was found that evidence of RP was apparent among the VES sample, as such individuals scored lower on neuroticism, and openness, but higher on

agreeableness, conscientiousness, and slightly higher on extraversion, than the community sample. This finding is consistent with postulations made by Klee and Renner (2013 & 2016), in addition to the findings of certain studies (King, et al., 1997), and leads to hypothesis 1 being accepted (although VES were not significantly higher on extraversion to the community sample).

The trait that displays the most inconsistencies in findings in the body of literature is agreeableness, as on each other trait of the five-factor model displays similar results in all of the proceeding studies mentioned. Paradoxically to RP theory, agreeableness was found to be lower among emergency medical workers (Klee, & Renner, 2013), firefighters, and police officers (Wagner, et al., 2009), soldiers (Klee, & Renner, 2016), and Airforce pilots (Callister, et al., 1999). In addition, a meta-analysis of 18 studies found this pattern of lower agreeableness among ES to be consistent (Castaneda, 2007). However, these meta-analytic findings must be considered cautiously, as this difference on agreeableness has been accounted for as a measurement issue, through the use of big-five measures with differing personality facets. Upon more in-depth analysis showed higher levels of traits consistent with the description provided in rescue personality, such as altruism, and helping (Klee, & Renner, 2013).

However, in the current study, extraversion was the only trait found not to be significantly different between the samples, this is consistent with findings among EMS employees and volunteers (Klee, & Renner, 2013), but also stark in contrast to the findings of (Salters-Pedneault, et al., 2010 & Wagner, et al., 2009). In which extraversion was the only trait found significantly different between paramedics and firefighters, and police and firefighters respectively (Salters-Pedneault, et al., 2010 & Wagner, et al., 2009). These are interesting asymmetries in findings and perhaps reflects some level of difference between the samples used in the two studies such as

cultural (McCrae, & Terracciano, 2005), or occupation-based differences (Paton, 2003). If this is the case, there is serious provision for amendments to be made to RP theory, which currently would only suggest that cross-culturally all career or voluntary EMS, police or fire service workers display RP.

However, further findings on hypothesis 1 offer a certain degree of support for the theory, as the regression model suggests that personality trait score successfully predicted whether an individual was from the VES or Irish community samples. Being low on neuroticism and openness while also high on agreeableness was found to be associated with an increased likelihood of being a member of the VES, however it is vital to iterate that due to the cross-sectional nature of the current research, causation is not assumed in the above relationship. Furthermore, the above findings must be considered cautiously as it is possible that results are an over-estimation of the differences between the Irish general public and the VES at a population level.

As a result of the VES sample not being similar to the community sample on a number of important factors which in general have been shown to be associated with differing personality trait scores, including age (Soto, John, Gosling, & Potter, 2011; Specht, Egloff, & Schmukle, 2011), and gender ratio (Schmitt, Voracek, Realo, & Allik, 2008). The proportion of males to females in the community sample was 1281:1565, but in the VES sample was 52:25. Additionally, a relatively small amount of variance was explained by the big five personality traits, indicating that there are a number of other factors that likely contribute to the reasons an individual would belong to the VES. Finally, regression percentage sensitivity findings support

this suggesting that the five-factor model is not the only predictor of belonging to the VES; however, it is a good predictor of those who are not in the VES (specificity).

For hypotheses 2 and 3, results simply indicate that as hypothesized, neither years of service nor time spent volunteering weekly were associated with personality trait score. Therefore, hypotheses 2 and 3 are accepted. This provides supports for claims made in the theory of RP, which would propose personality as a predispositional factor to engagement in the ES, as opposed to a socialisational factor (as would have been indicated by significant findings for the above hypotheses). Additionally the current finding supports previous literature examining years of service among EMS employees and volunteers (Klee, & Renner, 2013).

With regard to hypothesis 4, results indicate differences between male and female VES in the current sample. In the literature, there was limited reports of gender differences among ES groups (King, et al., 1997), which led to the creation of a non-causal, non-directional hypothesis. However, as previously stated, the body of knowledge highlighted with wavering confidence a pattern of females scoring lower than males on all traits, although findings were non-significant in certain instances (King, et al., 1997). This aforementioned pattern is common to non-ES research among very large samples, and remains consistent cross culturally (Schmitt, Voracek, Realo, & Allik, 2008).

In the current study, females were lower on all traits except neuroticism, and all differences were significant with medium to large effect sizes, except neuroticism and extraversion. While the finding of males scoring higher than females on neuroticism is directly contradictory to previous research (King, et al., 1997), the small sample size and the male dominated gender ratio in the sample (52:25), with females making up less than a third of VES

participants, must be highlighted as a possible explanation for the current findings. Furthermore, the magnitude of the difference between males and females was incredibly small, which suggests that in the current sample males and females did not differ hugely in levels of neuroticism, therefore hypothesis 4 is only partially accepted (four out of five traits displayed gender differences).

The current study has a number of limitations, which impact upon the reliability and generalisability of these findings, in addition to providing goals for future research to improve upon the current design. These limitations include the small size of the VES sample, especially in comparison to the large Irish community sample (Kajonius, & Mac Giolla, 2017). This affects the generalisability of findings, therefore it is suggested that future research attempts to replicate the current research among a larger group of Irish VES and ES participants. Another implication of the small sample size is that many analyses could not be carried out, in particular on the group of VES who were also career ES, as $n=20$. This sample size is in breach of guidelines on the minimum number of participants per PV which would need to be 50 (10x5) for logistic regression analyses (Hosmer, & Lemeshow, 2000). Previous research has highlighted the need for study of differences between ES occupations, however due to sample size restrictions these analyses could not be carried out.

Another limitation related to sampling is that no effort was made to ensure that the VES and community samples were similar in terms of demographic factors such as age and gender proportion. This is the result of the use of convenience sampling, and brings the findings of the comparative analyses into question due to the possible impact of demographic differences (Schmitt, Voracek, Realo, & Allik, 2008; Soto, John, Gosling, & Potter, 2011; Specht, Egloff, &

Schmukle, 2011). Even analyses carried out within the VES sample are vulnerable to the impact of the lack of female participants (32.5%), this however reflects the reality of volunteer gender ratio within certain VES organisations. For example, the Irish Civil Defence reports that 27% of active volunteers are female (approximately 945 individuals), and 73% male (approximately 2555 individuals). The Drogheda Coastguard unit is 10% female, 90% male. By considering the current sample within this context, the VES sample has a greater proportion of females than is reported in the aforementioned organisations.

Further limitations of the current study are the cross-sectional design, which therefore means causation cannot be implied with regard to any of the aforementioned findings. However, the finding of no relationship between either years of service or weekly minutes of volunteering, and the personality traits does suggest a predispositional rather than socialisation model of rescue personality (Klee, & Renner, 2013), although longitudinal research is needed to confirm this. Another possible limitation is the use of a self-report measure, which may influence responses; nevertheless, this measure type is common in personality research, and is arguably more accurate than self-estimated measures, or third person rating (McCrae, & Terracciano, 2005). It is also important to note that data on participant occupation/hobbies were not collected in the community sample, and therefore it could not be ruled out that a proportion of this sample were/are either employed in ES or engage in the VES (Kajonius, & Mac Giolla, 2017), therefore the two samples may not be mutually exclusive.

While taking into account the above limitations, it is also important to discuss the significance these findings may have cautiously, and implications for research, theory, policy makers, and clinicians. Research such as the current study, which highlights the low levels of

openness among ES volunteers, has implications in considerations made in the development and implementation of interventions, as a traditionalist outlook may display hostility toward intervention (Klee, et al., 2013). Additionally, the finding of high extraversion (although non-significant in the current study), may be reflective of a competitive, risk-taking, and excitement-seeking tendency of those in the EMS. These traits may facilitate job success in such roles, but also has further implications for training, in prioritising safety for the public and practitioner, while operating vehicles, weapons, or emergency equipment, for example (Klee, & Renner, 2013).

Preliminary suggestions are made that personality could play a role in the relationship between volunteerism and various positive outcomes which volunteering has been associated with, for example life satisfaction. Widespread findings suggest that life satisfaction is a beneficial outcome of volunteering (Finkelstein, Penner, & Brannick, 2005; Grant, 2012). However, only very limited evidence to date has supported the above preliminary suggestion, as personality was found to significantly predict life satisfaction among student volunteers (Buchanan, & Bardi, 2010). In addition, this relationship is evident among VES also, as Veerasamy, Sambasivan, and Kumar found, using a sample of a thousand Malaysian, St John Ambulance volunteers (2015). The five-factor model of personality was investigated among volunteers, as a predictor of a life satisfaction outcome, however only neuroticism significantly (negatively) predicted life satisfaction score. A number of limitations of the above study were highlighted, such as the use of a ten-item personality measure (with only two-items per major personality trait), and the representativeness of the sample (1,000 participants from a volunteer population of 36,000) (Veerasamy, Sambasivan, & Kumar, 2015). Therefore, if personality

predicts volunteerism and life satisfaction, while volunteerism also predicts life satisfaction as in the aforementioned example, it is possible that personality is mediating the relationship between volunteerism and life satisfaction. Based on this, further research is vital to test this hypothesis, and that similarly measures the five-factor model and other beneficial outcomes of volunteering, while also improving on the research designs of past studies. This has research and theoretical implications.

The current study has further implications for future research directions. It is suggested that future research go beyond the five-factors, and test the other aspects of the RP framework, such as the individual trait facets to get a more in-depth understanding of the inclinations and characteristics of the ES, and avoid conflicting results on major traits as discussed above with regard to agreeableness. Other aspects of RP that future research must examine are motivation, responses to stress, and leisure activities and behaviour, (Klee, & Renner, 2013; Mitchell, 1983; Mitchell, & Bray, 1990), perhaps also creating, and testing the whole RP framework as a regression model.

Additionally, future research must aim to expand the occupations included in RP, and examine other similar occupations, as it has been found that for example those in the military (Klee, et al. 2016), and Airforce (Callister, et al., 1999; King, et al., 1997) display RP. Despite these findings, the theory only postulates the inclusion of EMS, police, and firefighters as ES occupations that would display a RP (Wagner, 2009). Furthermore, future research should examine differences between the ES careers as have been suggested that caution be exercised in grouping all ES occupations together (Paton, 2003), as evidenced by occupational differences that have been found between paramedics and firefighters (Fannin & Dabbs, 2003), and between

firefighters, and police officers (Salters-Pedneault, et al., 2010). This analysis could not be carried out in the current career ES sample due to the sample size; however, it is a possible explanation for the above findings, such that the different VES organisations are involved in difference ES style activities such as medical, fire, and search and rescue.

Future research should also be conducted longitudinally to test the predisposition model proposed (Mitchell, 1983; Mitchell, & Bray, 1990), such that perhaps individuals with different personality inclinations are motivated to join certain VES or ES occupations. The above postulation is partially consistent with recent vocational choice theory. This suggests that at first, an individual is predisposed to join a particular occupation, but following this, certain occupational socialisations are associated with changes in personality trait levels (Roberts, Caspi, & Moffit, 2003). Whether an individual's traits are predisposed or a result of socialisations or a combination of both has implications for research and theory.

Personality also has a number of implications for an individual's health, wellbeing, and outcomes, which are highly relevant to policy makers in ES and VES organisations. ES workers encounter traumatic events regularly, and therefore can experience occupational stress. Research has highlighted a number of risk factors (pre-, peri-, and post-trauma) for the development of PTSD (Kessler, et al., 2014). These findings are highly important in creating a risk profile for PTSD. Personality trait levels can be associated with both positive and negative outcomes, for example high extraversion has been linked with posttraumatic growth (Sheikh, 2003), and more recently low extraversion predicts depression and the development of PTSD (Pajonk, Cransac, Teichmann, & Weth, 2010). Furthermore, a systematic review of over thirty years of research has found a negative relationship between both extraversion, and conscientiousness, and the

development of PTSD (Jakšić, Brajković, Ivezić, Topić, & Jakovljević, 2012). This paper highlights the value of personality as one element of a model explaining the development of arguably one of the most controversial psychiatric conditions (PTSD) (Jakšić, et al., 2012), therefore, it is important to investigate the personality of ES personnel who are exposed to traumatic events regularly.

Other such risk factors unsurprisingly include neuroticism, which predicts depression following life trauma (Fava, & Kendler, 2000), and the development of PTSD itself (Jakšić, et al., 2012), but also negative affective cognitions, lack of social support and high life stress (Kessler, et al., 2014). Risk factor research for PTSD has other implications for intervention techniques. 'Gold Standard' clinical practice guidelines now suggest that humans have a natural resiliency, which could be negatively impacted by the use of debriefing, instead achieving re-traumatisation (NICE, 2005). This is one pillar of the argument against CISD techniques (Wagner, 2005a, 2005b). Instead it is suggested that 'Wait and Watch' methods are employed (monitor recovery, and if deterioration is reported intervene at that point) (NICE, 2005). This practice stems from the robust findings that worldwide 70.4% of individuals encounter traumatic life events (Benjet, et al., 2016), however estimates suggest that up to 90% recover from Post-Traumatic Stress symptoms within six months (Monson, & Friedman, 2006).

One further strategy that is recommended for both pre and post trauma, is social support (Brewin, Andrews, & Valentine, 2000; Ozer, Best, Lipsey, & Weiss, 2003). Well-developed support systems could easily be integrated into the CIS strategies of emergency organisations. However, one further complication may be that an individual's subjective evaluation of social support could be more important than the support itself (i.e. loneliness) (George, Blazer, Hughes,

& Fowler, 1989). Fortunately, elements of social support have already been integrated into the intervention strategies of many VES and ES organisations (Civil Defence, 2018). Qualitative research indicates the ranging benefits of this, as volunteer firefighters rely on social support, culture, meaning making, leadership, knowledge and personal resources to aid with resilience in facing potentially traumatising events (Blaney, 2017).

In conclusion, the current study has found evidence of RP theory among a group that may not previously have been studied on personality scores (according to the lack of research found for the literature review), Irish VES organisations. This sample was contrasted with a very large Irish community sample to investigate the aforementioned (Kajonius, & Mac Giolla, 2017). Furthermore, the current research examined sex differences among the VES sample as was called for by previous researchers (King, et al., 1997). It was found that patterns similar to that in general population samples were evident, as females scored higher or almost higher on each big five trait. Finally, the current study has addressed a controversial gap in the literature surrounding the predisposition vs. socialisation debate, using cross-sectional data, which has rarely been tackled in the literature (Klee, et al, 2013). Socialisation variables (years of service, and time volunteering weekly) were not associated with personality score, which provides reinforcement for the predisposition model, and therefore is of importance to vocational choice researchers. All hypotheses were accepted or at least partially accepted (hypothesis 4), and possible explanations for findings were provided. Future research directions based on the limitations of the current study were suggested, and the possibility of personality mediating volunteerism and positive health outcomes, is proposed. Finally, preliminary implications in ES training, support, and crisis intervention were also discussed.

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Appendix

Appendix 1 – Table of Theories of Involvement Typology of, and commitment to Volunteerism from (Britton, 1991)

Group	Theory	Research
Involvement Typology		
1.	Unconventional Vs. Conventional Participation	(Goel, & Smith, 1980; Smith, 1975)
2.	Formal Vs. Informal Voluntary Group Action	(Parkum, & Parkum, 1980; (Smith, et al., 1980)
3.	Institutionalised Vs. Noninstitutionalised Participation	(Parkum & Parkum, 1980)
4.	Accommodative Vs. Conflict Orientation	(Quarantelli, 1970)
5.	Primary Vs. Secondary Involvement	(Quarantelli, 1970)
6.	Service Vs. Change Orientated Function	(Kramer, 1981)
7.	Service Vs. Pressure Groups	(Murray, 1969)
8.	Normative Vs. Affective Commitment	(Knoke, & Prensky, 1984)

Degree of Commitment

- | | | |
|----|---|--|
| 1. | Active Vs. Inactive
Participation | (Goel, & Smith, 1980) |
| 2. | Planned Vs. Spontaneous
Help | (Pearce, & Amato, 1980) |
| 3. | Other Vs. Self-Initiated
Help
Direct Vs. Indirect | (Pearce, & Amato, 1980)
(Pearce, & Amato, 1980) |
| 4. | Intervention
Communal Vs. Parochial | (Goel, & Smith, 1980) |
| 5. | Participation
Sustained Vs. Nonspecific | (Gidron, 1980) |
| 6. | Volunteer Work | |
| 7. | High Vs. Low
Commitment | (Knoke, & Prensky, 1984) |
| 8. | Permanent Vs. Ephemeral
Volunteer | (Stoddard, 1969) |
-

Neuroticism

1. Anxiety

Worry about things

Fear for the worst

Am afraid of many things

Get stressed out easily

2. Anger

Get angry easily

Get irritated easily

Lose my temper

Am not easily annoyed

3. Depression

Often feel blue

Dislike myself

Am often down in the dumps

Feel comfortable with myself

4. Self-Consciousness

Find it difficult to approach others

Am afraid to draw attention to myself

Only feel comfortable with friends

Am not bothered by difficult social situations

5. Immoderation

Go on binges

Rarely overindulge

Easily resist temptations

Am able to control my cravings

6. Vulnerability

Panic easily

Become overwhelmed by events

Feel that I'm unable to deal with things

Remain calm under pressure

Extroversion

1. Friendliness

Make friends easily

Feel comfortable around people

Avoid contacts with others

Keep others at a distance

2. Gregariousness

Love large parties

Talk to a lot of different people at parties

Prefer to be alone

Avoid crowds

3. Assertiveness

Take charge

Try to lead others

Take control of things

Wait for others to lead the way

4. Activity level

Am always busy

Am always on the go

Do a lot in my spare time

Like to take it easy

5. Excitement Seeking

Love excitement

Seek adventure

Enjoy being reckless

Act wild and crazy

6. Cheerfulness

Radiate joy

Have a lot of fun

Love life

Look at the bright side of life

Openness to experience

1. Imagination

Have a vivid imagination

Enjoy wild flights of fantasy

Love to daydream

Like to get lost in thought

2. Artistic interests

Believe in the importance of art

See beauty in things that others might not notice

Do not like poetry

Do not enjoy going to art museums

3. Emotionality

Experience my emotions intensely

Feel others' emotions

Rarely notice my emotional reactions

Don't understand people who get emotional

4. Adventurousness

Prefer variety to routine

Prefer to stick with things that I know

Dislike changes

Am attached to conventional ways

5. Intellect

Love to read challenging material

Avoid philosophical discussions

Have difficulty understanding abstract ideas

Am not interested in theoretical discussions

6. Liberalism

Tend to vote for liberal political candidates

Believe that there is no absolute right or wrong

Tend to vote for conservative political candidates

Believe that we should be tough on crime

Agreeableness

1. Trust

Trust others

Believe that others have good intentions

Trust what people say

Distrust people

2. Morality

Use others for my own ends

Cheat to get ahead

Take advantage of others

Obstruct others' plans

3. Altruism

Love to help others

Am concerned about others

Am indifferent to the feelings of others

Take no time for others

4. Cooperation

Love a good fight

Yell at people

Insult people

Get back at others

5. Modesty

Believe that I am better than others

Think highly of myself

Have a high opinion of myself

Boast about my virtues

6. Sympathy

Sympathize with the homeless

Feel sympathy for those who are worse off than myself

Am not interested in other people's problems

Try not to think about the needy

Conscientiousness

1. Self-Efficacy

Complete tasks successfully

Excel in what I do

Handle tasks smoothly

Know how to get things done

2. Orderliness

Like to tidy up

Often forget to put things back in their proper place

Leave a mess in my room

Leave my belongings around

3. Dutifulness

Keep my promises

Tell the truth

Break rules

Break my promises

4. Achievement-striving

Work hard

Do more than what's expected of me

Do just enough work to get by

Put little time and effort into my work

5. Self-Discipline

Am always prepared

Carry out my plans

Waste my time

Have difficulty starting tasks

6. Cautiousness

Jump into things without thinking

Make rash decisions

Rush into things

Act without thinking

Rescue Personality among Civic Volunteers in Ireland; a Cross-sectional Study Using the Five-Factor Model

The proposed study will investigate the personality traits of first or second line response volunteers. Previous research suggests that frontline/emergency service workers or individuals in 'critical occupations' may differ from the general population, in terms of being outgoing, thorough, open-minded, calm, and pleasant. This project aims to see if this is the case in a number of organisations in an Irish context, across age, sex, experience level, and occupation.

Any voluntary member, over the age of 18, may participate in the online questionnaire. Individuals will be required to give informed consent prior to beginning the questionnaire, however participation is on a voluntary basis, and individuals are in no way obliged to take part. Participants will not be identified in the data, and no individual results will be released, instead all data will be analysed at a group level only.

Participation will involve answering some demographic questions (such as age, sex, occupation, no. of years volunteering, and average no. of hours per week spent volunteering with the organisation). Following this, the personality measure will be presented, in which individuals will indicate the accuracy with which a series of statements describe them. The measure will assess five major personality traits (extroversion, openness to experience, agreeableness, neuroticism and conscientiousness), and thirty facets of these major traits.

It is intended that the research be submitted for examination as an undergraduate thesis in 2018. The project has gained approval from the Ethical Review Board of National College of Ireland. Should you choose to give permission for the researcher to recruit among the volunteers in your organisation, the researcher will require email confirmation of permission from an officer in charge/leader. After this, the researcher will send the information document and questionnaire link via email to the organisation, which is to be forwarded among the emailing list of volunteers. The researcher wishes to thank you for your time in considering this issue.

Contact details

Researcher: Susan Mc Bride

Susan.McBride@student.ncirl.ie

Supervisor: Joanna Power

Joanna.power@ncirl.ie

Rescue Personality among Voluntary Emergency Services in Ireland; a Cross-sectional Study Using the Five-Factor Model

PROJECT SUMMARY

The current study will examine the personality traits of emergency front-line paid professionals and second line volunteers.

INVITATION

You are being asked to take part in a research study on the personality traits of emergency volunteers. Previous research suggests that frontline/emergency service workers/individuals in ‘critical occupations’ may differ from the general population, in terms of being outgoing, thorough, open-minded, calm, and pleasant. This project aims to see if this is the case among Irish organisations, across age, sex, experience level, and occupation.

Susan Mc Bride, a Psychology student from National College of Ireland, under the supervision of Dr Joanna Power, undertakes this research project. The project has obtained approval from the Research Ethics Committee of the College. It is intended that the research be submitted for examination as an undergraduate thesis.

WHAT WILL HAPPEN

If you choose to participate in the research, you will be required to give consent and answer some questions about yourself, and your time with your volunteer organisation, as well as being given a personality survey. This questionnaire will involve rating how accurately the statement describes you, (by ticking the box beside either, Very Inaccurate, Moderately Inaccurate, etc.). An example of the statement could be “I like to tidy up”.

TIME COMMITMENT

The questionnaire will take approximately **10 - 15 minutes**. Should you choose to participate, please complete the survey only **ONCE**. The questionnaire will be closed to responses after February 25th, when recruitment finishes.

PARTICIPANTS’ RIGHTS

Firstly, you are under no obligation to take part in this research, however if you do choose to, you may decide to stop participating in the study at any time without explanation, by exiting out of the questionnaire. The researcher will need your consent to use, store and analyse the data you provide.

You have the right to have your questions about the study answered. If you have any questions as a result of reading this information sheet, you are invited to contact the researcher before the study begins, using the contact details given below.

BENEFITS AND RISKS

There are no known benefits for you as a result of participating in this study. However, it must be pointed out that some questions involve mood. In the unlikely event that the contents of the questionnaire causes upset or distress, you may contact Samaritans' 24-hour helpline: 116 123 or (for Civil Defence volunteers only) Inspire (formerly known as Carecall) is available 24/7, 365 days a year on 1800 409 673, for free confidential counselling.

COST, REIMBURSEMENT AND COMPENSATION

Your participation in this study is voluntary, and you will receive no payment or reward in return for your participation.

CONFIDENTIALITY/ANONYMITY

You will not be asked to identify yourself (e.g. names, addresses, contact details). During data collection, each participant will be assigned an arbitrary number, therefore making your responses fully anonymous. Since data are anonymised at point of collection, it will not be possible to identify and withdraw your data from analysis once it has been submitted.

The data will be analysed and written up as part of the current study, and submitted as an undergraduate thesis. There is also a possibility of the findings being presented at conferences or published, however individual participants will not be identifiable.

FOR FURTHER INFORMATION

The researcher, Susan Mc Bride, will be glad to answer your questions about this study, or should you wish to find out about the findings of the research, contact Susan.McBride@student.ncirl.ie. In addition, the supervisor Dr Joanna Power, is also available at Joanna.power@ncirl.ie should you have queries.

Questionnaire link

<https://goo.gl/forms/yOgpWS6L80DRTdrI2>

Appendix 5 – Consent Question from Online Questionnaire

Do you give your consent to participate in the current study?

By ticking "Yes, I agree" below, you are agreeing that: (1) you have read and understood the Participant Information Sheet, (2) any questions about your participation in this study have been answered satisfactorily, (3) you are aware of the potential risks (if any), (4) you are 18 or over, and (5) you are taking part in this research study voluntarily (without coercion).

- Yes, I agree

Appendix 6 – Participant Debriefing Information

THANK YOU

The researcher wishes to extend sincere thanks to all those who participated in the study. Please be reassured that your responses will be dealt with anonymously.

STUDY PURPOSE

It is hoped that you enjoyed the study, and perhaps found it interesting. To reiterate, the purpose of the current study is to examine whether emergency volunteers differ in terms of personality traits when compared to the general population. In addition, examining differences in personality among the various occupations in the paid, front-line/emergency/critical occupations.

ISSUES/QUESTIONS

If as a result of your participation in the research, you experience any upset or distress, please contact Samaritans' 24-hour helpline: 116 123, or Inspire (formerly known as Carecall) on 1800 409 673 (for Civil Defence Volunteers only). If you have any questions, queries or concerns you may contact the researcher or supervisor using the contact details given below.

CONTACT DETAILS

RESEARCHER

Susan Mc Bride

Email: Susan.McBride@student.ncirl.ie

SUPERVISOR

Dr Joanna Power

Email: Joanna.power@ncirl.ie

Appendix 7 – Demographic Questions

What age are you (in years)?

What is your sex?

How many years in total have you been volunteering with organisations such as Civil Defence, Red Cross, St John Ambulance, Order of Malta, Coast Guard, RNLI Lifeboats, Rescue and Recovery Diving units, etc.?

Please name the organisations with which you (currently or previously) volunteer.

How many hours (on average) per week do you spend volunteering with these organisations?

Are/were you a paid employee in any of the following: police, fire, prison, or emergency medical services, Army, Navy, or Air Force etc.?

- Yes
- No

If yes, please specify

Appendix 8 – Permission Letter for Recruiting Among Civil Defence Volunteers



Comhairle Contae Lú
Louth County Council

Susan McBride,
Balriggeran,
Kilcurry,
Dundalk,
Co. Louth

20/11/2017

Dear Susan,

I am writing in response to your proposal to enlist Civil Defence volunteers in your study and I am pleased to confirm that I am happy for you to go ahead subject to the following conditions

- All communications to other counties must be relayed through me
- You will not be making individual contact with any participants without prior permission
- Participants will be given the details of Carecall

I would like to wish you the best of luck in your study and would be very interested in seeing the results.

If I can be of any further assistance, please don't hesitate to contact me.

Yours Sincerely,

Chris Connolly
Civil Defence Officer
Louth County Council

Comhairle Contae Lú
Halla an Chontae
Ionad na Mílaoise
Dún Dealgan
Contae Lú
A91 KPW6

Louth County Council
County Hall
Millennium Centre
Dundalk
County Louth
A91 KPW6

Locall 1890 202303
T + 353 42 9335457
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E info@louthcoco.ie
W www.louthcoco.ie

Cuirfeair fáilte roimh chomhfhreagras Gaeilge - Correspondence in Irish is welcome



joanne murphy
to Susan Mc Bride

25 Jan



Hi Susan

Having discussed your request with the committee they have given me permission to go ahead and forward your questionnaire to the relevant members of the club (ie those members involved in the Search and Recovery Unit within the club).

Please feel free to forward whatever information you would like me to pass on to our members and I will in turn contact our members on your behalf.

Regards

Joanne Murphy
Chairperson
Dundalk Sub Aqua Club

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Appendix 10 – Permission Email Confirming Permission to Recruit among Drogheda Coastguard Volunteers



Dermot McConnoran
to Susan Mc Bride

27 Jan



Hi Susan,

Sorry for the delay in getting back to you.
I have no problem with your study involving
the Drogheda Coast Guard volunteers.
Will I forward your email to the group?

Regards

Dermot McConnoran
Officer in Charge
Drogheda Coast Guard unit

Sent from my iPhone

...

Appendix 11 – Recruitment Permission Email for Order of Malta Ambulance Corps (OMAC)

Susan

I refer to your request to contact Order of Malta Ireland volunteers seeking their participation in your research study on the personality traits of emergency volunteers as part of your undergraduate studies in Psychology at the National College of Ireland, Dublin.

Order of Malta Ireland are pleased to facilitate your request and to permit you to make direct contact with Ambulance Corps Unit Officers by email. You will find email contacts for our Units at <http://www.orderofmaltaireland.org/ambulance-corps/ambulance-corps-unit-map/>

You may use this email as confirmation that you have been granted permission to request our members to participate in the study.

I wish you well with your research.

Peadar Ward
CEO

SAVING LIVES. TOUCHING LIVES.
CHANGING LIVES.

**Order of Malta Ireland, St. John's House, 32 Clyde
Road, Ballsbridge, Dublin 4**
T: (+353) [1 643 00 00](tel:16430000) | D: (+353) [1 614 00 36](tel:16140036) |
E: ceo@orderofmalta.ie |
www.orderofmaltaireland.org

Charity Numbers

Ireland: CHY No. CHY4538 Northern Ireland: Accepted
by HMRC under reference XR[40765](https://www.hmrc.gov.uk/vat/charities/40765)