



Journal of Articles in Support of the Null Hypothesis

Vol. 17, No. 2

Copyright 2021 by Reysen Group. 1539–8714

www.jasnh.com

Investigating the Effect of Locus of Control, Sex and Age on Perceptions of Petty Crime

Lisa Brown

Social Work Service, Fife Council

Jennifer Murray

School of Health and Social Care, Edinburgh Napier University

The present research investigated locus of control, sex and age to identify which influenced crime perceptions and to what extent. A 2 (internal versus external locus of control) \times 2 (male versus female) \times 3 (young, middle and older adult) between groups' design was used. Sixty participants completed Rotter's (1966) Locus of Control Questionnaire and a perceptions of crime questionnaire. A 3 \times 2 \times 2 MANOVA was conducted. Only one main effect of sex was present, with males reporting themselves to be less likely to report suspicious behaviour than females. No other main effects were present across the remaining eight crime perception questions. Only one significant interaction existed, which suggested that older males and younger females were in favour of increased punishment for petty crimes. When investigating petty crime perceptions, locus of control is a less important consideration than sex and age differences.

Keywords: crime perceptions, locus of control, sex, age comparison, causality

Author Note

Correspondence concerning this article should be addressed to Dr Jennifer Murray, School of Health and Social Care, Edinburgh Napier University, Sighthill Campus, Sighthill Court, Edinburgh, EH11 4BN. Email: j.murray2@napier.ac.uk

Locus of control has been identified as an important influence on perceptions of crime and related punitive decision making (e.g., Murray, Thomson, Cooke, & Charles, 2011; Murray, Charles, Cooke, & Thomson, 2014; Quinsey & Cyr, 1986). Locus of control (Rotter, 1996) is a psychological construct often attributed to an aspect of a person's personality, which relates to the person's beliefs about how much control they have over their lives and the things that happen to them (Goddard, 2012). In this theory, people can have an internal locus of control (where they believe that things which happen are within their power to affect and change) or an external locus of control (where things that happen are due to something outwith their direct control).

Much previous research in the area of locus of control and crime perceptions has not focused on locus of control as a single construct, but instead investigated it as an element of attribution (i.e., the way in which people allocate blame or a 'cause' to a behaviour, often categorised as either being caused by a factor within a person's control or outwith their control; Heider, 1958). Indeed, within Murray et al.'s (2011, 2014) and Quinsey and Cyr's (1986) findings of the four factors contributing to an individual's overall attribution of crime causality, locus of control elicited the greatest levels of differences, with criminals who were judged to have an internal locus of control (i.e., their behaviours were within their own control) being judged more harshly than those who had an external locus of control (i.e., their behaviours were outwith their control). In this regard, it may be considered that a more focused investigation of locus of control's role in determining crime causality and perceptions is warranted. The present research therefore primarily aimed to investigate whether an individual's perception of crime was influenced by their personal locus of control.

Perceptions of crime can be multifaceted, incorporating fear of crime victimisation, perception of police visibility, neighbourhood characteristics, and the real or perceived incidence of crime in one's close vicinity (Mraovic, Butorac, Lobnikar, & Zibek, 2018). Mraovic et al. (2018) highlight that people perceive disorder and incivility as an indication of risk of crime, and that these indications do not necessarily relate directly to the actual crime rates in an area or risk of being a victim of crime. Perception of crime is therefore not a person's assessment of the actual risk based on statistical fact, but is a sense of how safe they feel in their area based on more social cues, regardless of whether the actual risk associated with these is real or imagined (i.e., perceived).

Perceptions of crime and safety remains a core area of concern for the majority of the public, but these perceptions are often unaligned with the actual crime statistics present in an individual's local area. For instance, using Scotland as an example (due to the availability of comprehensive and linked crime data sets), between 2008 and 2009, crime was one of the most frequently cited social issues, with 94% of 16,003 adults in Scotland identifying this as a problem (Scottish Government, 2009); and follow on surveys have identified that this level of interest and concern has remained

relatively constant (Scottish Government, 2011). Despite this clear interest and concern relating to crime, there is an evident discordance between the overall rates of crime with Scotland and people's perceived rates of crime in local residential areas: adults are almost twice as likely to believe that crime as a whole is much worse in other areas than it is in their own area (Scottish Government, 2011).

Duffy, Wake, Burrows, and Bremner (2008) suggest that in Britain, the general public view crime and violence as a greater problem than do those in other European countries and within the USA, yet, in reality, crime rates dropped within the UK between 1997 and 2008 by 32%. Despite the reduction in crime rates, only one in five people were willing to trust that the rate of crime had fallen and that more police were 'on the beat' than previously (Duffy et al., 2008). These skewed perceptions of crime could potentially impact upon people's satisfaction with current policing practices and the criminal justice system in general. In order to address this skewed perception of crime, it is therefore necessary to empirically identify the factors which may contribute towards it. On a societal level there is a plethora of papers investigating macro-influential factors, such as the mass media's influence on public perceptions of crime (e.g., Hough & Roberts, 2004; Mesko, Cockcroft, Crawford, & Lemaitre, 2009; Yar, 2012). The current paper will therefore not re-iterate the work that is already existent in the literature on this topic. Instead, the current research aims to identify the impact of potentially contributory psychological factors on people's perceptions of crime; primarily locus of control.

Locus of control was proposed by Rotter (1966) as a theory to measure the beliefs of an individual which are supposedly learned (Hultsch & Plemons, 1979). Locus of control refers to an individual's belief or perception about the level of control that they have over events that take place within their life, and this is generally divided into internal and external locus of control. An internally focused person would typically be thought to take responsibility for their actions and the challenges that they must face (Heider, 1958), whereas an externally focused individual would be more likely to believe that their life is controlled by external factors that they cannot take command of (Heider, 1958). Within external locus of control, an individual is apt to believe that events and rewards that occur are due to 'fate' (Specht, Egloff, & Schmukle, 2011), while those with an internal locus of control would view these as controllable and due to previous actions or efforts on the part of the individual.

Rotter's (1966) theory of locus of control may be useful in furthering our understandings in individual's perceptions of crime, as past theory has demonstrated that harsher judgements and punitive sentences are allocated to those who are perceived to be in control of their own actions (Murray et al., 2011; Murray et al., 2014; Quinsey & Cyr, 1986). These attributions about another person's perceived locus of control are therefore of clear importance in the context of crime perceptions. However,

to further understand the underlying determinants behind these past findings, we must begin to investigate the issue of locus of control at a more individual level, by investigating the impact of an individual's *own* locus of control on their perceptions of crime – thus looking more specifically at the individual but also broadening the issue to the more societal issue of crime perceptions (as opposed to perceptions of specific crimes or offenders).

While the current study's primary focus is on locus of control, a number of other variables must also be considered. Both age and sex have been found to play important roles in both perceptions of crime (Scottish Government, 2009; 2011) and locus of control (Twenge, Zhang, & Im, 2004). In relation to locus of control, Twenge et al. (2004) suggested that as individuals progress through life, they perceive that they have greater control over their surroundings and outcomes. This would suggest that internal locus of control is correlated with age and that it is therefore not fixed throughout the lifespan, with Hovenkamp-Hermelink, Jeronimus, Spinhoven, Penninx, Schoevers, and Riese (2019) finding that as people age they develop a greater internal locus of control, while Gatz and Karel (1993) found that this increase in internal locus occurred until middle age, and then decreased into old age.

In relation to crime perceptions, females and elderly adults reported themselves to be at a higher risk of victimisation than males and other age groups, respectively (Jackson, 2009; Lindesay, 1996; McKee & Milner, 2000; Scottish Government, 2009; Wilcox, Land, & Hunt, 2003). Jackson (2009) discussed the psychological underpinnings behind these perceptions, and found that women felt less able to defend themselves physically, had lower perceived self-efficacy and higher perceived negative impact relating to being a victim of crime, and they viewed their likelihood of being victimised as higher for both themselves and for their social group. Contrary to these perceptions, females and elderly adults are statistically at less than the average risk of becoming victims of crime (Scottish Government, 2011). The current research therefore aims, in part, to investigate the role of age and sex in relation to locus of control on people's perceptions of crime, to establish which of these three factors, if any, best predict perception of crime, and whether there are any age or sex differences.

These findings are important not only in furthering our understandings in the area of locus of control, but also at an individual and societal level. For instance, where individuals perceived that they were at greater risk of victimisation, they attempted to decrease the level of their socialisation and public activity to avoid placing themselves in a position where they could be victimised by crime (McKee & Milner, 2000). Thus, having a skewed perception of crime can have damaging consequences both socially and personally.

The present research therefore aimed to investigate whether perceptions of crime would differ across sex, age, and people's locus of control (internal versus external). The current study focused on perceptions of 'petty crimes': a punishable act which results in nothing more than a fine or suspended sentence due to the widespread nature of the offences (Boutellier, 2002). This was to allow a broad focus on more general crime perceptions that are less likely to be impacted by emotions and vengeance perceptions

than more 'serious' crimes, such as murder or assault (Murray, Thomson, Cooke & Charles, 2013). The hypotheses were as follows:

(1) Younger people's perceptions of crime will be more externally focused than older people's perceptions of crime.

(2) Females will have more negative perceptions of crime than males.

(3) Individuals with an external locus of control score (externally focused) will have a more negative perception of crime than those with an internal locus of control.

Method

Participants

Recruitment relied on non-probability sampling techniques: opportunity sampling and snowballing techniques were used to recruit participants in Edinburgh, Scotland. The study consisted of an equal number of males and females (30 males, 30 females). The age range was 18–78yrs ($M = 41.6$; $SD = 16.5$). Participant ages were categorised into three age groups: younger (18–30yrs, $M = 23.0$, $SD = 3.3$; females $M = 21.8$, males $M = 24.1$); middle (31–50yrs, $M = 41.7$, $SD = 6.4$; females $M = 42.7$, males $M = 40.6$); and older (51+yrs, $M = 60.1$, $SD = 8.0$; females $M = 60.7$, males $M = 59.4$). Participant age groups were distributed equally across sex groups.

Material

Participants received a standardised 'pack' of materials which contained an information sheet about the study and procedure, a consent form, a copy of Rotter's (1966) Locus of Control Questionnaire, a ten-item Perceptions of Crime questionnaire and a demographics questionnaire. The demographics questionnaire asked participants for their age and sex. Participants also received a standardised debriefing form upon completion of the study.

The Locus of Control Questionnaire (Rotter, 1966) consists of 29 forced response questions: 23 determine locus of control and six are 'filler questions' which ask about beliefs of the world. This is a standardised and widely used measure of locus of control (Beretvas, Suizzo, Durham, & Yarnell, 2008). Of 120 studies with 94 samples using this questionnaire, a meta-analysis by Ng, Sorensen, and Eby (2006) demonstrated an average reliability of $\alpha = 0.7$. In the current research reliability for the Locus of Control Questionnaire was found to be $\alpha = 0.68$. The questionnaire's construct validity is related to predicted differences in behaviour involving attempts to control their situation, motivation to achieve, and resistance to suggestion (Wang & Lv, 2017).

This questionnaire is most commonly used in its original format with two-option responses to each question, but it has also been adapted and used with a Likert-scale response option (e.g., Collins, 1974). To be comparable to the majority of published research using the questionnaire, the current study chose to use the original two-option scoring. A high score indicates that an individual has an external locus of control; a low score indicates an internal locus of control. The highest possible score is 23 and

the lowest is 0. In order to determine a 'cut-off', applied a median split (median = 10): those who scored ten or more were considered to have an external locus of control ($N = 23$) and those who scored less than ten were considered to have an internal locus of control ($N = 37$).

The Perceptions of Crime Questionnaire contained ten items that were scored on a 7-point Likert-scale (ranging from 1-strongly disagree to 7-strongly agree). The questions used were adapted from the Ministry of Justice in New Zealand's (2005) Burglary Survey Questionnaire, and focused on 'petty crime.' At the top of the questionnaire the following operational definition of petty crime was given:

"A petty crime is a type of crime which is not considered serious when compared with some other crimes" (Cambridge Online, 2013) – these crimes result in nothing more than a fine or suspended sentence due to the widespread nature of the offences."

The items were posited as statements to which participants rated their level of agreement or disagreement with using the aforementioned scale. These were as follows: (1) I understand what is meant by a petty crime; (2) I believe that petty crime is not a problem within today's society; (3) I believe it is the responsibility of the Police to control crime rates; (4) If I saw somebody acting suspiciously around somebody else's property I would report it to the Police; (5) There is nothing I can do to stop myself being a victim of crime; (6) Crime rates are higher now than in the past decade; (7) I worry about my friends being victims of petty crime; (8) Petty crimes should result in a bigger punishment; (9) Keeping belongings safe and staying aware will prevent me from becoming a victim of petty theft; (10) People who report petty crime are wasting Police time.¹ Question 1 was used to check that participants understood the topic under investigation. Only one participant indicated that this was not understood, and 'petty crime' was further defined to aid their understanding prior to continuing with the questionnaire.

Design

The study was questionnaire based, using a 2 (internal vs external locus of control) x 2 (male vs female) x 3 (age group:

¹ Prior to the main analysis, Exploratory Factor Analysis using Principle Components Analysis and varimax rotation was carried out on the nine target items of the questionnaire (Q2-10) to identify any underlying factors within the questionnaire. Two models were tested to identify whether suitable factors could be extracted. In the first, the Kaiser stopping criterion (Eigenvalues set to >1) was used to identify the number of factors to extract. This model yielded four potential factors, which was not suitable as each factor contained less than three items. The second imposed a constrained model seeking to extract three factors (which would potentially allow for three items per factor). As before, less than three items aligned per factor and as such the factors were deemed unsuitable. Reliability using Cronbach's alpha was also very poor, further indicating that the factors identified were not suitable for analysis. The individual items were therefore analysed as separate dependent variables rather than being grouped into sub-scales.

18–30yrs, 30–50yrs, 50–80yrs) between groups' design. The dependent variables were participants' crime perceptions, measured using questions 2–10 from the ten-item Perceptions of Crime questionnaire. Each item was treated as a separate dependent variable as described in the materials section. To test Hypotheses 1 and 2, searching for between groups' differences, a 2x3x3 MONOVA was carried out. Post-hoc power analysis for the MANOVA used in the analyses (using G*Power 3; Faul, Erdfelder, Lang, & Buchner, 2007) measuring for the medium observed effect size ($f^2(V)=0.250$, following Cohen's conventions), with alpha set at 0.05 (following the norm) indicated $1 - \beta$ to be 0.913. The analysis was therefore adequately powered. To test hypotheses 2 and 3, multiple regressions were carried out for each of the nine DVs using the three IVs as predictor variables. Power analysis measuring for large effect size (0.35 following Cohen's convention), with alpha set to 0.05, with a sample of 54 indicated $1 - \beta$ to be 0.95. The study received ethical approvals prior to commencing from the School's Research Integrity Committee.

Procedure

Participants received a participant information sheet, a consent form, the Locus of Control questionnaire, the Perceptions to Crime questionnaire to complete in a 'pack'. Participants were given the choice of completing the questionnaire in their own time or in while the researcher was present; whichever they preferred. Prior to participation, participants were briefed on the broad purpose of the study and were given the opportunity to ask questions throughout. They were then given time to complete the questionnaires at their own pace. After completing the questionnaires, each participant was provided with a debrief sheet which contained further information regarding the study, including the purpose of the study and contact details of the researcher.

Results

As there were no underlying factors within the Perceptions of Crime Questionnaire, the responses to each of the individual questions (Q2–10) were treated as separate dependant variables. A 2x2x3 between groups' MANOVA was therefore carried out with the IVs sex (male vs female), locus of control (internal vs external) and age (younger, middle, older aged) in order to reduce the risk of Type 1 errors and to take into account any potential intercorrelations amongst the DVs. Each of the nine items within the Perceptions of Crime Questionnaire were treated as separate DVs. No significant multivariate effects were found for age group, sex or locus of control. The interaction between sex and age group was significant (Wilks' $\lambda = 0.483$, $F(18, 80) = 1.948$, $p = 0.023$); none of the remaining interactions were significant.

Following on from the significant interaction between age and sex, 2x2x3 between group's univariate ANOVAs for each of the nine dependant variables (see Table 1) were carried out, with the IVs as before. A significant main effect of sex was present for Question 4 (if I saw somebody acting suspiciously around somebody else's

Table 1
 Descriptive data for locus of control scores for each question across sex and age groups. Questions 5- have been reverse coded to allow them to be read in the same direction as the other items: for all items, a higher score indicates higher agreement with the question.

Question	Age	Sex	Mean	SD	N
2. I believe that petty crime is not a problem within today's society	Young	M	2.5	1.2	10
		F	2.2	0.9	10
	Middle	M	3.0	1.4	10
		F	1.6	0.8	10
	Old	M	1.9	0.6	10
		F	2.0	1.4	10
3. I believe it is the responsibility of the Police to control crime rates	Young	M	5.1	1.2	10
		F	5.0	1.9	10
	Middle	M	5.4	1.1	10
		F	5.2	1.2	10
	Old	M	5.6	1.1	10
		F	4.4	1.8	10
4. If I saw somebody acting suspiciously around somebody else's property I would report it to the Police	Young	M	5.2	1.6	10
		F	5.9	1.1	10
	Middle	M	5.7	1.4	10
		F	6.7	0.7	10
	Old	M	5.2	1.8	10
		F	5.9	1.5	10
5. There is nothing I can do to stop myself being a victim of crime [reverse coded]	Young	M	5.5	1.0	10
		F	5.3	1.8	10
	Middle	M	4.5	2.0	10
		F	4.9	1.3	10
	Old	M	5.7	0.8	10
		F	5.3	1.8	10
6. Crime rates are higher now than in the past decade [reverse coded]	Young	M	3.5	0.8	10
		F	3.9	2.1	10
	Middle	M	3.7	2.1	10
		F	2.7	0.9	10
	Old	M	4.1	1.1	10
		F	4.2	1.7	10
7. I worry about my friends being victims of petty crime [reverse coded]	Young	M	4.9	2.3	10
		F	3.7	2.5	10
	Middle	M	3.2	1.6	10
		F	5.4	1.6	10
	Old	M	4.5	1.4	10
		F	4.1	2.2	10
8. Petty crimes should result in a bigger punishment	Young	M	3.8	1.0	10
		F	4.9	1.8	10
	Middle	M	5.1	1.7	10
		F	4.0	2.1	10
	Old	M	5.8	0.8	10
		F	4.4	1.7	10
9. Keeping belongings safe and staying aware will prevent me from becoming a victim of petty theft	Young	M	5.7	1.2	10
		F	6.0	1.1	10
	Middle	M	5.3	1.6	10
		F	4.9	2.0	10
	Old	M	5.1	1.0	10
		F	4.7	1.6	10
10. People who report petty crime are wasting Police time	Young	M	2.5	1.4	10
		F	1.6	0.7	10
	Middle	M	2.4	1.7	10
		F	1.5	0.9	10
	Old	M	1.5	0.7	10
		F	1.6	0.7	10

property I would report it to the Police; $F(1, 48) = 5.74, p = 0.021, \eta_p^2 = 0.11$). Males ($M = 5.73; SD = 1.59$) were significantly less likely to report suspicious actors to the police than females ($M = 6.17; SD = 1.8$). No other main effects were present.

A significant interaction between age and sex was found for only Question 8 (petty crimes should result in a bigger punishment; $F(2, 48) = 3.56, p = 0.036, \eta_p^2 = 0.11$). This interaction is illustrated in Figure 1. As shown, both the middle ($M = 5.10; SD = 1.73$) and older ($M = 5.80; SD = 0.79$) aged males scored this question significantly higher than females of equivalent age ($M = 4.00, SD = 2.06; M = 4.40, SD = 1.71$, respectively), indicating that middle and older age males believe that petty crimes ought to result in greater punishment more-so than females of equivalent age. Conversely, younger females ($M = 4.90; SD = 1.79$) scored higher than younger males ($M = 3.80; SD = 1.03$) on this question. This finding indicates that there are differing viewpoints in relation to punitive outcomes for petty crimes across sex when age is taken into consideration. No other interactions were present.

Multiple regressions for each of the nine crime perception questions were carried out with the predictors: sex (male, female), age (as a continuous measure) and locus of control (as a continuous score). The findings are presented in Table 2. Responses to Questions 4, 8, 9, and 10 were the only

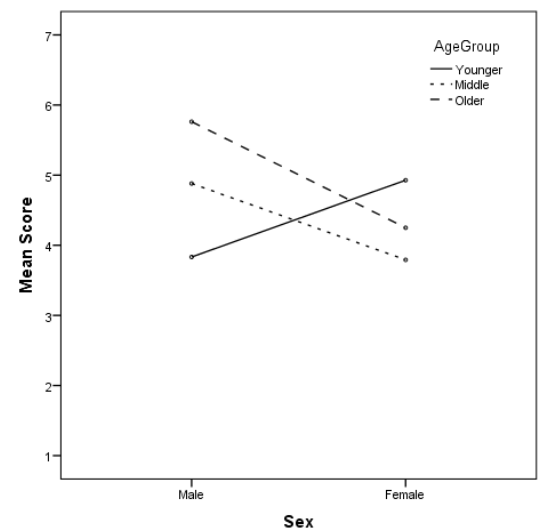


Figure 1. Mean scores for Question 8 (petty crimes should result in a bigger punishment) across sex and age.

Table 2
Multiple regression analyses – overall model statistics for each of the nine questions, with predictor variables: sex; age; locus of control.

Question	R	R ²	Adjusted R ²	F	df	p
2. I believe that petty crime is not a problem within today's society	0.29	0.08	0.04	1.71	3, 56	0.18
3. I believe it is the responsibility of the Police to control crime rates	0.30	0.09	0.04	1.82	3, 56	0.15
4. If I saw somebody acting suspiciously around somebody else's property I would report it to the Police	0.39	0.15	0.11	3.32	3, 56	0.03
5. There is nothing I can do to stop myself being a victim of crime [reverse coded]	0.23	0.05	<0.01	1.03	3, 56	0.39
6. Crime rates are higher now than in the past decade [reverse coded]	0.14	0.02	-0.03	.039	3, 56	0.76
7. I worry about my friends being victims of petty crime [reverse coded]	0.07	<0.01	-0.05	0.10	3, 56	0.96
8. Petty crimes should result in a bigger punishment	0.38	0.15	0.10	3.21	3, 56	0.03
9. Keeping belongings safe and staying aware will prevent me from becoming a victim of petty theft	0.37	0.13	0.09	2.88	3, 56	0.04
10. People who report petty crime are wasting Police time	0.44	0.19	0.15	4.36	3, 56	<0.01

Table 3
Descriptive data for locus of control scores across sex and age groups. A higher locus of control score indicates an external locus; a lower score indicates an internal locus.

Age Group	Sex	Mean	SD	N
Younger	Male	11.60	5.02	10
	Female	9.70	3.50	10
Middle	Male	11.10	4.01	10
	Female	10.20	3.43	10
Older	Male	9.10	5.51	10
	Female	9.70	2.41	10

ones significantly predicted by the model applied.

For the significant findings, the results are as follows. For Question 4 (If I saw somebody acting suspiciously around somebody else's property I would report it to the Police), the model predicted 15% of the variance, with Sex ($B = 0.73, p = 0.04$) and locus of control ($B = -0.10, p = 0.04$) being significant predictors, suggesting that males and people with internal locus of control are most likely to agree with this statement. Age was not a significant predictor ($B < 0.01, p = 0.99$).

The model also predicted 15% of the variance for responses

to Question 8 (Petty crimes should result in a bigger punishment). Only locus of control acted as a significant predictor ($B = -0.13, p = 0.02$), with those internally focused most likely to agree with this statement. Age ($B = 0.02, p = 0.25$) and sex ($B = -0.57, p = 0.17$) were not predictors. Similarly, for Question 10 (People who report petty crime are wasting Police time), 44% of the variance was predicted by the model, with only locus of control ($B = -0.09, p = 0.01$) being a significant predictor. Internally focused people are more likely to consider people reporting petty crimes to the police as time wasters. Neither sex ($B = -0.50, p = 0.07$) nor age

($B < -0.01, p = 0.40$) were significant predictors.

For Question 9 (Keeping belongings safe and staying aware will prevent me from becoming a victim of petty theft), 37% of the variance was predicted, with the only significant predictor being age ($B = -0.03, p = 0.01$). As age increases, the belief in keeping belongings safe acting as a protective factor for petty crime reduces. Sex ($B = -0.21, p = 0.56$) and locus of control ($B = -0.07, p = 0.12$) were not predictors.

To determine whether locus of control differed across sex (male vs female) and age (younger, middle, older age), a 2x3 between groups' ANOVA was carried out, with the locus of control score being the dependent variable. Neither age ($F(2,54) = 0.62, p = 0.54, \eta_p^2 = 0.02$) nor sex ($F(1, 54) = 0.48, p = 0.49, \eta_p^2 = 0.01$) demonstrated significant differences in terms of locus of control, as indicated in Table 3, nor was there an interaction between age and sex ($F(2, 54) = 0.47, p = 0.63, \eta_p^2 = 0.02$).

Discussion

The current research aimed to explore individual factors which may influence a person's perception of crime, with the focus being on petty crime. Specifically, the current research studied age, sex and locus of control, in line with past findings indicating that these may be a contributory factor in a person's perception of, and hence response to, crime (Jackson, 2009; Lindesay, 1996; McKee & Milner, 2000; Scottish Government, 2009; Twenge et al., 2004; Wilcox et al., 2003). It was hypothesised that: (1) younger people's perceptions of crime would be more externally focused than older people's perceptions; (2) female perceptions of crime would be more negative than males'; and (3) those with a high locus of control score (externally focused) would have a more negative perception of crime than those who were internally focused.

Hypothesis one was not upheld. No significant differences existed between locus of control across the three age categories. All three age groups were seen to be largely internally focused. Hypothesis two was also rejected. There was only one singular sex difference (main effect) found across the nine crime perception questions, with male participants being significantly less likely to say that they would report suspicious behaviour around someone else's property to the police than females. No other sex differences were found for the remaining eight questions. However, an age and sex interaction was present for the question 'petty crimes should result in a bigger punishment.' Middle-aged and older-aged males believed that petty crimes should result in greater punishment to a greater extent than did females of the same age groups. Within the younger-age group, this pattern was inverted, with females indicating more severe punishments for petty crimes than males. Thus, when both sex and age are considered, crime perceptions are changeable across age and sex, but in different directions. This finding may be explained in part by work by McKee and Milner (2000), who suggested that older adults have a distorted level of crime perception in comparison to younger adults, tending to view crime as more prevalent/imminent. However, as no main effect of age was present, and through scrutinising the current study's mean scores for each category, it can be seen that older adults did not

score significantly lower than the other two age groups – scoring lower would signify a negative perception of crime. Therefore, it is not possible to suggest that age alone is a determining factor which influences individual's perceptions. It is therefore important for future research to investigate not only age in relation to crime perceptions, but also the effect of sex, as an important associative factor.

Determining whether individuals with a high external locus of control score would have a lower perception of crime was the third and final research hypothesis. Again, the research findings did not produce significant evidence to support this, and the hypothesis was rejected. Of the three items within the regression analyses for which locus of control acted as a predictor, none of the items focused on crime as a problem; rather the items focused on personal responsibility and on penalty for committing crime. The findings also contradict the theory proposed by Twenge et al. (2004), which suggested that as individuals progress through life, they believe they have more control over what happens in their life. The current findings did not find any interactions between locus of control and age, across any of the questionnaire items. It was therefore not possible to suggest participants' locus of control differed depending on their age or that this had any impact on crime perception.

The research from this study concluded that neither sex, age, nor the locus of control score determined whether an individual believed crime, within society, as a problem. McKee and Milner (2000) specified older adults (51+ years) as having a skewed perception of the level of crime within society; however this does not appear to be the case within the current study's findings. If this was apparent, then participants aged between 18 and 50 would have scored the questions (in particular, question two: I believe that petty crime is not a problem within today's society) significantly higher than those aged 51 and over. The conclusions derived from this question also relate to the findings of Wilcox et al. (2003) who proposed that women and older adults were more inclined to report higher levels of crime as opposed to other members of society. Wilcox et al. (2003) also proposed that women and older adults were more likely to be more fearful towards crime. Following the research conducted by Wilcox et al. (2003), Jackson (2009) detailed similar findings: women have a higher fear of crime than males. These finding may suggest that males may report lower views on their perceptions of crime as it is seen as more 'socially acceptable' for a female to be fearful than it is males (Wilcox et al., 2003). The results from the current research contradict these findings as the mean scores of the males did not differ remarkably from the female participant scores.

It is important to highlight limitations to the study. One limitation in this study could be related to external validity and the sample sized used. The somewhat small sample size was large enough to allow statistical power in the analyses, but still must be noted as a potential limitation. In addition, the number of Externally focused participants was lower than those considered to have an internal locus of control. This may be accountable due to the small sample size, but could also be explainable through the locus of control questionnaire used in the current research

itself. Although the questionnaire has been regarded as one of the most popular with regards to personality questionnaires (Beretvas et al., 2008), this study found limitations within the structure. Participation was hindered due to a number of individuals believing the questionnaire did not provide sufficient answers, as they neither agreed nor disagreed with the statements. This may also have had an effect on the answers of the participants who did complete the questionnaires as there was no answer 'in-between'. Although there was still a proportionate sample for comparison between internal and external locus, a larger sample size in future research or the use of a different locus of control questionnaire may have been useful. However, as the locus of control refers to an individual's belief over the control which they exhibit over the events taking place within their life (Rotter, 1966), it was a suitable theory to use to try to determine whether an individual's locus of control score could have an effect on their perception of crime.

Future research could benefit from taking a different perspective on the study of locus of control in crime perceptions. It may instead be beneficial for future research to consider a more applied focus, such as the community in which participants live or the individual's social group. When looking at these more applied variables, it may be possible to determine whether young people's perceptions of crime are more externally 'focused' based on more sociological and psychosocial factors rather than abstract psychological constructs.

References

- Beretvas, N. S., Suizzo, M., Durham, J. A., & Yarnell, L. M. (2008). A reliability generalization study of scores on Rotter's and Nowicki-Strickland's Locus of Control scales. *Educational and Psychological Measurement*, 68, 97–114. <http://dx.doi.org/10.1177/0013164407301529>
- Boutellier, H. (2002). *Crime and morality: The significance of criminal justice in post-modern culture*. Kluwer Academic Publishers.
- Collins, B. E. (1974). Four components of the Rotter internal external scale: belief in a difficult world, a just world, a predictable world and a politically responsive world. *Journal of Personality and Social Psychology*, 29(3), 381–391. <http://dx.doi.org/10.1037/h0036015>
- Duffy, B., Wake, R., Burrows, T., & Bremner, P. (2008). Closing the gaps-crime and public perceptions. *International Review of Law Computers & Technology*, 22(1–2), 17–44. <http://dx.doi.org/10.1080/13600860801924899>
- Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39(2), 175–191. <https://doi.org/10.3758/bf03193146>
- Gatz, M., & Karel, M. J. (1993). Individual Change in Perceived Control over 20 Years. *International Journal of Behavioral Development*, 16(2), 305–322. <https://doi.org/10.1177/016502549301600211>
- Goddard, N. (2012). Psychology. In P. Wright, J. Stern, & M. Phelan (Eds.), *Core psychiatry* (3rd ed., pp. 64–82). Saunders Ltd.
- Heider, F. (1958). *The psychology of interpersonal relations*. Wiley.
- Hough, M., & Roberts, J. V. (2004). *Youth crime and youth justice: Public opinion in England and Wales*. Policy Press.
- Hovenkamp-Hermelink, J. H. M., Jeronimus, B. F., Spinhoven, P., Penninx, B. W., Schoevers, R. A., & Riese, H. (2019). Differential associations of locus of control with anxiety, depression and life-events: A five-wave, nine-year study to test stability and change. *Journal of Affective Disorders*, 253(1), 26–34. <https://doi.org/10.1016/j.jad.2019.04.005>
- Hultsch, D. F., & Plemons, J. K. (1979). *Life events and life-span development*. In P. B. Baltes & O. G. Brim Jr. (Eds.), *Life-span development and behaviour* (Vol. 2, pp.1–36). Academic Press.
- Jackson, J. (2009). A psychological perspective on vulnerability in the fear of crime. *Psychology, Crime and Law*, 15(4), 365–390. <http://dx.doi.org/10.1080/10683160802275797>
- Lindesay, J. (1996). Elderly people and crime. *Reviews in Clinical Gerontology*, 6, 199–204. <http://dx.doi.org/10.1017/S0959259800004664>
- McKee, K. J., & Milner, C. (2000). Health, fear of crime and psychosocial functioning in older people. *Journal of Health Psychology*, 5(4), 473–486. <http://dx.doi.org/10.1177/135910530000500406>
- Meško, G., Cockcroft, T., Crawford, A., & Lemaitre, A. (2009). *Crime, media and fear of crime*. Tipografija Publishing.
- Murray, J., Charles, K. E., Cooke, D., & Thomson, M. E. (2014). Investigating the influence of causal attributions on the HCR-20 when it is used as a checklist compared to its use in the worksheet format. *International Journal of Forensic Mental Health*, 13, 8–17. <http://dx.doi.org/10.1080/14999013.2014.890978>
- Murray, J., Thomson, M. E., Cooke, D. J., & Charles, K. E. (2011). Influencing expert judgment: Attributions of crime causality. *Legal and Criminological Psychology*, 16(1), 126–143. <http://dx.doi.org/10.1348/135532510X490183>
- Murray, J., Thomson, M. E., Cooke, D. J., & Charles, K. E. (2013). Investigating the relationship between justice-vengeance motivations and punitive sentencing recommendations. *Legal and Criminological Psychology*, 18(1), 1–15. <http://dx.doi.org/10.1111/j.2044-8333.2011.02021.x>
- Mraovic, I. C., Butorac, K., Lobnikar, B., & Zebek, M. S. (2018). Police contact in relation to crime: Perception and fear of victimisation. In G. Mesko, B. Lobnikar, K. Prislán, & R. Hacin (Eds.), *Criminal justice and security in Central and Eastern Europe: From common sense to evidence-based policy-making* (pp. 119–133). University of Maribor.
- Ng, T. W. H., Sorensen, K. L., & Eby, L. T. (2006). Locus of control at work: A meta-analysis. *Journal of Organizational Behavior*, 27(8), 1057–1087. <https://doi.org/10.1002/job.416>
- Rotter, J. B. (1966) Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs*, 80(1), 1–28. <http://dx.doi.org/10.1037/h0092976>
- Scottish Government. (2009). *2008/09 Scottish crime and justice survey: First findings*. [ONLINE] Available at <http://www.scotland.gov.uk/Publications/2009/12/14120636/11>. [Accessed 10 October 15].
- Scottish Government. (2011). *2010/11 Scottish crime and justice survey: Main findings*. [ONLINE] Available at <http://www.scotland.gov.uk/Publications/2011/10/28142346/8>. [Accessed 10 October 15].
- Specht, J., Egloff, B., & Schmukle, S. C. (2011). The benefits of believing in chance or fate: External locus of control as a protective factor for coping with the death of a spouse. *Social Psychological and Personality Science*, 2, 132–137. <http://dx.doi.org/10.1177/1948550610384635>
- Twenge, J. M., Zhang, L., & Im, C. (2004). It's beyond my control: A cross-temporal meta-analysis of increasing externality in locus of control, 1960-2002. *Personality and Social Psychology Review*, 8(3), 308–319. http://dx.doi.org/10.1207/s15327957pspr0803_5
- Wang, L., & Lv, M. (2017). Internal-external locus of control scale. *Encyclopedia of Personality and Individual Differences*. Springer. <https://doi.org/10.1007/978-3-319-28099-8>

- Wilcox, P., Land, K. C. & Hunt, S. A., (2003). *Criminal circumstance: A dynamic multi-contextual criminal opportunity theory*. Aldine de Gruyter.
- Yar, M. (2012). Crime, media and the will-to-representation: Reconsidering relationships in the new media age. *Crime Media Culture An International Journal*, 8(3), 245–260. <http://dx.doi.org/10.1177/1741659012443227>

Submitted: 2.24.2020

Revised: 10.15.2020

Accepted: 10.16.2020