

Regional, structural, and demographic predictors of violent victimization: A cross-national, multilevel analysis of 112 countries

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Abstract

Routine activities and lifestyles theories emphasize structural and demographic predictors that affect the opportunity to commit crime and the likelihood of being victimized. Past research tends to focus on either the individual- or country-level with few studies incorporating both. Additionally, past research primarily draws on the International Crime Victimization Survey, which results in small country samples that are biased toward developed nations. The current study uses data from a larger, more diverse sample that allow us to test whether findings from prior studies are generalizable. We are also able to theorize and test the effect of region on victimization. We find some differences between our findings and past research; we also identify that region is one of the strongest predictors of violent victimization.

Keywords

Routine activities theory, victimization, violence, cross-national

There is extensive research in criminology on crime victimization and its correlates. Much of this research draws on routine activities theory (Cohen and Felson, 1979) and lifestyles theory (Hindlelang et al., 1978). This work stresses the importance of demographic and structural factors

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that facilitate or impede the opportunity to commit crime (Wilcox et al., 2003). There is a large literature investigating these factors in the context of the United States or with one or two other country samples (e.g. Arnold et al., 2005; Cass, 2007; Fisher and Wilkes, 2003; Fisher et al., 1998; Keane and Arnold, 1996; Kennedy and Forde, 1990; Lynch, 1987; Miethe and McDowall, 1993; Miethe et al., 1987; Spano and Freilich, 2009). There is considerably less research exploring these theories of victimization cross-nationally. What research does exist tends to emphasize either the individual level, typically using fixed-effects models to control for country, or the country level, often aggregating individual-level data or using country rates (Stein, 2010). In this way, it fails to consider how individual- and country-level factors may both affect the opportunity for crime (see Stein, 2010, 2013; Tseloni and Farrell, 2002; van Wilsem et al., 2003 for notable exceptions). The current study investigates routine activities theory and lifestyles theory on both the individual and country levels.

Additionally, past research on cross-national victimization almost exclusively draws on the International Crime Victimization Survey (ICVS), which generally results in small country samples (fewer than 50 countries) that are heavily biased toward Western developed countries. Thus, we do not know whether findings from past studies using primarily Western nations apply more broadly. It is also unclear whether regional indicators may contribute to explaining variations in victimization cross-nationally. A meta-analysis of cross-national homicide rates identified that a Latin American dummy variable has the strongest effect of any variable (Nivette, 2011). Yet we are unaware of any victimization study that models its effect or that of other regions, such as Sub-Saharan Africa, which has an even higher crime rate than Latin America, the highest of any region (Morrison et al., 2003). Both regions are likely to provide an increased opportunity for crime victimization. The failure to investigate regional effects is likely due to the sample size constraints of the ICVS.

The present study uses victimization data from surveys including large numbers of respondents and nations. Since 2005, the Gallup World Poll (GWP) has conducted annual (or biennial) nationally representative surveys of adults aged 15 and older in over 160 nations, which represent more than 99% of the world's population. A victimization question is a core question on the survey. Combining country-level variables from prior research with the individual-level GWP data allows us to test routine activities and lifestyles theories of cross-national victimization with a diverse sample of 112 countries and over 200,000 individuals. It also allows us to investigate regional predictors of victimization. Although many of our results are consistent with past ICVS studies, some findings differ. This suggests the need for more studies using large and diverse country samples.

Cross-national victimization and routine activities and lifestyles theories

Central to the study of victimization is identifying what individual and structural characteristics affect an individual's likelihood of being victimized. Routine activities and lifestyles are the main theories used to predict victimization. The main argument of routine activities theory is that the activities individuals engage in affect their likelihood of being victimized. Routine activities are 'any recurrent or prevalent activities which provide for basic population and individual needs', such as going to work (Cohen and Felson, 1979: 593). These activities contribute to a greater opportunity for victimization by being in a particular space in which 'motivated offenders', 'suitable targets', and 'the absence of capable guardians' converge (Cohen and Felson, 1979:

589). Suitable or attractive targets refers to property or persons that are either materially or symbolically desirable and for which/whom it would be easy to commit a crime against (Cohen et al., 1981). For example, a person who is walking alone at night is particularly vulnerable to a mugging or assault. When suitable targets are in closer proximity to motivated offenders (Lynch, 1987) and lack guardianship (i.e. individuals or objects that protect a suitable target or deter a crime from being committed) (Miethe and McDowall, 1993; Miethe and Meier, 1990, 1994), they are more likely to become a victim of crime. In particular, this argument emphasizes 'direct-contact predatory violations' in which there is 'direct physical contact between at least one offender and at least one person or object which that offender attempts to take or damage' (Cohen and Felson, 1979: 589).

Individuals' level of risk is closely tied to their lifestyle, which includes the types of activities in which they engage. Hindlelang et al. (1978) identified that socio-demographic characteristics are connected to varying role expectations that, in turn, produce different lifestyles. Thus, on the individual-level, measures of socio-demographic characteristics and activities can be used to capture opportunity for victimization (Messner et al., 2007; Miethe and Meier, 1990; Sacco et al., 1993; Sampson and Wooldredge, 1987; Schreck and Fisher, 2004; Stein, 2010, 2013).

Previous research

Past cross-national victimization research has typically operationalized routine activities and lifestyles theories on either the individual- or country-level.

Individual-level predictors

The most common individual-level predictors are socio-demographic variables. Lifestyles theory hypothesizes that males, youths, and singles are at higher risk of victimization compared to females, older individuals, and married people because they are more likely to engage in activities outside of the home (Alzheimer, 2008; Goffredson, 1981; Hindelang et al., 1978; Keane and Arnold, 1996; Lee, 2000; Miethe et al., 1987; Sampson and Wooldredge, 1987; Stein, 2010). These activities are assumed to put them in a context where there are more potential offenders and no guardianship. Singles may also be at an increased risk of victimization due to living alone, without guardianship (Cohen et al., 1981; Lee, 2000; Stein, 2010). This may increase their attractiveness as a target for motivated offenders. Additionally, those with lower socioeconomic status may be in closer proximity to motivated offenders, thereby placing them at an increased risk of victimization (Lee, 2000; Sampson and Wooldredge, 1987).

Routine activities themselves may also affect the likelihood of victimization. Employment may increase victimization risks due to it being a routine activity that requires individuals to be away from home often (Arnold et al., 2005). Miethe et al. (1987) argued that employment outside the home may actually decrease violent victimization risk by placing an individual in an environment with increased guardianship and thus decreased target suitability. However, they found no effect of working or attending school on violent victimization (see also Stein, 2010). In contrast, Kennedy and Forde (1990) found a positive relationship between victimization and working/attending school.

Routine activities theory predicts that location of residence should also affect the opportunity for victimization (Cohen et al., 1981). With higher population densities and more socioeconomic

diversity, all three elements of routine activities theory—suitable targets, motivated offenders, and lack of guardianship—often converge in urban areas. Community size and density generally increase the likelihood of victimization (Cohen and Felson, 1979; Felson and Cohen, 1980; Sampson and Wooldredge, 1987). Studies using the ICVS have typically found a positive relationship between city size and victimization (Lee, 2000; Tseloni, 2006; van Kesteren et al., 2014; van Wilsem et al., 2003).

Country-level predictors

Numerous variables have been used to operationalize the structural opportunity at the country-level particularly in cross-national studies of homicide rates (Bennett, 1991). Stein (2010: 43) proposes that the Human Development Index (HDI) captures ‘reduced opportunities to interpersonal contacts, which is importantly linked to a routine activities explanation of victimization experience’ (see also Antonaccio and Tittle, 2007; LaFree and Kick, 1986; Nivette, 2011). Inequality is a standard predictor of cross-national homicide (Avison and Loring, 1986; Blau and Blau, 1982; Chamlin and Cochran, 2006; Krahn et al., 1986; Pratt and Godsey, 2003; Pridemore, 2008). Within the framework of routine activities theory, it ‘represents structural opportunity and has been linked to exposure to motivated offenders’ (Stein, 2010: 44; see also van Wilsem et al., 2002, 2003). The pool of motivated offenders has been operationalized based on sex ratios, such that a greater proportion of males represents a larger number of potential offenders (Stein, 2010). Cross-national homicide research typically uses the proportion of young males in particular, as they are the most likely to be offenders and victims (Nivette and Eisner, 2013; Hirschi and Gottfredson, 1983; Nivette, 2011). Female labor-force participation is typically used to capture closer proximity to motivated offenders and a lack of guardianship (Anderson and Bennett, 1996; Bennett, 1991; Bjerregaard and Cochran, 2008; Gartner, 1990; Neumayer, 2003; Nivette and Eisner, 2013; Stein, 2010; Tseloni and Farrell, 2002).

Past cross-national crime research has found that Latin America has one of the strongest associations with cross-national homicide rates (Chon, 2011; Neapolitan, 1994; Nivette, 2011). Neapolitan (1994) argues that because this effect is net of structural controls, it is likely due to the regional culture of Latin America. In particular, the ‘machismo’ culture of Latin America, characterized by ‘aggressive masculinity, intransigence, and sometimes violence’ is thought to increase violence and homicide (Neapolitan, 1994: 5). Yet Latin America has only the second highest crime rate, after Sub-Saharan Africa (Morrison et al., 2003). Corcoran and Stark (2018) argue that both Latin America and Sub-Saharan Africa share a culture of honor that encourages aggressiveness, violence, and hyper-masculinity (Deyoung and Zigler, 1994; Gilmore, 1990) thereby contributing to their higher levels of violence. Cultures of honor tend to emerge when the state does not protect personal property or punish those who steal or attempt to steal it (Alzheimer, 2013). Under these conditions, individuals typically settle disputes interpersonally and often with violence. On the macro level this tends to increase violent crime as individuals seek to protect their ‘reputation of strength and honor’ through being ‘vigilant in their own defense’ (Alzheimer, 2013: 30, 40; Nisbett and Cohen, 1996). Corcoran and Stark (2018) find that both Latin America and Sub-Saharan Africa indicator variables have strong associations with cross-national violent crime rates. Prior research on cross-national individual-level victimization does not include Latin American or Sub-Saharan African regional variables, which is likely due to the lack of data on these countries. Given their cultures of honor, individuals who reside in Latin

America and Sub-Saharan Africa are likely to be more proximate to motivated offenders and thus are more likely to be victimized.

Although past victimization studies have analyzed either the individual- or country-level, there are considerably fewer studies taking a multilevel approach and estimating both individual- and country-level measures in the same analysis, which we do in the current study (Stein, 2010; Tseloni and Farrell, 2002; van Wilsem et al., 2003).

Predicting violent victimization

Routine activities theory assumes some form of rational motivation for criminal behavior with its expression rooted in whether the opportunity presents itself (Cohen and Felson, 1979). As Stein (2010) notes, this assumption has sparked debate over whether measures of opportunity are related to both instrumental and expressive victimization. The former involves property crimes that are motivated by the pursuit of particular goals, whereas the latter are unplanned violent crimes that involve interpersonal conflict and emotions such as rage and anger (Miethe and Drass, 1999; Stein, 2010). Of course, instrumental victimization is clearly connected to the rational motivations underlying routine activities theory as individuals decide whether to commit a property crime based on whether the gains outweigh the possible punishments if caught (Felson, 1998). Expressive crimes also entail rationality in the desire to ‘maintain a favorable self-image through violent actions’ and through rationally choosing a target that can be overpowered with little risk of punishment (Stein, 2010: 41; Felson, 1996; Felson, 1998). However, some scholars disagree with the latter and argue that rationality does not apply to expressive crimes, which are principally committed due to emotions without specific goals in mind (Miethe et al., 1987). Even if that is accurate, the other two elements of the theory—suitable targets and guardians—may come into play for expressive crimes. The majority of research on routine activities theory and victimization is either on violent crime victimization alone or on both violent crime victimization and property crime victimization (Spano and Freilich, 2009). In fact, several studies find that measures of routine activities theory are significantly related to both violent and property crime victimization (Cohen et al., 1981; Kennedy and Forde, 1990; Keane and Arnold, 1996; Fisher et al., 1998; Fisher and Wilkes, 2003; Arnold et al., 2005). As such, we are able to test the previously described predictors on violent victimization cross-nationally with a large country sample.

Data

We use data from the 2009–2013 GWPs for 112 countries/territories. See Table 1 for a country list. The GWP is a regularly occurring survey of adult (aged 15+ years) residents in over 160 countries/territories making up more than 99% of the world’s adult population. The survey is first translated into the primary languages of a country and is then given to approximately 1,000 individuals. In most countries, the survey is conducted annually, but in a few small countries it is conducted less frequently. Given the relatively short time span between surveys, we use all available years to maximize both the country and respondent samples, which means that some countries have multiple years of data included. Appendix A provides the countries and years from which our data are derived. Year is controlled for in all models. The survey is given over the telephone in countries where at least 80% of the population has telephones by means of either random-digit dialing or a nationally representative list of phone numbers. Face-to-face

Table 1. Country list (Latin America or Sub-Saharan Africa designation).

Afghanistan	Haiti (LA)	Portugal
Algeria	Honduras (LA)	Romania
Argentina (LA)	Hong Kong	Russia
Armenia	Hungary	Rwanda (SSA)
Australia	India	Senegal (SSA)
Austria	Indonesia	Sierra Leone (SSA)
Bangladesh	Iraq	Singapore
Belarus	Ireland	Slovakia
Belgium	Israel	Slovenia
Bolivia (LA)	Italy	South Korea
Botswana (SSA)	Jamaica (LA)	Spain
Brazil (LA)	Japan	Sri Lanka
Bulgaria	Jordan	Sudan (SSA)
Burkina Faso (SSA)	Kazakhstan	Suriname (LA)
Burundi (SSA)	Kenya (SSA)	Switzerland
Cambodia	Kyrgyzstan	Syria
Cameroon (SSA)	Latvia	Tajikistan
Canada	Liberia (SSA)	Tanzania (SSA)
Central African Republic (SSA)	Lithuania	Thailand
Chad (SSA)	Luxembourg	Trinidad & Tobago (LA)
Chile (LA)	Macedonia	Tunisia
China	Malawi (SSA)	Turkey
Colombia (LA)	Malaysia	Uganda (SSA)
Comoros (SSA)	Mali (SSA)	Ukraine
Congo, Kinshasa (SSA)	Mauritania (SSA)	United Kingdom
Costa Rica (LA)	Mexico (LA)	United States
Czech Republic	Moldova	Uruguay (LA)
Denmark	Mongolia	Uzbekistan
Djibouti (SSA)	Nepal	Venezuela (LA)
Dominican Republic (LA)	Netherlands	Vietnam
Ecuador (LA)	New Zealand	Yemen
Egypt	Nicaragua (LA)	Zimbabwe (SSA)
El Salvador (LA)	Niger (SSA)	
Finland	Nigeria (SSA)	
France	Pakistan	
Georgia	Panama (LA)	
Germany	Paraguay (LA)	
Ghana (SSA)	Peru (LA)	
Greece	Philippines	
Guatemala (LA)	Poland	

LA: Latin America; SSA: Sub-Saharan Africa.

interviewing is used in countries not meeting this criterion. When data weights¹ are applied, the data are nationally representative, except in countries where remote, desolate areas could not be surveyed or where certain areas posed safety threats to interviewing staff. In both cases, the survey is representative of all other areas of the country. More detailed information regarding the GWP's methodology can be found at <<http://www.gallup.com/178667/gallup-world-poll-work.aspx>>. We first drop all respondents under 18 years old to ensure comparability with other

Table 2. Descriptive statistics.

Binary variables	N	0 (%)	1 (%)	Min	Max
Individual level					
Violent victimization	208,750	92.30	7.70	0	1
Gender	208,750	55.03	44.97	0	1
Married	208,750	45.89	54.11	0	1
Single	208,750	76.30	23.70	0	1
Separated	208,750	96.92	3.08	0	1
Divorced	208,750	96.40	3.60	0	1
Widow	208,750	92.20	7.80	0	1
Domestic partner	208,750	92.30	7.70	0	1
Full time	208,750	58.42	41.58	0	1
Part time	208,750	84.78	15.22	0	1
Unemployed	208,750	94.35	5.65	0	1
Out of work	208,750	62.44	37.56	0	1
Elementary education	208,750	64.10	35.90	0	1
Secondary education	208,750	49.58	50.42	0	1
Tertiary education	208,750	86.32	13.68	0	1
Urban	208,750	64.73	35.27	0	1
Country level					
Latin America	112	80.36	19.64	0	1
Sub-Saharan Africa	112	78.57	21.43	0	1
Continuous variables	N	Mean	SD	Min	Max
Individual level					
Age	208,750	42.39	16.75	18	99
Ln (income)	208,750	8.69	1.74	-4.61	14.03
Country level					
HDI	112	0.65	0.19	0.26	0.93
Gini	112	39.83	10	24.7	64.3
Female labor	112	51	15.84	12.3	88.5
Young males	112	18.31	3.36	10.9	25

Note: Data from Gallup World Poll 2009-2013.

HDI: Human Development Index

cross-national studies using an adult sample. To measure our country-level factors we draw on a wide variety of sources including the World Bank and the United Nations. Table 2 provides descriptive statistics for all the measures described below. With missing data eliminated, we have 112 countries and 208,750 respondents.

Measures

Dependent variable

Typically, cross-national victimization studies use the ICVS as it is one of the few publicly available cross-national victimization datasets. However, it tends to have small country samples (Lynch, 2006: 232), often fewer than 50 countries. The GWP's nationally representative victimization question asked in a large number of diverse countries addresses this limitation.² The GWP

asked respondents the following victimization question: ‘Within the past 12 months, have you been mugged or assaulted?’ (variable ID wp118, see Gallup, 2014: 62). In total, 8% said yes to this question. We use ‘violent crime’ to refer to this measure.³

Individual-level independent variables

Gender is coded as 1 = male, and 0 = female. Age is left as a continuous variable based on the respondent’s answer. Following past research, marital status is used as a proxy for living arrangement. We construct a series of dummy variables where 1 = married, single, divorced, separated, a widow/widower, or has a domestic partner and 0 = otherwise. Married is used as the referent category. To capture socioeconomic status, we include a logged measure of household income and education (Sampson and Wooldredge, 1987) as two dummy variables—tertiary and secondary education—with primary education or less as the referent category. Logged household income is ‘expressed in international dollars, created using the World Bank’s individual consumption PPP conversion factor, making income estimates comparable across all countries’ (Gallup, 2014: 11). We control for survey year in all models thereby accounting for inflation over time. We measure urban residence as 1 = resides in a city and 0 = otherwise. To measure work, we create dummy variables for full-time and part-time work, unemployed, and out of the workforce. Unemployed refers to a respondent who ‘reports not being employed in the last seven days, either for an employer or for himself or herself. The respondent must also report actively looking for a job in the past four weeks AND being able to begin work in the last four weeks’ (Gallup, 2014: 14). Out of the workforce refers to ‘respondents who are out of the workforce were not employed within the last seven days, [. . .] are not looking for work, AND/OR are not available to start work’ (Gallup, 2014: 14). This category includes those who are not employed and are not looking for work, those who are retired, disabled, homemakers, or full-time students, and others not captured by the full-time, part-time, and unemployed categories. Out of the workforce serves as the referent category.

Country-level independent variables

We use the 2005 HDI from the United Nations Development Report Program (2005). The Gini index is the most common operationalization of inequality cross-nationally (Avison and Loring, 1986; Blau and Blau, 1982; Chamlin and Cochran, 2006; Krahn et al., 1986; Pratt and Godsey, 2003; Pridemore, 2008). We use the 2005 Gini Index (World Bank). If data were not available for 2005, we used data from the nearest year, but not exceeding a maximum of 10 years (Messner et al., 2002; Nivette and Eisner, 2013). Female labor force participation refers to the percent of the female population (15 years old or older) participating in the labor force in 2005 (World Bank). Data for the 2005 young male population (15 to 24 years old) come from the United Nations Department of Economic and Social Affairs (2012).

We also include two regional dummy variables, one for Latin America and the Caribbean (hereafter Latin America) and one for Sub-Saharan Africa (1 = country is in that region; 0 = otherwise). We use the United Nations Statistics Division’s geographic regions to identify countries as Latin American/Caribbean (22 countries) or Sub-Saharan African (24 countries) (United Nations Statistics Division, 2016). These are identified in Table 1. A correlation matrix for the country-level variables is available in Appendix B. The large number of countries used

Table 3. Hierarchical logistic regression results predicting violent crime victimization.

	Model 1		Model 2		Model 3		Model 4	
	OR	Robust SE	OR	Robust SE	OR	Robust SE	OR	Robust SE
Fixed effects								
Intercept	0.059***	0.082	0.039***	0.114	0.079**	0.950	0.290	0.992
<i>Country level</i>								
HDI					0.085***	0.571	0.088***	0.631
Gini					1.031***	0.007	0.994	0.009
Female labor					1.002	0.004	1.000	0.004
Young males					0.975	0.033	0.964	0.031
Latin America							3.695***	.186
Sub-Saharan Africa							1.999***	.210
<i>Individual level</i>								
Gender			1.079**	0.029	1.079**	0.029	1.077**	0.029
Age			0.994***	0.001	0.994***	0.001	0.994***	0.001
Single			1.115***	0.028	1.117***	0.028	1.115***	0.028
Separated			1.259***	0.061	1.261***	0.061	1.258***	0.061
Divorced			1.394***	0.068	1.399***	0.068	1.398***	0.068
Widow			1.115*	0.052	1.114*	0.052	1.114*	0.052
Domestic partner			0.960	0.044	0.963	0.044	0.960	0.044
Ln (income)			1.011	0.008	1.013	0.008	1.013	0.008
Full time			1.174***	0.032	1.174***	0.032	1.174***	0.032
Part time			1.275***	0.034	1.273***	0.034	1.272***	0.034
Unemployed			1.453***	0.078	1.453***	0.078	1.452***	0.078
Secondary education			1.139***	0.036	1.145***	0.035	1.145***	0.036
Tertiary education			1.248***	0.065	1.255***	0.064	1.254***	0.064
Urban			1.581***	0.048	1.581***	0.048	1.578***	0.048
Variance component	0.726***		0.761***		0.401***		0.276***	
Individual level N	208,750		208,750		208,750		208,750	
Country level N	112		112		112		112	

Note: Data from Gallup World Poll 2009-2013; *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$
 OR: odds ratio; HDI: Human Development Index

allows for all country-level variables to be included in the models without combining them into factors.⁴

Method

We estimate a two-level logistic regression model with robust standard errors, which takes into consideration the correlation between the responses of individuals (level 1) residing in the same country (level 2) and allows us to estimate measures on both levels of analysis simultaneously. Individual data are weighted to be nationally representative. We control for survey year in all models, although we do not display the results. Results for these models are presented in Table 3. Odds ratios (ORs) are reported such that ratios above one represent a measure being associated with an increase in the odds of being victimized and values below one represent a measure being associated with a decrease in the odds of being victimized.

Results

We begin by estimating a null random-intercepts-only model (Model 1). Table 3 presents the variance components from this model and shows that violent victimization significantly varies across countries (variance component: 0.726). The intra-class correlation coefficient is 0.18 ($0.726/0.726 + 3.29^5$), which means that 18% of the variation in violent victimization is across nations.

Individual level

Model 2 adds the individual-level variables to the model. Consistent with routine activities theory, males are significantly more likely to be assaulted, whereas older individuals are significantly less likely. The odds of being assaulted are roughly 8% higher for males compared to females. Single, separated, divorced, and widowed individuals are significantly more likely to be assaulted compared to married individuals. In particular, divorced individuals and separated individuals have roughly 40% and 26% higher odds of being assaulted respectively compared to those who are married. There is no significant difference between married individuals and those with a domestic partner. The coefficient for age is negative and significant—a 1 year increase in age decreases the odds of being assaulted by 0.6%. Working full time, working part time, and being unemployed are significantly associated with a 17%, 28%, and 45% higher odds of being assaulted respectively compared to those who are out of the workforce. Individuals with tertiary education are significantly more likely than those with primary education (or lower) to be assaulted (OR = 1.248) as are those with secondary education (OR = 1.139). Logged household income does not have a significant association with assault victimization. This means there are mixed results regarding the relationship between socioeconomic status and risk of assault victimization. The largest individual-level effect in the model is for urban residence. The odds of being assaulted are 58% higher for individuals who live in an urban area compared to those who do not (OR = 1.58).

Country level

Model 3 adds the country-level variables excluding region to Model 2. Looking at the country level, the young male population and female labor force participation are not significantly associated with assault victimization net of the other variables. HDI is significantly associated with a reduction in assault victimization and decreases the odds of assault victimization by approximately 91.5%. Inequality is significantly associated with an increase in the odds of assault victimization. Model 4 controls for Sub-Saharan Africa and Latin America. Net of region, inequality no longer has a statistically significant relationship with assault victimization and thus, its previous relationship is entirely explained by region. Latin America has the largest effect on assault victimization (OR = 3.695) and increases the odds of victimization by roughly 270%. Sub-Saharan Africa has the second largest effect in the model (OR = 1.999). The intra-class correlation coefficient for this model is 0.077 ($2.76/2.76+3.29$), which means that only 7.7% of the variation in violent victimization across countries is unexplained by the variables in the model. Because the intra-class correlation coefficient was not reduced by the inclusion of the individual-level variables, it was halved entirely by the country-level predictors in large part due to the regional variables.

Discussion and Conclusion

Past research on cross-national victimization relied primarily on small country samples, which underrepresented undeveloped countries. Because of that, it was unclear whether results from those studies applied more broadly. The current study tested concepts from routine activities and lifestyles theories using a larger, more diverse sample. Many findings were consistent with past research. The results for the socio-demographic variables support lifestyles theory. The strong positive effect of urban residence supports routine activities theory; urban areas are often optimal locations for crime in their convergence of potential offenders and suitable targets and we find that individuals who reside in urban areas are significantly more likely to be victimized. This finding is consistent with past research using the ICVS (van Kesteren et al., 2014; van Wilsem et al., 2003) and suggests the generalizability of the finding to a larger more diverse sample of countries.

Routine activities theory is also supported by the marital status effects. Married individuals are theorized to be at a lower risk of victimization due to engaging in few risky activities outside of the home and not living alone (Cohen et al., 1981; Lee, 2000; Stein, 2010). The results show that married individuals have a lower risk of violent victimization compared to all other marital statuses except domestic partnership, which aligns with routine activities theory as those with a domestic partner are likely to also engage in fewer risky activities and do not live alone. As past research using the ICVS has generally used binary measures of marital status (e.g. married or single) (van Kesteren et al., 2014; Lee, 2000; Uludag et al., 2009; van Wilsem et al., 2003), this study contributes to the literature by showing that domestic partnerships have a similar protective effect against violent victimization as marriage. Additionally, it suggests that the difference in the likelihood of violent victimization between those who are single or widowed compared to those who are married is small, whereas the difference is larger for those who are separated or divorced. Future cross-national victimization research would benefit from further exploring these differences. Consistent with past research using the ICVS (Carcach, 2002; Stein, 2010, 2011; van Wilsem et al., 2003), we found that men are more likely than women to experience violent victimization and age is inversely and significantly related to violent victimization. However, these differences are small; still, because the outcome of interest is violent victimization, even a small increased likelihood is meaningful.

In terms of socioeconomic status, like van Wilsem et al.'s (2003) study, this study finds no significant relationship between income and the likelihood of violent victimization. This may be because income is not a strong measure of target attractiveness for violent victimization (van Wilsem et al., 2003). In contrast, we find a significant relationship between education and violent victimization, but not in the expected direction. Lower socioeconomic status is expected to be associated with an increased risk of violent victimization. However, these results show that compared to primary education, secondary and tertiary education significantly increase the odds of experiencing violent victimization. This may be because individuals with more education participate in more activities outside the home, placing them at a greater risk of victimization (Uludag et al., 2009) or because those with higher levels of education are better able to respond to survey questions (e.g. they understand what mugging and assault mean) (Hough, 1984). We also found that working full time or part time and being unemployed increases the odds of experiencing violent victimization compared to being out of the workforce. This is contrary to Miethe et al.'s (1987) argument that employment should increase guardianship and reduce the suitability of the target. It is, however, consistent with Kennedy and Forde's (1990) finding that working or attending school is positively associated with victimization. The current study adds to the literature by

having a distinct measure for employment that does not combine attending school with working and separates being unemployed and actively looking for a job from being out of the workforce entirely. Future research would benefit from further exploring the connection between education, work, and violent victimization.

On the country level, region has the largest effect on individual-level victimization even controlling for common structural predictors—HDI, inequality, female employment rate, and young male population rate. Thus, the effect of region cannot be reduced to these structural factors. Yet prior individual-level victimization studies do not analyze regional associations. Although raw country data show that Latin America and Sub-Saharan Africa have the highest rates of violence of any region, this does not allow for determining why that is the case. This study shows that the effect of Latin America and Sub-Saharan Africa is not due to the most commonly discussed structural predictors of violent crime including poverty and inequality. One possibility is that these regional variables are capturing cultures of honor as suggested by Neapolitan (1994) and Corcoran and Stark (2018). In terms of routine activities theory, cultures of honor would increase the motivation for violent crime, the opportunity to engage in it, and the proximity to motivated offenders. Notably, controlling for region, the significant effect of inequality on violent crime is attenuated. Thus its initial relationship with violent crime was likely due to its association with region. This is different from research using the ICVS, which typically finds a positive relationship between inequality and violent crime (Stein, 2011; van Wilsem et al., 2003; van Wilsem, 2007). Future studies should further investigate what is driving these regional effects and should, at minimum, control for Latin American and Sub-Saharan African regional indicators in all cross-national crime victimization studies to avoid spurious relationships between country-level variables and victimization.

This study is not without limitations. First, the question measuring the dependent variable assumes that respondents have knowledge of definitions of mugging and assault. However, the GWP is the only dataset that asks a victimization question in such a large number of countries using consistent question wording, which outweighs the disadvantages of the question itself. Second, the GWP does not allow those in full-time education to be separated from other work categories. Even so, the findings for the work measures are consistent with predictions from routine activities theory.

This study makes several contributions to the literature. First, it moves beyond using the ICVS and uses a larger, more globally representative survey. For findings that are consistent with the ICVS, this shows the generalizability of the ICVS findings to a larger sample. Second, it shows the potent effects of Latin American and Sub-Saharan African regional predictors on violent crime victimization and the need to control for them to avoid spurious relationships. Third, the findings suggest that marriage and domestic partnership have similar protective effects against violent victimization cross-nationally and that being unemployed and actively seeking employment should be separated from being out of the workforce in cross-national victimization studies. Finally, we find strong support for routine activities and lifestyles theories using a large diverse country sample.

Notes

1. The weights account for oversamples, household size, national demographics, non-response, unequal selection probability, and design effects.
2. Although the ICVS, on average, has a larger number of respondents per country, the GWP's samples are representative when weighted and include a much larger country sample than the ICVS, making it preferable for studying a larger number of countries and regions of the world.
3. At the country-level (after aggregating and weighting this measure), our measure of violent victimization is correlated with homicide rates at 0.60. This measure of homicide rates comes from the United Nations

Office on Drugs and Crime and is the average intentional homicide rate across all available years from 2005 to 2011. This correlation is similar to the correlation that van Wilsem (2004) found between homicide rates and self-reported non-lethal violence (0.56, $p < 0.01$).

4. The statistical software package HLM was used to estimate the models. HLM will not allow the models to be estimated if there is too much multicollinearity. Moreover, we also estimated single-level models with standard errors clustered by country and the variance inflation factors were all under 5. This suggests that multicollinearity is not a problem for the models.
5. The level 1 residual variance for a logistic model is 3.29 (Snijders and Bosker, 1999).

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Appendix A

Table 4. Country data used by survey year.

	2009	2010	2011	2012	2013
Afghanistan		X			
Algeria		X			
Argentina	X	X	X	X	X
Armenia	X	X			X
Australia		X			
Austria	X	X			
Bangladesh	X	X			
Belarus	X	X			X
Belgium		X			
Bolivia		X	X	X	X
Botswana		X			
Brazil	X	X	X	X	X
Bulgaria	X	X			
Burkina Faso		X			
Burundi	X				
Cambodia		X			
Cameroon		X			
Canada	X	X			
Central African Republic		X			
Chad	X	X			
Chile	X	X	X	X	X
China	X	X			
Colombia	X	X	X	X	X
Comoros		X			
Congo, Kinshasa	X				
Costa Rica		X	X	X	X
Czech Republic	X	X			
Denmark	X	X			
Djibouti		X			
Dominican Republic	X	X	X	X	X
Ecuador	X			X	
Egypt		X	X	X	
El Salvador	X	X	X	X	X
Finland		X			
France	X	X			
Georgia	X	X			
Germany	X	X			
Ghana	X				
Greece	X	X			
Guatemala	X			X	X
Haiti		X	X	X	X
Honduras	X	X	X	X	X
Hong Kong	X	X			
Hungary		X			

(continued)

Table 4. (continued)

	2009	2010	2011	2012	2013
India	X	X			
Indonesia	X	X			
Iraq		X			
Ireland	X	X			
Israel	X	X			
Italy	X	X			
Jamaica			X		X
Japan	X	X			
Jordan		X			
Kazakhstan	X	X			X
Kenya		X			
Kyrgyzstan	X	X			X
Latvia	X				
Liberia		X			
Lithuania	X	X			
Luxembourg		X			
Macedonia	X				
Malawi	X				
Malaysia	X	X			
Mali	X	X			
Mauritania		X			
Mexico	X	X	X	X	
Moldova	X	X			X
Mongolia		X			
Nepal	X	X			
Netherlands		X			
New Zealand		X			
Nicaragua	X	X	X	X	X
Niger	X	X			
Nigeria	X	X			
Pakistan	X	X			
Panama	X	X	X	X	X
Paraguay	X	X	X	X	X
Peru	X	X	X	X	X
Philippines	X	X			
Poland	X	X			
Portugal	X	X			
Romania		X			
Russia	X	X			X
Rwanda	X				
Senegal	X	X			
Sierra Leone		X			
Singapore	X	X			
Slovakia		X			
Slovenia	X	X			
South Korea	X	X			
Spain	X	X			

(continued)

Table 4. (continued)

	2009	2010	2011	2012	2013
Sri Lanka	X	X			
Sudan		X			
Suriname				X	
Switzerland	X				
Syria		X			
Tajikistan	X	X			X
Tanzania	X	X			
Thailand	X	X			
Trinidad & Tobago			X		X
Tunisia		X			
Turkey	X	X			
Uganda	X	X			
Ukraine	X	X			X
United Kingdom	X	X			
United States	X	X			
Uruguay	X	X	X	X	X
Uzbekistan	X	X			X
Venezuela	X	X	X	X	X
Vietnam	X				
Yemen		X			
Zimbabwe		X			

Appendix B

Table 5. Country-level correlation matrix.

	HDI	Gini	Female labor	Young males	Latin America	Sub-Saharan Africa
HDI	1					
Gini	-0.376	1				
Female labor	-0.164	0.144	1			
Young males	-0.721	0.416	0.022	1		
Latin America	0.067	0.555	-0.04	0.171	1	
Sub-Saharan Africa	-0.743	0.332	0.349	0.373	-0.258	1

HDI: Human Development Index