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Peer Association and Routine Activities in Sex Worker Patronage among Male Migrant Workers

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ABSTRACT

Studies of people who buy sex often focus on psychological and personality factors with less attention paid to the role of social contexts. This study integrates the two lines of inquiry, routine activity theory and peer deviance, to examine the social process of paying for sex. We argue that deviant peer association may shape buying sex due to peers' role in shifts in the three components of routine activity theory: motivation, targets, and lack of guardians. With rich information on sexual behaviors from the China Migrant Sexual Health Survey ($n = 1,521$), we conducted a series of regressions and structural equation models on commercial sex behaviors among male migrants. Our findings demonstrate that having more peers engaged in deviance is significantly associated with buying sex; the three routine activity components are also significantly associated with buying sex; the peer effect on buying sex is significantly (39% of the variance) mediated by routine activities. These results help understand the role of routine activities in mediating peer association and buying sex, and also contributes to the literature of sex work on the less-studied population of sex work clients in China. Theoretically, the results provide evidence for the role of peers in shaping routine activities.

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Introduction

As sex work is colloquially known as “the oldest profession,” we may perhaps consider the clients of sex workers to be “the oldest customers.” Yet, the literature on the clients of sex workers lags behind that on the profession of sex work and sex workers in terms of the number of publications¹ and depth of analysis. In a key review of the status of research on sex work professions, Vanwesenbeeck (2001) noted the comparative shortage of studies on clientele. When the clients are indeed studied, their psychological motives receive disproportionate attention and often suggest a pathological perspective or focus on STD-inducing transmission. However, buying sex has a number of profound social causes beyond psychological traits and cannot be understood as an isolated individual choice without referring to the social processes through which potential clients learn about, get initiated, and conditioned into buying sex. This is especially the case in non-Western societies such as China.

Central to this process, as we argue, are deviant peer associations. Especially within the majority of the societies where buying sex is either illegal or culturally disapproved, an interested individual cannot easily purchase sex in isolation. The complicated signal systems and avoidance deployed by sex workers and sex venues may lead novices to directly or indirectly rely upon experienced peers. A number of studies have documented the importance of deviant peers in paying for sex (McKeganey and Barnard 1996; Pan 1999; Sanders 2013; Vanlandingham et al. 1998; X. Y. Yang, Kelly, and Yang 2016; X. Y. Yang and Yang 2019; Zheng 2006). However, questions remain regarding

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¹A crude Google Scholar search for “sex work client” returns one third the size of that for keyword “sex worker”.

the mechanisms of peer effects on buying sex. Deviant peer association is largely linked to paying for sex through an unknown “black box,” to which related studies on other types of deviance have attributed to factors such as norms, personality, and exposure opportunities (Fujimoto, Unger, and Valente 2012; Haynie and Osgood 2005; McGloin 2009; Warr 2002). To close this gap in the literature, we leverage the conceptual framework of routine activity theory and argue that deviant peer association affects buying sex indirectly through shaping the three routine activity components: a motivated actor (sufficient desire for pleasure obtainable via commercial sex), an available target (the existence of venues with sex workers present), and the lack of guardians (agents against buying sex). These three components of routine activity theory are argued as the necessary conditions for the conduct of any negatively sanctioned behavior – the behavior need not be inherently illegal (Clarke and Felson 2004; Eck 1995; Felson and Cohen 1980).

Toward these ends, with a sample of Chinese migrant workers from two capital cities ($n = 1521$), we conducted a series of negative binomial regressions and structural equation models to examine the mediated relationships between peer deviance, routine activity components, and buying sex. In this manner, we integrate routine activity theory with frameworks on peer association to assess how they come together to shape patterns of deviance. We also add to the literature on sex work and the purchase of sex outside of a Western context.

Peer association and buying sex

In current scholarship, association with deviant peers is perhaps one of the most unambiguous factors for individual engagement in a range of deviant behaviors. Extending back to early studies of deviance, differential association theory points to the techniques and favorable definitions of deviance transmitted by learning from friends (E. H. Sutherland 1939; E.H. Sutherland and Cressey 1994), regardless of whether the individual belongs to a deviant subculture (R. L. Akers, 1996). People may surrender themselves to the normative conduct of a peer group out of fear of ridicule or a need for belonging or simply to perform along in the anonymity covered during group participation (Warr 2002). The different types of deviant behaviors developed out of peer association include buying sex, unprotected sex with multiple partners, violent aggression, and substance use (Kelly et al. 2012; McGloin 2009; Vanlandingham et al. 1998; X. Y. Yang, Kelly, and Yang 2016). Sexual behaviors, as an integral part of human social life, are rarely individualistic; they are organized by a collective social environment that consists of supra-individual forces such as interpersonal networks, sexual scripts, and legal and cultural sanctioning institutions (Frank 2019; Laumann et al. 2004). Deviant sexual activities manifest what was embedded in and encouraged by the cultural net of peer norms and expectations. As explained by sexual script theory, “sexual conduct is behavior as prescribed or evaluated by the group. It is behavior that expresses a norm or evaluation” (Gagnon and Simon 2005: 153). Buying sex exemplifies such processual conduct subjected to the influence of peer expectation and peer habits, which then channel desire and impulse into a scripted sexual conduct with an in-group appropriate target such as sex workers.

Deviant peer association may be a preeminent antecedent for buying sex, mostly because buying sex is difficult within a context of criminalization without introduction via peers who have already acquired experience doing so. In some respects, it is not entirely distinct from purchasing and using illicit drugs; it is possible to do so alone, but typically peer networks play a role in such processes (Kelly and Vuolo 2019). Sex work markets meet the definitions of a black market in most countries; its semi-underground or entirely covert mode of operation does not openly signal sexual commodities to all people (Pitcher and Wijers 2014; Weitzer 2012). To avoid detection and sanction, underground activities typically deploy distorted signals that require a complicated deciphering process, effectively excluding newcomers without connections to a knowledgeable insider (Gambetta 2009). In practice, when the legal and social world of sex work involves a series of hidden scripts and risks, most novices are severely incapacitated by their ignorance of sex work information and the hidden rules governing the transaction (Laumann et al. 2004; McKeganey and Barnard 1996), preventing many potential

clients of sex work from successfully seeking out the right target (Holzman and Pines 1982). Thus, although sex work in some legalized contexts may facilitate isolated consumers (Milrod and Monto 2017; Pitts et al. 2004), buying sex in many illegal or underground contexts occurs only after a social learning process via association with peers. These social underpinnings may be particularly acute in cultural contexts in which the pursuit of sex occurs within a collective social context, most typically groups of men.

The role of peer association assumes two forms depending on the frontstage and backstage of these processes. In the frontstage, peers may directly participate in an individual's sex work patronage, serving as introducers or companions; in the backstage, deviant peers may transmit to an individual the values, norms, information, and scripts for buying sex. Empirically, a number of studies have documented both the frontstage and backstage roles of peers in buying sex, particularly outside Western contexts. Ethnographers have found that Chinese men often patronize sex workers when in small groups together and often these venues are contexts of wider socializing, such as entertainment venues (Uretsky 2016; Zheng 2009). In such contexts they learn from peers about the quality, price, and entrance methods of the targeted sex workers (Vanlandingham et al. 1998). Notably, many of the venues where opportunities to purchase sex occur are sites of socializing more generally via drinking, smoking, and conviviality with peers, rather than locales strictly dedicated to sex work. In China, patrons of sex work also exchange information about sex workers, discuss the quality and safety of sex venues, and even pay for their peers' sex experiences as a form of generalized exchange with expected returns (Pan 1999; Zheng 2009). In this manner, peers may play both direct (via purchasing sex for a friend in accordance with norms of generalized reciprocity) and indirect (such as dictating the venues for the peer group's socializing) in patronizing sex workers. Other types of peer interactions related to learning to navigate paying for sex may occur virtually. A qualitative study based in the UK found Internet-based virtual communities led sex work clients to share their experiences, and some of them even meet offline (Sanders 2013). In summary, peers serve as an unequivocal factor in shaping the likelihood and patterns of buying sex.

The black box of peer association and buying sex: Integrating routine activity theory

While peer association is a very important factor underlying paying for sex, it is unclear how deviant peers actually increase such a risk and what mechanism is behind the association. In fact, the mechanisms between peer association and one's own behaviors are long considered a black box for which detailed explanations are needed (Warr 2002; Warr and Stafford 1991; Young et al. 2014). Behind this gap in the literature is the simplicity that treats the role of peer association in deviance as a given fact. While many studies have shown that peers may serve as companions in deviance or transmit norms about commercial sex, these pathways are individually established without a framework synthesizing them under a consistent theoretical framework. In this section, we will demonstrate that routine activity theory can serve as a framework in explaining the role of peer association in buying sex.

Routine activity theory provides a powerful framework to explain the association between deviant peer association and buying sex. Routine activity theory contends that there are three necessary conditions for any negatively sanctioned behavior to occur (Clarke and Felson 2004; Cohen and Felson 1979; Felson and Cohen 1980): the motivation to conduct the behavior (individuals are motivated to experience pleasure via sex), available targets (sex workers and sex venues), and a lack of guardians (individuals who police behavior against buying sex). There is a wealth of literature that discusses the routine activity pattern of a variety of deviant behaviors, including violence against women and predatory sexual behaviors (see (Pratt et al. 2014).

Routine activity theory excels at its generalizability because it does not assume the inherent nature of a deviant behavior.² The theory is surprisingly underutilized to investigate the types of deviance in which the demarcation between perpetrators is ambiguous, such as in sex work. Fortunately, there are exceptions. Kringen and Felson (2014) consider prostitution within the scope of routine activity

theory as mutualistic deviance where a sex worker must meet a client in the absence of police and romantic partner. In separate branches of scholarship, strong motivations via hedonism beliefs or sensation-seeking have proven to be correlated with paying for sex (McCoul and Haslam 2001; Wilson, Manual, and Lavelle 1992; Xantidis and McCabe 2000). Regarding the lack of guardians, the literature provides abundant evidence showing that people tend to engage in deviant sexual behaviors, such as paying for sex, when detached from families and spouses (Muñoz-Laboy, Hirsch, and Quispe-Lazaro 2009; X. Yang 2010), when unsupervised or unaccompanied (Muñoz-Laboy, Hirsch, and Quispe-Lazaro 2009; Stack, Wasserman, and Kern 2004), or when the deterrence of authorities diminishes (Chalfin and McCrary 2017).

Deviant peer association may change the configuration of routine activity factors because peers make up a major part of people's social lives and lifestyles. It is with peers that adults and adolescents often spend considerable time, acquire information, make decisions, visit different venues, utilize amenities, and these interactions ultimately influence their routine activities. In other words, peers are central for how routine activities unfold within individual lives. Our reframing of the relationship between deviant peers and routine activities further suggests that deviant peers afford not only such opportunities to buying sex, they specifically achieve this end by influencing motivations, providing targets, and removing or obscuring guardianship against buying sex.

There are reasons to expect peer associations to shape each of the three components of routine activities. A wealth of literature argues that peer association has a strong impact on an individual's motivations for deviant decision-making. Dating back to Sutherland's (1939) research, the literature has identified how peer network shape positive appraisals of deviant behavior. Peers may also inspire those within their networks to engage in deviance (Warr 2002). Osgood and colleagues proposed and found that unstructured time spent with same-age friends is associated with adolescent delinquency because unstructured peer association fulfills the conditions of deviant routine activities (Osgood et al. 1996). Using diary data, Hoebe and Weerman (2016) detailed how spending more time outside with friends increases adolescents' exposure to deviant learning. In this study, peer effects contribute to potential deviance not only through exerting group pressure but also through indirectly altering the tolerance of deviance, thus increasing the motivations for such actions. Theories of normalization (e.g. Parker, Aldridge, and Measham 1998) also suggest the normalized perception of deviance may motivate such behaviors. Overall, the literature further suggests that peers can motivate others to engage in deviance such as paying for sex. In this context, peers may enhance motivations by shaping desires for pleasure obtainable via paying for sex.

Although less considered within the literature, the role of peers in routine activities also applies to targets and guardians. Countless studies identify that it is from their friends that people learn about where to find illicit drugs and how to evade detection by police or parents. Many studies emphasize peers as a source of deviance learning par excellence (Brook, Lukoff, & Whiteman, 1977; Glynn, 1981; Perry, Kelder, & Komro, 1993) and these learning experiences help shape target identification and guardian avoidance. Regarding the targets in buying sex, potential clientele acquire from experienced peers the quality and safety of venues with sex workers present, price and service offered by sex workers, and their locations (McKeganey and Barnard 1996; Sanders 2013; Zheng 2009). Furthermore, as noted above, peers play a role in deciding which venues to attend during an evening of socializing, thus shaping whether the group spends time in venues with sex workers during an evening out. The role of peers in guardianship is somewhat more ephemeral. Peers tend to attenuate the role of guardians in deterring deviant behavior. One such study showed non-significance of parent and school factors in adolescent delinquency once peer effects were controlled, implying the impact of peer association on the experience of guardianship (Le, Monfared, and Stockdale 2005). In addition,

²The theory was initially proposed as an ecological explanation of deviance for its emphases on situations rather than the nature of the deviance and actors. Many otherwise normal behaviors can be understood by the three factors of motivation, targets, and guardians when the behaviors are negatively sanctioned. For example, if BDSM faces legal or social punishment, in order to have sex, a BDSM participant needs sufficient sexual motivation, a target partner, and no guardians against them.

with the context of male migrant workers, strong social bonding experiences with peers may diminish the felt need to have a spouse or family accompany one to the destination city, as peers provide opportunities for social interactions and reduce loneliness. This may especially be the case for male migrant workers who travel with hometown peers to the destination cities for work opportunities (X. Y. Yang, Kelly, and Yang 2016; X. Y. Yang and Yang 2019). Thus, peer association is an indispensable condition for carrying out all three components of routine activities.

The current study

As discussed above, the relationship between peer deviance and buying sex remains a black box process that has been less well examined under a systematic and consistent theoretical framework. On the side of routine activity theory, the literature has revealed that most studies have not specifically tested how deviant peers simultaneously affect each of the three components of routine activity theory. The need for testing the specific relationships between routine activity components and peer association arises from the fact that deviant peers may not equally affect each key component in routine activities. As suggested by Haynie and Osgood (2005), the normative influence from peers is not as strong as the opportunity afforded by peer association in the formation of one's own deviant behaviors. Sometimes, providing access to available targets and competing for the time that could be otherwise spent with authority figures (and thus removing effective guardianship) becomes a more important function of deviant peer associations than imposing motivations (Warr 2002; Warr and Stafford 1991).

A likely reason why few empirical studies have explicitly tested how peer association affects all the three major components (motivation, targets, and the lack of guardians) of routine activity theory lies in measurement problems. Bursik and Grasmick (1993: 77) found it "notoriously difficult to collect reliable and valid indicators of its central components ... the information needed to rigorously measure the routine activities components is not available in many datasets." As summarized by Pratt and Turanovic (2016), many studies used proxies at the macro-level for routine activity components, but such measurements at a higher ecological level failed to capture "the differential risks associated with what one is actually doing outside."

In this study, we will use the three components from Felson and colleagues' routine activity theory as mediators to explain the effects of peer deviance on buying sex, that is, explicitly testing how deviant peer association *motivates* individuals, deprives or counteracts *guardianship* against buying sex, and provides them with situated *targets*. We will employ regressions and structural equation modeling at different stages to test the following hypotheses:

H1. *Motivations are positively associated with buying sex.*

H1a *Availability of targets is positively associated with buying sex.*

H1b. *The presence of guardians is inversely associated with buying sex.*

H2. *Deviant peer association is positively associated with buying sex.*

H3. *The effect of peer association on buying sex is mediated by the three routine activity factors.*

Methodology

Sampling

Routine activity theory was developed against the broader backdrop of an industrializing American society that had shifted daily activities from home to other non-household locations as a consequence

of large-scale migration (Cohen and Felson 1979). Contemporary China has experienced similar trends in migration and industrialization akin to that which occurred within the U.S. previously. This phenomenon renders datasets with detailed sexual behavior information among migrants within China particularly useful for the purpose of testing peer association and routine activity theory.

Our sample came from the first wave of the China Migrant Sexual Health Survey which used a multi-stage systematic sampling procedure to recruit participants in two Chinese cities in 2011. Compared to non-migrants in China, migrant laborers have a considerably elevated risk of using commercial sex – e.g. 10–27% vs. 6–10% (Chen et al. 2009; T. Yang et al. 2012). The survey was conducted in two provincial capital cities ranked as the largest hubs of rural-urban migration influx; both provinces together received about 30% of China's rural-urban migrants in 2011 (National Bureau of Statistics 2012). The survey lasted on average for 30 minutes and was self-administered in residences private space. Staff were on-site to assist those participants who had difficulty completing the questionnaire due to low literacy levels. Respondents were given a small token of appreciation (toothbrushes and toothpaste) for their participation in the study. The survey protocols were approved by the local IRB (BLINDED).

Measurement

Dependent variable: As we have discussed in the literature review, one of the reasons why the core components of routine activity theory are less directly tested is due to the lack of appropriate measurement from surveys. The China Migrant Sexual Health Survey contains detailed questions regarding migrants' daily sexual activities, as well as those of their friends. For the dependent variable of sex worker patronage, the survey first asked a filter question "Have you had non-marital sex?" Respondents who answered yes moved to another question "Which type of people did you have non-marital sex with: mistress, girlfriend, prostitute, others?" – more than one type of sex partner could be indicated. Those who chose "prostitute" were again directed to another two questions: "How many times have you been to a prostitute?" and "How many prostitutes have you had sex with?" The respondents answered these questions from two scales consisting of 1, 2–3, 4–5, 6–7, 8–9, more than 10 times/people.

Routine activity components: We adopted a hedonism scale to measure the degree to which the respondents were motivated to pursue sensually rewarding activities highlighting the notion of "corporal pleasure," even when such pursuit may conflict with a rational cause. Hedonism or sensation-seeking have been found in previous studies as antecedent motives of a range of sexual behaviors (McCoul and Haslam 2001; Wilson, Manual, and Lavelle 1992; Xantidis and McCabe 2000; Zuckerman 2014). On a 7-point Likert scale, respondents rated their level of agreement on "life is a dream, its purpose is to enjoy pleasure", "money should be first spent on having fun", "you can never worry about enjoying too much pleasure", "time flies, you should have fun as soon as possible."³ To measure the suitable target within routine activity theory, subjects responded to whether they have been to three types of places: bath center, entertainment establishment, and "yellow video" room (erotic/porn video room), and coded 1 for each they had frequented. These places are typical social settings potentially featuring sex workers in urban China and are often patronized by groups of socializing males (Pan 1999; Zheng 2009), and for these reasons are often targeted by public health experts for interventions (Li et al. 2009). Having access to these venues increases the likelihood of meeting sex workers (potential targets), but does not necessarily imply one must buy sex when such targets are present. One may go to an entertainment venue only for socializing with peers or to an erotic theater for purely personal purpose or as part of a general evening of socializing, but this does not weaken routine activity theory's premise: the presence of potentially suitable targets is a necessary but insufficient condition of deviance. For guardians or the lack thereof, we adopted indicators

³"Enjoy pleasure" is translated from Chinese *xiangle*, "have fun" is translated from *xingle*, both carry strong connotation of indulgence in corporal pleasure.

“Where is your wife when you work away from your hometown?” and “Where are your children when you work away from your hometown?” Those answered ‘stays with me’ were coded 1, those without a spouse or answered ‘stays in my hometown’ or ‘in another city’ were coded 0. Months spent with family every year is an important indicator of the guardian effect, especially as the spouse of a migrant worker may be present for only parts of the year. Scholars (Felson 1995; Hollis-Peel et al. 2011) refer to this type of guardian as “intimate handler” who imposes informal social control against individualistic deviance such as drug use, suicide, or sex work. Previous studies suggest that, compared to formal deterrence, informal social control provides a more effective means of surveillance and social control for many nonviolent forms of deviance (Anderson, Chiricos, and Waldo 1977; Craig and Foster 2012). Studies of sexual behavior also show that the presence of children can serve as “whistleblower” to deter adults from non-normative sexual behaviors (R. Akers and Sellers 2000; Stack, Wasserman, and Kern 2004).

Peer association: The classic differential association theory argues that associating with deviant peers allows one to learn favorable definitions of deviance through perceived peers deviance (E.H. Sutherland and Cressey 1994). Meanwhile, Akers (1996) and Warr (Warr 2002; Warr and Stafford 1991) have pointed out that merely the intensive presence of the peers is enough to shape conformity. We measured deviant peer association by the perceived behaviors within their network of peers. The survey asked respondents to estimate the percentage of their friends who had received massages from a girl in a bath center, had sexual services in an entertainment venue, or had sex with a prostitute in general.

Covariates: Control variables included the homogeneity of friend networks, as well as the individual’s income, highest level of education, age, smoking status, drinking status, type of residency, and HIV safety beliefs.

Some studies have criticized that respondent-estimated peer deviance could be a weak indicator of actual peer deviance. People tend to project their own behaviors onto their friends’ behavior to cognitively normalize their deviant conduct. In such scenarios, respondent-estimated peer deviance may be less precise than actual peer deviance and is simply a projection of a respondent’s own behavior (Weerman and Smeenk 2005; Young et al. 2014). Without network data, we must rely on the respondent-estimated peer deviance. However, a cross-comparison of the measurement in Appendix A shows that such estimates cannot merely be a projection of the respondent’s own behaviors. The estimated percentages of deviant peers are consistently and significantly higher among those who initiated commercial sex in the company of peers or referred by peers, as compared to those initiating on their own. These significant differences between the two groups cannot be simply a projection of self-behaviors, since both have patronized sex workers. Instead, the presence of deviant peers indeed elevated the estimates of peer deviance in our study. Furthermore, Young et al. (2011) found the misperception of peer deviance is systematically affected by the density of peer networks, which is itself a controlled covariate in our study. Therefore, although imperfect, our measurements of choice can still be used as a valid proxy for deviant peer association.

Statistical analysis

We first examined whether migrants’ motivation, the existence of targets, and the absence of guardians significantly contribute to buying sex using multiple regression. The count data with overdispersion led us to employ negative binomial regression instead of ordinal linear regression. The possible scenario that not all respondents were exposed to sex purchasing opportunities for equally long time periods requires us to treat the length of stay as an exposure offset so that the coefficients will be for $\log(y_i/time_i)$ instead of y_i (Hutchinson and Holtman 2005; Long and Freese 2006). We report both p -values and 95% Confidence Intervals for the coefficients, as well as pseudo R-square as the model fit. To construct motivation, targets, and guardians, we used the same indicators as we would for the structural equation modeling later, but here we summated the value of the indicators for each construct. In multiple regression, we have also included a variety of demographic covariates to account

for potential confounders, including income, education level, age, health beliefs about HIV, network homogeneity, health behaviors (smoking frequency and drinking frequency), and types of housing.

We then used structural equation modeling (SEM) to test the focal theory and the relationships between the three components of routine activity theory, peer association, and buying sex. There are several good reasons to use SEM for this type of research (Bollen and Pearl 2013; Kline 2005). First, SEM allows for simultaneous testing of the measurement model and the full model, which is essential when we have latent constructs with each consisting of several indicators (e.g. peer association is constructed by four indicators of peer behavior). Second, SEM is a confirmatory tool for evaluating hypotheses, as it allows us to configure measurement errors in confirmatory factor analysis before conducting causal analysis. Third, the basic methodology in SEM is to compare a model-based covariance matrix with a data-based covariance matrix for evaluating the model's goodness of fit. By doing this, SEM is capable of testing overall modeling as well as for individual constructs, of testing multiple dependent variables free of the normal distribution, and of modifying parameters to identify the best-fit model. Fourth, SEM provides a comprehensive comparison of direct effects, indirect effects, and total effects for mediation analysis, which cannot be fully expressed with multiple regression. The assumptions of the theoretical framework, especially that the key components should simultaneously contribute to a dependent variable, also necessitates the use of SEM as the testing tool.

The dataset used for the current study had very little missing data due to the rigorous design and conduct of the survey, and thus no specific procedures to handle missing data were needed. To address the non-normal distribution, a feature common in social science data, we used the recommended Asymptotic Distribution Free estimation method for estimation and performed 200 bootstraps for robust standard errors (Lee 1986). We confirmed the validity of constructing the three routine activity components using confirmatory factor analysis. We show four standard goodness-of-fit indices to evaluate the model's fitness (Kline 2005): the Tucker–Lewis Index (TLI), Comparative Fit Index (CFI), and goodness of fit index (GFI) close to 1 indicates perfect fit; the root-mean-square error of approximation (RMSEA) below 0.05 for good fit, and below 0.08 for acceptable fit (Browne and Cudeck 1992). The SEM was estimated using R's lavaan package (Rosseel 2012).

Results

Negative binomial regressions

Table 1 shows the descriptive statistics of the sample. There existed a fair number of migrant workers (25%) who had never solicited a sex worker. Table 2 shows two negative binomial regressions with the number of sex workers solicited and occasions solicited as dependent variables, testing the effects of motivation, targets, the existence of guardians, and peer association on buying sex after controlling for several demographic, attitudinal, and behavioral covariates. Both models showed similar goodness of fit as indicated by McFadden's pseudo-R-square and Maximum Likelihood R-square.

It is clear from the models that the routine activity variables are significantly associated with commercial sex paid for. Each additional level of motivation (of 28 levels) increases the number of sex workers solicited by a factor of 1.04 ($p < .05$). Similarly, people who had visited more target venues, solicited 36% more sex workers for each additional venue type ($p < .001$). Every one-unit increase in the presence of guardians decreases the expected number of sex workers by a factor of 0.82 ($p < .001$). Support for all H1 hypotheses is provided by these results.

When the dependent variable is the number of occasions of buying sex, all three components of routine activity theory continue to support the hypothesis. Motivation and the existence of targets are positively associated with more occasions of buying sex (per unit increases of 4% and 38%, respectively), while guardians' presence is negatively associated with it (reduced by a factor of 0.83), all highly significant after controlling for all other covariates. Figure 1 illustrates how the changing values in motivation, targets, and guardians lead to the changing number and times of paying for sex when other covariates were held at the mean (or at mode for nominal variables). At the same time, greater

Table 1. Descriptive statistics of the variables.

N = 1521	Proportion (%)	Mean (Standard Deviation)
Times solicited sex worker	25.0	1.89 (1.78)
-never	27.8	
-once	19.4	
-2-3 times	9.6	
-4-5 times	5.4	
-6-7 times	5.5	
-8-9 times	7.3	
-more than 10 times		
Number of sex workers solicited	25.0	2.39 (2.0)
-0	17.0	
-1	14.2	
-2-3	14.5	
-4-5	6.0	
-6-7	15.0	
-8-9	8.2	
-more than 10		
Motivated		4.47 (1.90)
-“life is to enjoy pleasure”		4.02 (1.83)
-“money should be used for fun”		3.77 (1.77)
-“don’t worry about having pleasure”		3.60 (1.87)
-“having fun as soon as possible”		
Target	76.0	
-bath center	70.3	
-entertainment venues	78.6	
-“yellow video” room		
Guardian	31.8	3.00 (2.53)
-stay with wife	17.4	
-stay with child		
-months unite with family		
Percentage of peers been to sexual venues	45.3	
-beauty salon	48.5	
-sauna	44	
-leisure venue	44	
-solicited sex worker	48.5	
Hometown-friend network		.92 (.59)
Length of stay in the city		5.53 (2.32)
Age (min = 16, max = 64)		30.65 (7.55)
Income (1 = <1000CNY; 6 = 5000CNY+)		3.29 (1.73)
Education	11.0	
-elementary school or below	52.3	
-junior high	25.8	
-high school or vocational	10.9	
-college or above		
HIV safe belief		4.53 (1.48)
Smoking	64.6	
Drinking	46.3	
Types of residency (ref = workers camp)	39.8	
-rental apartment	2.9	
-relative's place	21.8	
-work unit's dorm		

peer deviance is also positively associated with one’s own level of buying sex (1.01, $p < .001$), an effect that remains significant after controlling for routine activities factors and other covariates. These results provide support for hypothesis H2.

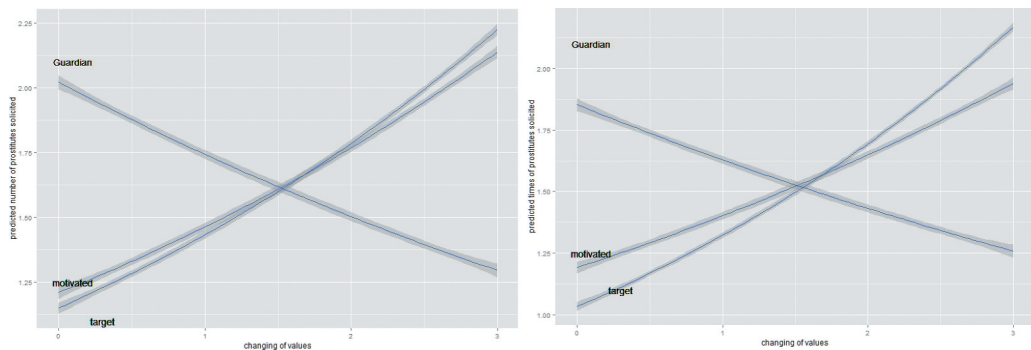
Measurement model

Before investigating a full structural equation model, it is necessary to first conduct confirmatory factor analysis on the three key components. The confirmatory factor analysis enables us to further

Table 2. Negative binomial regressions of the number and occasions of prostitute patronage on summated routine activity components.

	Number of prostitutes patronized N = 1513		Occasions patronized N = 1513	
	Odds Ratio	95% C.I.	Odds Ratio	95% C.I.
Motivated	1.04*	1.00, 1.07	1.04*	1.01, 1.07
Target	1.36***	1.27, 1.45	1.38***	1.29, 1.47
Guardian	.82***	.76,.88	.83***	.76,.90
Deviant peer behavior	1.01***	1.01, 1.01	1.01***	1.01, 1.01
Hometown friend network	1.96***	1.77, 2.16	1.40***	1.26, 1.55
Age	1.00	.98, 1.02	.99	.99, 1.01
Income	1.01	.98, 1.03	.97*	.94, 1.00
education	1.11***	1.04, 1.18	1.03	.97, 1.09
HIV safe belief	1.03**	1.02, 1.04	1.04*	1.01, 1.08
Housing (ref = workers camp)	.59***.63***.61***	.51,.68.47,.86.52,.70	.74***.97.50***	.64,.85.86, 1.08.43,.58
-rental apartment				
-relative's place				
-work unit's dorm				
Smoking	1.08	.97, 1.21	1.13*	1.01, 1.26
Drinking	1.06	.95, 1.19	1.33***	1.20, 1.49
-LogLik	3037.6.16.85		2730.7.12.84	
McFadden R2				
Maximum Likelihood R2				

*p <.05, **p <.01, ***<.001, all coefficients were offset by the length of stay in the city so that $\log\left(\frac{\mu_x}{\text{Stay}_x}\right) = \beta_0 + \beta_j x + \epsilon$

**Figure 1.** Predicted number of sex workers and times of solicitation as a function of routine activity components.**Table 3.** Parameters of the confirmatory factor analysis of the routine activity components.

Latent variable/observed measures	Error variance	Squared multiple correlation	Coefficient	Correlation
Motivated	2.49	.69.83.79.74	1.00 ^a	~target = .12
-“life is to enjoy pleasure”	1.12.58.65.90		1.05***	
-“money should be used for fun”			.99***	
-“don't worry about having pleasure”			1.02***	
-“having fun as soon as possible”				
Target	.05.10.11.09	.34.37.49	1.00 ^a	~guardian = −.01
-yellow video room			1.24***	
-bath center			1.38***	
-entertainment venue				
Guardian	.21.01.09	.34.47.49	1.00 ^a	~motivated = −.03
-stay with spouse	4.01		1.24***	
-stay with child			1.38***	
-spousal presence months				
Goodness of fit	X ² (df = 32) = 192.0, GFI = .98, CFI = .94, TLI = .92, RMSEA = .06			

*p <.05, **p <.01, ***<.001, ^a:parameter fixed for identification

evaluate the reliability of our conceptual constructs created by the observed measures. According to Table 3, besides the fact that the chi-square test is significant ($p < .05$), a common phenomenon for larger samples (Kline 2005), all other fit statistics suggest that the measurement model is a great fit to the data. The observed measures are all significantly ($p < .001$) loaded on their latent constructs, and most of them had a reasonable amount of variance explained by the latent construct. There are moderate to strong correlations between three latent components, which are theoretically expected as a part of routine activity theory's argument. Motivation is positively related to the existence of targets ($\rho = .12$), and the existence of a guardian is negatively related to both motivation ($\rho = -.03$) and targets ($\rho = -.01$). Nevertheless, these latent constructs are still distinct from each other as dictated by the modification index that had tried but failed to find a better alternative constraint on the parameters. The confirmatory factor analysis suggests that motivation, targets, and guardians, are satisfactory constructs based on our measured variables, and we use them for the structural equation modeling.

Structural equation model

The structural equation model found in Table 4 and Figure 2 presents unstandardized and standardized parameters of the conceptual frame among routine activity components, peer association, and sex worker patronage. As anticipated within the hypotheses, motivation and targets are both positively associated with higher intensity of sex worker patronage measured by occasions and number of sex workers solicited, while the presence of guardians reduces sex worker patronage. Thus, the structural equation model, corresponding with the negative binomial models presented earlier, agrees with routine activity theory that a motivated offender, suitable targets, and absence of guardian contribute to sex work patronage. Figure 2 standardized the parameters to compare the magnitudes of coefficients, where one can find that access to available targets exerts the strongest impact on sex worker patronage ($\beta = .27, p < .001$), followed by the presence of guardians ($\beta = -.11, p < .001$) and motivation ($\beta = .09, p < .001$).

In regard to how peer association and buying sex is mediated by routine activities, we found that deviant peer association simultaneously influences both buying sex and related routine activities. Deviant peer association is associated with a higher level of motivation (.34, $p < .001$), more targets (.58, $p < .001$), and less available guardians ($-.20, p < .001$), but there is also a direct and positive association between peer association and buying sex (.33, $p < .001$). We conclude that having greater deviant peer association accompanies the deviance-inducing routine activities, but also directly affects buying sex independent of the mediating influence of routine activities.

With structural equation modeling, we can argue that there is an independent effect of peer association on sex worker patronage beyond the consideration of routine activity components. Technically speaking, if peer association is largely summarized by or reduced to routine activities, we would expect to see a considerable drop in its significance (MacKinnon, Fairchild, and Fritz 2007;

Table 4. Unstandardized parameters of the structural equation model.

Endogenous variable	Peer association	Exogenous variable			Squared multiple correlation
		Motivated	Target	guardian	
Motivated	.018*** (.001)				.12
Target	.005*** (.000)				.35
Guardian	-.003*** (.000)				.04
Prostitution patronage	.015*** (.002)	.077*** (.021)	1.41*** (.204)	-.30*** (.066)	.36
Goodness of fit	$X^2(df = 95) = 470.5$, GFI = .97, CFI = .93, TLI = .91, RMSEA = .05				

* $p < .05$, ** $p < .01$, *** $p < .001$, standard errors in parentheses. Covariance of errors allowed to vary free: between the errors of the first and second measures of the latent construct for motivation; between the errors of the second and fourth measures of the latent construct for peer association.

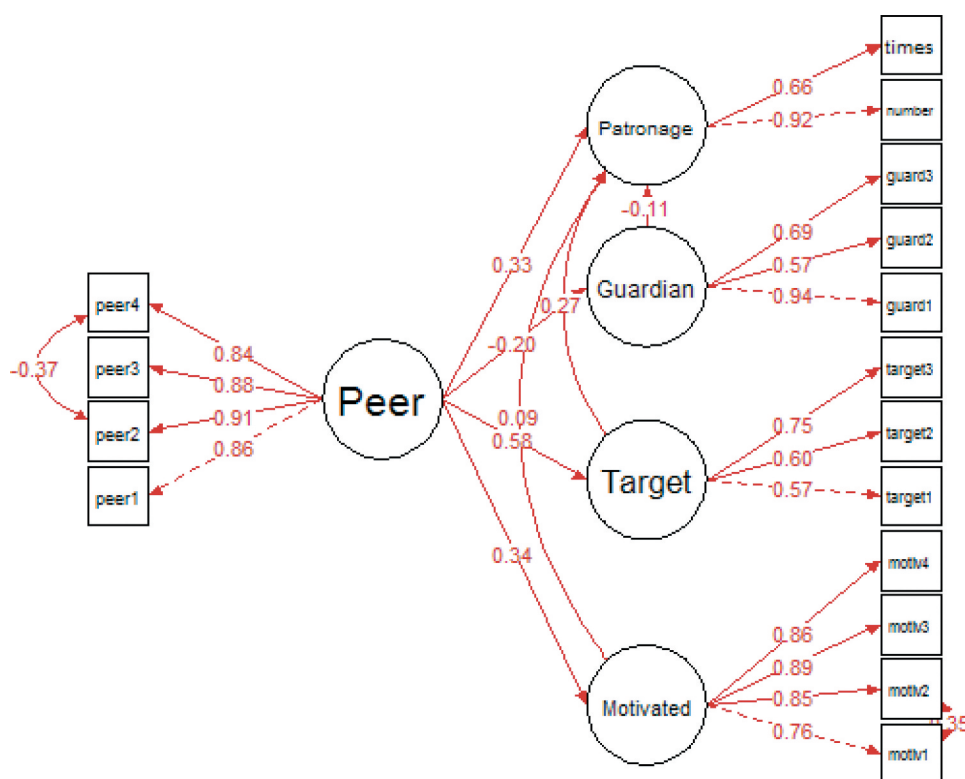


Figure 2. The structural equation model with standardized parameter estimates. Note: Squares are manifest measures, circles are latent constructs. Dashed lines are fixed parameters for identification. Curves with two arrows are free parameters between errors. Residuals not shown.

MacKinnon et al. 2002), which was not the case as seen in Table 4. One can also easily calculate indirect effect from Figure 2: the indirect effect of peer association through routine activities was .21 ($= .34 \times .09 + .58 \times .27 + -.20 \times -.11$), while the direct effect of peer association on sex worker patronage was .33. This figure indicates that 39% of peer association's impact on sex worker patronage was mediated by routine activities. Hypothesis 3 is partially supported.

As shown in the bottom of Table 4, the model's overall goodness of fit is solid. The GFI, CFI, and TLI were all above .90, while RMSEA was .05. We barely needed to modify the model to improve its fit, except for allowing two pairs of errors of the same construct to covary. The excellent goodness of fit demonstrates that the fitted model's covariance structure closely matches the actual data's covariance structure, and the data affirm our theoretical hypotheses.

Discussion

Studies have long shown that deviant peer association is associated with a variety of non-conforming behaviors, including men buying sex from sex workers (Havanon, Bennett, and Knodel 1993; Vanlandingham et al. 1998; X. Y. Yang, Kelly, and Yang 2016). However, the question of how deviant peers may influence buying sex is less systematically answered by studies testing individual and idiosyncratic risk factors. Routine activity theory offers several advantages in the explanation of deviant sexual behaviors such as buying sex. The theory proposed a systematic formulation that deviant behavior would occur when all three necessary conditions are fulfilled – a motivated actor, an available target, and the lack of guardians (Felson and Cohen 1980; Kringen and Felson 2014). This situational position is not restricted to whether the concerned behavior is deviant or simply sanctioned

by society. The current study set out to investigate peer impact on buying sex among migrant workers and leveraged routine activity theory's three components as mediators of the peer effect. We questioned how each of the three components of routine activity theory – motivated offenders, available targets, and the lack of guardians – are associated with paying for sex. Is peer deviance associated with paying for sex independently, or does peer deviance exert such influence through the mediation of routine activities?

The context of this study is another important impetus to the investigation of how peer association is related to commercial sex behaviors. Globalization and industrialization have dramatically changed the social and sexual lives of millions of migrants living in China. Since the economic reforms at the end of the 1980s, contemporary China has experienced large-scale migration. Married migrant laborers are often separated from their spouses; many are young and at the peak of their sexual drive. Most of these migrants also face severe financial strain and discrimination to win in the “mating market” in cities (Liu, Li, and Breitung 2012; Mobrand 2006). Consequently, male migrant workers in China disproportionately resort to commercial sex, but this move at the collective level may exacerbate STD and HIV transmission (Tucker et al. 2005; X. Y. Yang, Kelly, and Yang 2016). However, unlike conventional wisdom assumes, the acts of commercial sex are not a passive attempt of desperate loners, the pursuit of commercial sex – although not always the sex act itself – commonly takes place as a group activity, incorporated into a wider social experience over the course of a night out. Massive migration also heavily impacted the configuration of individual migrants' routine activities, causing deprivation of suitable guardians such as a spouse or elder authorities and exposing them to urban sexual scenes. Within this context, routine activity theory is particularly suitable to explain commercial sex behaviors among disadvantaged migrants.

Routine activity theory provides a powerful theoretical framework to explain the occurrence of deviance, furnishing us with a great candidate theory to synthesize the mechanisms of peer effects in sex work patronage. However, due to the “notorious difficulty to collect reliable and valid indicators of its central components” (Bursik and Grasmick 1993: 77), the application of routine activity theory often relies on indicators measured at a distant ecological level that only indirectly point to the three components of routine activity theory. Such indicators as unemployment rate, time out of home, the amount of luxury goods in an area, and pleasant weather for outdoor activities (Groff 2007; Pratt and Turanovic 2016) miss the opportunity to speak directly of motivations, target availability, and guardianship (Jensen and Brownfield 1986; Miethe, Hughes, and McDowall 1991). The current study used more direct indicators of routine activity components and deviant peer association at the individual level.

We have come to the conclusion with different models, including two negative binomial regressions and a structural equation model, that the three components of routine activity theory are all simultaneously associated with sex worker patronage in a direction that supports each hypothesis of routine activity theory. When a male migrant has greater hedonistic attitudes, his likelihood of having bought sex increases. Stronger desires for pleasure thus becomes a key factor in the pursuit of sex workers. Having been to entertainment venues or bath centers – sites of collective male socializing in China – provide opportunities to find suitable targets, and is significantly associated with buying sex. The companionship of one's family and wife in the destination city, on the other hand, reduces the likelihood of patronizing sex workers. Furthermore, we have shown that the peer effect on buying sex is significantly and partly mediated by these routine activities factors.

Deviant peer association is significantly associated with all three routine activity factors, which in turn shape paying for sex. In real-life scenarios, associating with deviant peers may shape one's own motivation for seeking commercial sex. Peers may disclose to their friends the information and strategies of finding sex workers, and peers also play an important role in shaping tastes and desires. They also shape the locales of socializing, potentially steering the peer network toward certain venues over others, and thus the extent of the network's presence in venues that may have sex workers present. Peers may also compete for the time potentially spent with families, and also possibly mitigate loneliness that may shape the frequency of a spouse's presence. Nonetheless, the strength of the

associations differ, peer deviance is most strongly associated with the target factor, following by motivation with the lack of guardians the least strongly associated. This affirms that shaping deviant opportunities is a strong effect of peer association, as suggested by Haynie and Osgood (2005). Peer deviance bears a weaker but still significant association with the lack of guardians. Perhaps unsurprisingly, although the presence of a strong peer network with deviant activities may influence the extent to which a migrant may wish a spouse or family to be present, peers may be a less primary driver of whether a migrant will live with a spouse or family. Overall, the routine activity factors explained 33% of the total peer effect on buying sex.

Nonetheless, peer deviance is not entirely mediated by routine activities, as 61% of the peer effect remains independently responsible for the purchase of sex. Therefore, although deviant peer association was mediated by routine activities, it is nevertheless an independent influence that cannot be reduced to the routine activity pathways. This is perhaps unsurprising as the literature has identified a wide range of mechanisms of the relationship between peer association and deviance. For example, contrary to social learning theory, Warr (2002) argues that people may choose deviant conduct simply out of the need for conformity without necessarily internalizing deviant values. Additionally, Haun and Tomasello (2011) found that children do not change their real judgments, but their publicly expressive behaviors shift in conformity to peers.

The Internet may have changed the significance of peers in conducting deviant behaviors in many contexts, as sex work has increasingly transitioned online in many countries. However, this emerging phenomenon remains remarkably limited in China, our study's context, where Internet censorship is stringent. In the contemporary landscape of the Internet economy, sex work in many industrialized countries has been transformed to rely on digital interfaces for advertising, signaling, and information exchange, resulting in many clients of online providers needing no peers to procure commercial sex. Yet, changes in Western countries, such as the introduction of FOSTA-SESTA in the U.S., may be pushing back on Internet-based sex work, potentially reintroducing some of the pertinence of peers in the process of pursuing sex from sex workers. Also, these processes may have context-specific relevance within the West, such as with stag parties held in sites of public sex work or group-based male tourism to sites, such as Amsterdam. Further, as Sanders et al. (2017) noted in *Internet Sex Work*, disadvantaged groups such as migrants are less likely to access digital interfaces for sex work information. Conventionally, people from such groups may still resort to peers for access sex work. Considering these other areas of literature, it would be expected that peers would have wide-ranging effects beyond the mechanisms tested in this paper. For example, conformity within the context of socializing may shape some migrants' commercial sex behavior, a possibility more likely in non-Western contexts where the pursuit of sex work is a collective activity.

Limitations

While having many strengths, this study has a few limitations as well. First, the current study employs a cross-sectional design. Even with SEM, it is still not possible to fully identify the causal order between the constituent components. Cross-lagged models using SEM may be preferable with longitudinal data. Second, although the survey provided us with a good number of items on peer behavior, we could still improve by having more variables on the peers' demographic backgrounds. In this way, we would be able to know whether one's friends may include potential guardian figures, which will further alter one assumption of the unstructured socializing approach: namely, that spending time with peers removes guardians. Third, the survey used the ego's report of peer behavior, which could relate to problems mentioned by previous studies (Haynie and Osgood 2005; Young et al. 2014). Future research may deploy specialized social network items in the survey to gather more accurate information on the peers of the respondents. Lastly, for the specific case of pursuit of sex workers, such scenarios are more likely within certain contexts. Men in China, and other nations, collectively visit sites where sex work occurs as part of a broader evening of socializing, but in other cultural contexts

the pursuit of sex workers is a more solitary activity. Thus, while the case remains useful for the examination of peers routine activities, we acknowledge that the social processes surrounding sex work are different across cultural contexts.

Concluding remarks

In addition to providing an analysis of sex work patronage, this study provides new information on the utility of routine activity theory to account for peer effects in deviant behavior. Importantly, by studying this phenomenon in post-reform China, the study harkens back to a context akin to that of Cohen and Felson (1979) original conceptualization as a response to conditions of rapid social and economic change. We have identified the important role of peer association in shaping the routine activities mechanisms, thus expanding the theory and linking it with the large literature on peer influences of deviance. The major implication of this work is that routine activities mechanisms partially mediate the influence of peer networks on deviant behaviors.

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