

Factors of susceptibility to online romance scam in Malaysia: unraveling the complex pathways

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ABSTRACT

In this cross-sectional study, we delve into the multifaceted realm of online scam victimization by investigating a diverse array of individual factors that may predispose adults to fall prey to online scams. The central objective of this research is to ascertain the strongest predictor among the following variables: loneliness and the sense of mattering and to elucidate the moderating effect of social media engagement (SME) on the relationship between these predictors and online romantic scam (ORS) susceptibility (OSS). A sample of 380 adults aged 18 to 65 years (M=33.4) participated in this study to respond to demographic questionnaires and scales of the respective variable. The results suggested that the direct effect of relationship satisfaction on ORS susceptibility is not significant without the serial mediation roles of loneliness and mattering at a high level of SME. Further implications, limitations, and suggestions are discussed.

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1. INTRODUCTION

Online romance scams (ORS) have emerged as a prevailing threat in the digital era, affecting individuals worldwide, including Malaysia [1], together with the increase of the other types of online scams reported cases [2]–[4]. The growing prevalence of ORS cases is a matter of grave concern, given its adverse impact on victims, including emotional distress, psychological trauma, and substantial financial losses. As a result, it has become imperative to investigate the underlying factors that contribute to individuals' vulnerability to online romance scams and develop effective preventive strategies.

The advent of the internet and social media platforms has facilitated connections and relationships across borders, making it easier for scammers to exploit vulnerable individuals seeking companionship [5]. The study suggested that the prevalence of the ORS, as well as the negative implications that followed it, call for the urgent need to scrutinize the factors that make individuals susceptible to falling prey to online scams in general, and online romance scam specifically. Unlike financial scams, the consequences of ORS extend far beyond financial losses, impacting victims emotionally and psychologically [6]. The revelation of

deception and betrayal in online relationships leads to profound emotional distress, leaving victims heartbroken and emotionally vulnerable [7]. Victims often experience feelings of embarrassment and shame, compounded by the realization of being manipulated [8]. The psychological effects may manifest as anxiety, depression, and self-doubt, as victims grapple with the aftermath of being deceived. Additionally, financial losses from ORS can plunge victims into dire economic circumstances, exacerbating the overall impact on their well-being. As victims attempt to recover financially, they may also face challenges in rebuilding trust in future relationships, both online and offline, as well as their overall mental health [9]. By gaining a comprehensive understanding of these factors, authorities, and organizations can develop targeted awareness campaigns and educational programs to protect potential targets from falling victim to the manipulative tactics of online scammers. Drawing upon relevant theoretical perspectives, this study aims to investigate the multifaceted pathways that predict the susceptibility to ORS.

2. LITERATURE

2.1. The role of loneliness

The connection between relationship satisfaction and susceptibility (ORS) can be understood through the lens of social exchange theory [10]. It posits that individuals engage in relationships based on a cost-benefit analysis, seeking to maximize rewards while minimizing costs. Contextually, individuals who are satisfied with their existing relationships would not perceive any benefit of seeking alternative connections online. The emotional and practical support from a satisfying relationship may act as a protective factor, reducing the appeal of potentially risky online relationships, including those that could lead to ORS.

Accordingly, individuals with lower satisfaction towards the existing present relationship might experience a higher tendency to seek alternative connections online, which lead them to higher exposure to the risk of ORS. However, lower relationship satisfaction might not immediately lead one to seek for alternative online as the social exchange is not the only factor that is sought after in romantic relationships. The loneliness that came from the lack of a satisfying reliable relationship might lead one to seek for alternative relationships online to diminish their loneliness [11].

The aforementioned social exchange theory suggested that the directional relationship between relationship satisfaction and ORS susceptibility can be mediated by loneliness. In other words, victims of ORS experienced loneliness that was caused by their inadequate relationship satisfaction. They often display higher levels of neuroticism and an inclination towards a perceived ideal romantic relationship [12], which can be exacerbated by loneliness; individuals dissatisfied with their relationships might be more susceptible to scams when their relationship dissatisfaction has led them to loneliness, which has been identified as a critical factor of the exposure to potential ORS [13] as it propels individuals to seek emotional connections and support, and the availability of online social platforms exposes them to potential ORS even more [14].

Moreover, loneliness also mediates the relationship between relationship satisfaction and other sinister behavior related to romantic relationships, such as phubbing and romantic infidelity [15]; individuals with dissatisfying relationships tend to be neglectful and unfaithful to their romantic partners when their unsatisfying relationship pushes them to feel lonely. In other words, loneliness is an exacerbating factor of low relationship satisfaction in general, as it leads individuals to lower their guard and trust others more readily, making them susceptible to manipulative tactics used by scammers to form deceptive online relationships [16], [17]. The aforementioned studies have consistently identified loneliness as a significant predictor of ORS susceptibility [6], [8], [9], [14], [16], whether as a mediator or as a direct predictor. Individuals who perceive themselves as lonely tend to engage in risky online interactions, increasing their vulnerability to ORS.

2.2. The sense of mattering

Mattering, defined as the sense that we matter to others [17], can explain how loneliness pushes individuals to be involved in ORS-risky behavior. Individuals who feel that they matter tend to have their sense of mattering validated by their satisfying relationship with others, including their romantic partners. On the other hand, those with low levels of mattering would seek validation from any possible social connection they might build. Individuals who experience loneliness would not have their matters validated, and seek for it by looking for online companionship, which drove them vulnerable to the risk of ORS. Consequently, a stronger mattering may act as a protective factor by mitigating their ORS susceptibility. Some studies highlighted that loneliness predicted a lack of mattering as lonely individuals perceive that there is no social environment that acknowledge, appreciate, or require their presence [18]. However, the sense of mattering requires a perception of existing social support [19], which also confirms that when loneliness is perceived, it would be difficult for individuals to believe that they matter to others. In other words, when lonely

individuals start to develop the feeling that they do not matter enough to others, they start to seek companionship to revitalize their sense of mattering [20].

Adequate sense of interpersonal mattering might reduce the perception of loneliness, and sequentially mitigate the vulnerability to ORS among individuals with low relationship satisfaction. While the aforementioned theories and past studies suggested a hypothetical association between low relationship satisfaction and ORS susceptibility, which can be fully explained by loneliness and interpersonal mattering; the connection among the said variables might not occur without certain levels of engagement to social media or any means of online communication [21], because individuals with low social media engagement (SME) might not be available for the perpetrators to scam. As posited by the routine activity of crime theory, a crime would not take place without the presence of willing offenders, and potential victims, and the absence of monitoring [22]. Additionally, the SME might mitigate the development of loneliness among individuals who live on their own by providing a sense of mattering to their online social environment in the social media [23].

As the aforementioned routine activity theory of crime [24] explained that the online presence of potential, vulnerable victims is required for the ORS to take place. The Elaboration Likelihood Model (ELM) explains how the process occurs. It posits that an individual's engagement with social media can influence their information processing and susceptibility to persuasive tactics, including ORS [25]. The occurrence of ORS can be explained through the victims' social media presence by considering the two routes of persuasion: central and peripheral. In the context of ORS, victims' social media profiles and activities serve as peripheral cues, which can influence the likelihood of falling victim to scams. It is suggested that individuals may rely on these peripheral cues, such as the perceived popularity or attractiveness of the scammer's profile, to make quick judgments about the legitimacy of a potential romantic partner online [1]. Additionally, the mere presence of an attractive profile picture may lead victims to overlook warning signs and engage in risky online interactions [2]. Therefore, the peripheral cues present on social media platforms can significantly impact individuals' susceptibility to ORS [12], [16], [26]; in other words, individuals with higher SME levels may be more exposed to potential scammers and persuasive content, potentially increasing their vulnerability to ORS. In other words, whether the low relationship satisfaction led someone to the perceived loneliness and lack of mattering that makes them more susceptible to ORS depends on how engaged they are with the online communication, or in the context of this current study, any form of online social media. Based on the theoretical foundations and findings from past studies, we propose the following hypothetical moderated serial mediation model in Figure 1 to be tested.

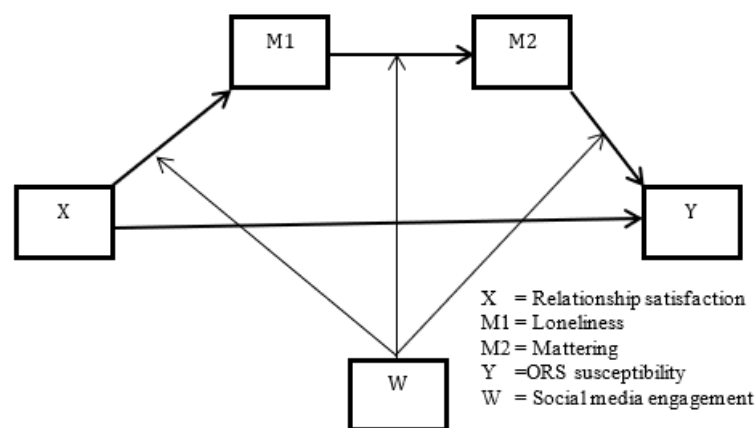


Figure 1. Hypothetical moderated serial mediation model

3. METHOD

Employing cross-sectional quantitative survey, this study investigates the current interrelationship among the aforementioned variables and their respective roles in the equation.

3.1. Participants

A sample of 380 adults living in urban and semi-urban areas of Malaysia, aged between 18 and 67 years ($M=33.83$, $SD=8.24$), participated in the study. Participants were recruited using a purposive sampling technique with specific inclusion criteria. The inclusion criteria required participants to use the internet in their daily lives and have at least one active social media account.

3.2. Measures

The following scales were used to assess the variables in the study:

- i). Relationship Satisfaction (X): The dyadic adjustment scale (DAS) [27] was used to measure participants' satisfaction with their current romantic relationships. The DAS consists of 32 items, and higher scores indicate higher relationship satisfaction.
- ii). Loneliness (M1): The UCLA Loneliness Scale version 3 [28] was employed to assess participants' levels of loneliness. The scale consists of 20 items, with higher scores indicating greater feelings of loneliness.
- iii). Mattering (M2): The renewed version of general mattering scale [29] was used to measure participants' sense of mattering to others. The scale comprises 10 items, and higher scores indicate a stronger sense of interpersonal mattering.
- iv). Gullibility (ORS susceptibility): Gullibility, representing susceptibility to online romance scam (ORS), was measured using a newly developed scale based on previous research on online scam susceptibility [30]. The scale consisted of 15 items that assessed participants' vulnerability to manipulative tactics commonly used in online romance scams. Higher scores on this scale indicated greater susceptibility to ORS.

3.3. Ethical considerations

Prior to data collection, ethical approval with serial number of UOC/FPSS/2024(4) was obtained from the Ethic Review Board of the Faculty of Psychology and Social Sciences, University of Cyberjaya. All participants provided the forms to indicate their consent before participating in the study. Confidentiality and data anonymity were ensured throughout the research process, and the participants were free to decide to stop their participation at any time. Contact numbers and email addresses of the researchers, clinical psychologists, and counselors were provided in the questionnaire set in case the participants were in need to seek for some professional support.

3.4. Procedure

Participants were recruited through online advertisements and social media platforms, targeting individuals meeting the inclusion criteria. Interested individuals were directed to an online survey hosted on a secure platform. Upon accessing the survey, participants were provided with detailed information about the study's purpose and their rights as participants. They were informed about the voluntary nature of participation and their right to withdraw at any time without consequences. After providing informed consent, participants completed the questionnaire comprising the measures for relationship satisfaction, loneliness, interpersonal mattering, and gullibility. The data were then subjected to the specified statistical analyses to test the hypotheses of the moderated serial mediation model.

4. RESULTS AND DISCUSSION

The data were analyzed using the Bootstrap method with 5,000 resamples and a 95% confidence interval. The PROCESS Macro model 92 for SPSS [31] was utilized to examine the serial moderated mediation model. This statistical approach allowed for the examination of the indirect effects of the variables (relationship satisfaction, loneliness, and interpersonal mattering) on ORS susceptibility (gullibility) and how social media engagement (SME) levels moderated these indirect effects. Table 1 shows depict the results.

Table 1 illustrates that without controlling any of the mediators (total effect) Individuals with low relationship satisfaction are significantly susceptible to ORS, especially when they are highly engaged with social media. Furthermore, the exclusive negative contribution of relationship satisfaction (direct effect) was significant at high social media engagement, suggesting that anyone with low relationship satisfaction and highly engaged in social media is more likely to be susceptible to ORS. Serial mediation of loneliness and mattering is significant at the high level of SME, indicating that individuals who feel lonely and do not matter to others are likely to be susceptible to ORS when they are highly engaged with social media usage.

The interpretation of Table 1 led us to conclude that individuals who are not satisfied with their current relationship would likely to feel lonely and do not matter much to others and consequentially be more susceptible to ORS when they are highly engaged with their social media. The loneliness and mattering did not significantly mediate the contribution of low relationship satisfaction on the ORS, indicating that dissatisfaction with current or existing relationships would not make individuals susceptible to ORS unless their dissatisfaction made them feel lonely or did not matter much to others.

Table 1. Summary of the results

Paths	Coefficient	SE	95% CI		t	p
			Lower	Upper		
Total effect	-0.18	0.06	-0.30	-0.05	-2.87	0.004*
Conditional total effect						
X→Y at high W	-0.25	0.07	-0.39	-0.11	-3.43	0.001**
Direct effect						
X→Y at low W	-0.06	0.03	-0.13	0.01	-1.84	0.167
Conditional direct effect						
X→Y at high W	-0.10	0.04	-0.19	-0.02	-2.56	0.011*
Indirect effects						
X→Y through M1 moderated by W	0.02	0.01	0.00	0.06	1.96	0.042*
X→Y through M2 moderated by W	-0.06	0.02	-0.11	-0.02	-2.92	0.004*
Conditional indirect effects						
X→Y through M1 at high W	0.05	0.02	0.01	0.10	2.35	0.019*
X→Y through M1 at moderate W	0.03	0.02	-0.01	0.07	1.63	0.104
X→Y through M1 at low W	0.01	0.02	-0.03	0.05	0.80	0.424
X→Y through M2 at high W	-0.08	0.02	-0.12	-0.03	-3.18	0.002*
X→Y through M2 at moderate W	-0.06	0.02	-0.11	-0.02	-2.69	0.007*
X→Y through M2 at low W	-0.15	0.02	-0.09	-0.01	-2.50	0.013*
X→Y through M1 through M2 at high W	-0.08	0.02	-0.12	-0.03	-3.18	0.002*
X→Y through M1 through M2 at moderate W	-0.06	0.02	0.11	0.02	-2.69	0.067
X→Y through M1 through M2 at low W	-0.12	0.02	0.09	0.01	-2.50	0.053

Our findings reveal a complex interplay between relationship satisfaction, loneliness, mattering, social media engagement (SME), and ORS susceptibility, offering insights that both align with and extend previous research and theories. Consistent with Social Exchange Theory [10], we observed that lower relationship satisfaction potentially elevates ORS susceptibility, underlining the theory's premise that relationships are governed by a cost-benefit analysis. This finding resonates with studies that have identified loneliness as a mediator between relationship dissatisfaction and various adverse outcomes, including ORS susceptibility [11], [13], [14], [16], [17]. Our research further substantiates the notion that loneliness exacerbates the likelihood of seeking alternative connections online, thereby increasing ORS risk, a concept supported by Coluccia *et al.* [12], which highlighted the role of neuroticism and idealized romantic perceptions in this dynamic.

The role of mattering in our study provides an intriguing extension to existing literature. While loneliness emerged as a critical mediator, echoing the findings of some studies in the recent past [9], [15], [16], our study uniquely highlights how the perceived lack of matter further compounds ORS vulnerability. This aligns with studies that explored the correlation between loneliness, lack of mattering, and seeking validation through online companionship [32], yet our findings elucidated a direct path from mattering to ORS susceptibility, especially under high SME conditions. This suggests that while loneliness is a significant factor, the critical need to feel valued and important (mattering) can independently drive individuals towards risky online behaviors, a concept somewhat explored but not explicitly connected to ORS in previous studies [19], [20].

The moderated serial mediation model proposed by our study, incorporating relationship satisfaction, loneliness, mattering, and SME, offers a novel framework for understanding ORS susceptibility. This model is partly supported by routine activity theory [22], [24] and the elaboration likelihood model (ELM) [25], highlighting the role of potential victims' online presence and engagement with social media in facilitating ORS. Our findings diverge slightly by underscoring SME as a crucial element not just for potential victim presence but as a magnifier of the effects of loneliness and lack of mattering, thereby expanding on the traditional scope of these theories [21], [23]. This nuanced view offers a deeper understanding of how and why individuals become susceptible to ORS, beyond the binary presence/absence of online engagement suggested by previous applications of these theories [12], [26].

Our study, while providing valuable insights, is not without limitations. One notable constraint is the reliance on self-reported measures, which may introduce bias or inaccuracies in reporting levels of relationship satisfaction, loneliness, mattering, and SME. Additionally, our study's cross-sectional design limits our ability to infer causality or temporal relationships between these variables. Future research could benefit from longitudinal designs to better understand how these relationships evolve over time.

As a practical implication, our findings accentuate the importance of fostering a strong sense of mattering and addressing loneliness as preventive measures against ORS. These insights could inform the development of targeted interventions and educational campaigns aimed at increasing awareness of the risks associated with online relationships, especially for individuals experiencing relationship dissatisfaction or high levels of loneliness. Social media platforms and policymakers could also use these findings to design safer online environments that reduce ORS vulnerabilities, such as by implementing better monitoring

systems and promoting online communities that support positive, meaningful interactions. Moreover, our research highlights the need for increased education on the signs of ORS and strategies for safe online engagement, particularly for those with high levels of social media usage.

5. CONCLUSION

Our study elucidates the relationship between relationship satisfaction, loneliness, mattering, and social media engagement (SME) in predisposing individuals to Online Relationship Scams (ORS). It supports the notion, grounded in Social Exchange Theory, that dissatisfaction in relationships heightens ORS risk through loneliness and a diminished sense of mattering, with SME amplifying this vulnerability. This research bridges gaps between routine activity theory and the Elaboration Likelihood Model, emphasizing the importance of online presence in ORS susceptibility. It highlights the critical role of loneliness and introduces the novel idea that mattering significantly influences the likelihood of engaging in risky online relationships. By proposing a model that combines these elements, our findings advance our understanding of ORS risks, suggesting interventions and policy adjustments focused on reducing loneliness and enhancing a sense of importance and connection in online environments. This study sheds light on the intricate relationship between personal dissatisfaction, emotional needs, and the influence of the digital world on interpersonal relationships, offering directions for future preventative strategies.





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


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