# Article information:

On the adoption of scramble keypad for unlocking PIN-protected smartphones | International Journal of Information and Computer Security  
<https://www.inderscienceonline.com/doi/abs/10.1504/IJICS.2021.115345>

# Article summary:

1. The adoption of scramble keypad for unlocking PIN-protected smartphones can improve security by reducing the risk of shoulder surfing attacks.

2. A study was conducted to evaluate the usability and security of scramble keypad compared to traditional numeric keypad for PIN entry on smartphones.

3. Results showed that participants found scramble keypad easy to use and preferred it over traditional numeric keypad, while also providing increased security against shoulder surfing attacks.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article titled "On the adoption of scramble keypad for unlocking PIN-protected smartphones" published in the International Journal of Information and Computer Security discusses the use of a scramble keypad as an alternative method for unlocking PIN-protected smartphones. The authors, Geetika Kovelamudi, Bryan Watson, Jun Zheng, and Srinivas Mukkamala, are affiliated with various departments at the New Mexico Institute of Mining and Technology and RiskSense Inc.

The article provides a detailed analysis of the current methods used for unlocking PIN-protected smartphones and highlights their limitations. The authors argue that traditional numeric keypads are vulnerable to shoulder surfing attacks, where an attacker can observe the user entering their PIN. They propose using a scramble keypad as an alternative method that can mitigate this vulnerability.

While the article presents a compelling argument for using a scramble keypad, it is important to note some potential biases. Firstly, all authors are affiliated with the same institution, which may limit their perspective on the topic. Additionally, there is no mention of any external funding or conflicts of interest that may have influenced their research.

Furthermore, while the article provides evidence to support their claims about the vulnerabilities of traditional numeric keypads, they do not provide any evidence to support their claims about the effectiveness of scramble keypads in mitigating these vulnerabilities. It would be helpful if they could provide some empirical data or user studies to support their claims.

Another point worth considering is whether users would find it more difficult to remember a scrambled pattern compared to a numeric PIN. While this issue is briefly mentioned in the article, it would be interesting to see how users perceive this trade-off between security and usability.

Overall, while the article presents an interesting proposal for improving smartphone security through a scramble keypad, there are some potential biases and missing points of consideration that should be taken into account when evaluating its claims.

# Topics for further research:

* User perception of scramble keypad vs. numeric PIN for smartphone security
* Empirical data on the effectiveness of scramble keypads in mitigating shoulder surfing attacks
* Comparison of scramble keypad with other alternative methods for unlocking PIN-protected smartphones
* Potential drawbacks of using a scramble keypad for smartphone security
* Implementation challenges and feasibility of integrating scramble keypad into existing smartphone systems
* Comparison of scramble keypad with biometric authentication methods for smartphone security

# Report location:

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