

## JOINT NEWS RELEASE

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### **Security most important to retaining mobile banking customers, NTU-WeBank study finds**

- *Service quality and system quality rank second and third*

A study by a research team from **Nanyang Technological University, Singapore (NTU Singapore)** and China's first digital-only bank **WeBank** has found that security, service quality and system quality are the most important factors for customers who use mobile banking.

Two in five respondents (40%) said that the **security** they felt while carrying out transactions on mobile applications was their most important consideration.

This was followed by the **level of service quality** (25%), which referred to whether the banking applications could fulfil users' needs, such as carrying out transactions and easy access to credit card services.

**System quality**, which considers the performance of the application, including compatibility with different mobile phones and loading speeds, came in a close third (24%).

The results of the study were published in the *Journal of Retailing and Consumer Services*, an academic publication by Elsevier, last December.

The researchers said their study which ranked factors that are important in determining customer loyalty would be useful to financial institutions who are looking at improving their mobile banking applications.

Already widely used in China prior to COVID-19, mobile banking applications have seen a sharp rise in uptake throughout Asia during the pandemic, as the touchless payment systems provided by most mobile banking applications have gained traction.

The NTU-WeBank team obtained their results after surveying 224 mobile banking users of a large bank in China in 2019. Over three-quarters of the respondents (79%) were frequent users of mobile banking, meaning that they used it at least once a week.

The researchers said that although the study was conducted in China, the results are applicable to other countries where mobile banking has a high level of adoption, such as Singapore, Thailand, and Vietnam.

**Associate Professor Xu Hong, from NTU's School of Social Sciences** who led the study, said: "It was already known that all these factors: security, service quality, system quality, and interface design had an impact on customers, and this study highlights implications for banks' strategies for retaining their mobile banking users, as well as exploring how to capture new customers."

**Assistant Professor Yu Han, from NTU's School of Computer Science and Engineering**, who co-led the research, said: "Our study has implications for banks' strategies for retaining their mobile banking users, as well as exploring how to capture new customers."

Assoc Prof Xu and Asst Prof Yu are part of the team at the **Joint NTU-WeBank Research Centre on Fintech** which initiated this study. The joint centre was launched in early 2019 with the aim of developing new technologies to support Banking 4.0, where banking can be personalised and done anytime, anywhere.

**Mr Joe Chen, Executive Vice President of WeBank**, said: "The findings are relevant to other banks who are increasingly rolling out more digital solutions, which include payment, lending, and wealth management applications. As mobile banking worldwide is becoming increasingly accepted as replacement for branch-based banking in many countries, it is important for banks to know the factors that affect and influence customer loyalty. In this regard, the Joint NTU-WeBank Research Centre will continue to generate research outcomes and innovations for the benefit of the Fintech industry."

**NTU Senior Vice President (Research) Professor Lam Khin Yong**, added: "The NTU-WeBank partnership is another example of the University's strong links with the private sector. It also shows our strong support for industry collaborations that accelerates the translation of research into innovation and commercial adoption. This study also serves as a good example of interdisciplinary research involving faculty from the social sciences and computer science, as it solves a very important issue in today's fintech industry."

**A multi-pronged approach to build customer loyalty**

The team's analysis of the results also showed that a mobile application's **interface design** had a strong and positive impact on respondents' evaluation of system and service quality.

This is despite it scoring relatively low compared to other factors surveyed in the study (see Chart 1). For example, the team found that respondents tended to associate good interface design, such as smooth transitions between pages, with optimal system quality and high security.

The findings also outlined a larger correlation between several factors that were surveyed. For example, **service and system quality** and **interface design** were found to be important in sparking **user loyalty**, which the researchers defined as "the intention to continuously use the mobile banking product and recommend it to others."

After analysing the survey results, the team advised that mobile banking operators should focus on providing **multi-level security features** to increase the users' sense of security when using the applications.

Such features might include pop-up messages that alert users to the potential risks that could occur when using mobile banking services, as well as a well-documented policy statement from the financial institution.

Besides providing users assurance of their security while using the applications, Assoc Prof Xu added: "The level of service quality, which encompasses factors such as the levels of reliability, responsiveness, and empathy from bank staff, could enhance users' satisfaction and increase their usage of mobile banking services."

"By providing a stable and secure mobile banking system that boasts fast responses and efficient service, banks can encourage customers to continue using their mobile banking application, while ultimately strengthening user loyalty. The results can also help improve their overall mobile banking strategy and cater the functions of their apps to the needs of different age groups."

### **Next steps: overseas studies**

To further their research on loyalty intention in mobile banking, the NTU-WeBank team is looking to conduct studies in other countries and regions to identify other determinants that could affect customer loyalty.

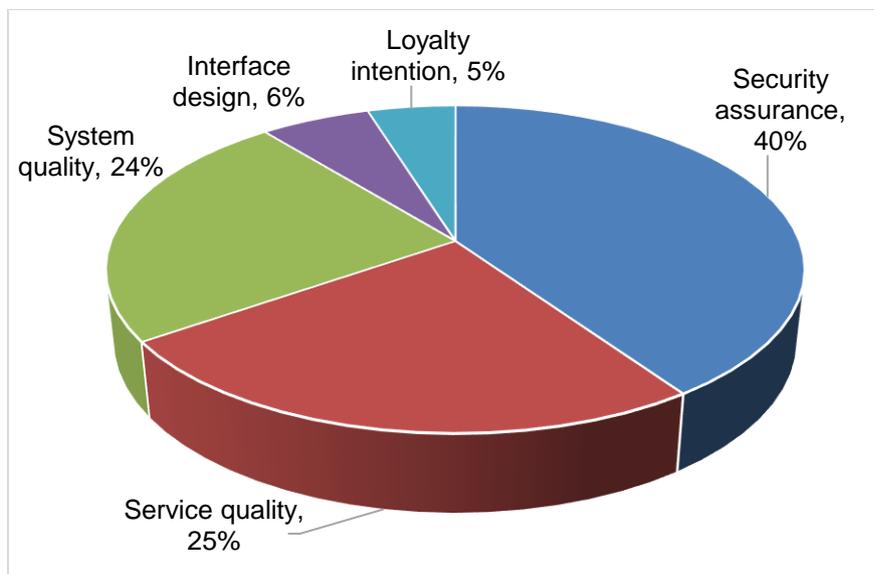
Assoc Prof Xu said the team will continue to leverage the computing platform which it has developed to collect and analyse user experience data for future studies.

“We believe the large-scale immersive studies we will conduct using our computing platform powered by social computing and social media technologies will be able to help banks gain more insights into customers’ intentions,” said Assoc Prof Xu.

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**Note to Editors:**

The NTU research paper titled "[A study on factors affecting service quality and loyalty intention in mobile banking](#)", is published in *Journal of Retailing and Consumer Services*, 26 December 2020. DOI 10.1016/j.jretconser.2020.102424



**Chart 1:** The survey results from the joint NTU-WeBank study on which factors were most important for mobile banking customers.

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**Media contact:**

Mr Joseph Gan  
Manager, Media Relations  
Corporate Communications Office  
Nanyang Technological University, Singapore  
Email: [joseph.gan@ntu.edu.sg](mailto:joseph.gan@ntu.edu.sg)

***About Nanyang Technological University, Singapore***

A research-intensive public university, Nanyang Technological University, Singapore (NTU Singapore) has 33,000 undergraduate and postgraduate students in the Engineering, Business, Science, Humanities, Arts, & Social Sciences, and Graduate colleges. It also has a medical school, the Lee Kong Chian School of Medicine, established jointly with Imperial College London.

NTU is also home to world-renowned autonomous institutes – the National Institute of Education, S Rajaratnam School of International Studies, Earth Observatory of Singapore, and Singapore Centre for Environmental Life Sciences Engineering – and various leading research centres such as the Nanyang Environment & Water Research Institute (NEWRI) and Energy Research Institute @ NTU (ERI@N).

Ranked amongst the world’s top universities by QS, NTU has also been named the world’s top young university for the last seven years. The University’s main campus is frequently listed among the Top 15 most beautiful university campuses in the world and it has 57 Green Mark-certified (equivalent to LEED-certified) building projects, of which 95% are certified Green Mark Platinum. Apart from its main campus, NTU also has a campus in Singapore’s healthcare district.

Under the NTU Smart Campus vision, the University harnesses the power of digital technology and tech-enabled solutions to support better learning and living experiences, the discovery of new knowledge, and the sustainability of resources.

For more information, visit [www.ntu.edu.sg](http://www.ntu.edu.sg)

### ***About WeBank***

WeBank Co., Ltd. (“WeBank”) is the first privately-owned bank and digital-only bank in China. Launched in 2014, backed by Tencent as the biggest shareholder (30%), WeBank provides more convenient financial services to micro-, small- and medium-sized enterprises (MSMEs) and the general public. In 2019, Moody’s and Standard & Poor’s have given WeBank “A3” and “BBB+” ratings respectively, and WeBank has been called “the world’s leading digital bank” by Forrester.

WeBank is at the top of the industry in core technologies such as artificial intelligence (AI), blockchain, cloud computing and big data. WeBank has furthered its commitment to financial inclusion by launching WeBank FinTech to promote the Open Banking ecosystem to enable inclusive and contextual financial services for international partners.

WeBank strongly believes the notion of Open Banking should go beyond the concept of API banking, therefore WeBank began the proposition of The Three Open's to foster fintech innovations.

Open Platform: To go beyond API banking by sharing data models, algorithms, customer onboarding procedures, risk management and other capabilities with participants in the collaborative business ecosystem.

Open Collaboration: Distributed business models shift the landscape of futuristic commerce, where collaborative business partners will become more sophisticated in vertical markets. Open collaboration will drive the construction of shared business infrastructure, which nurtures more collaborative business models.

Open Innovation: Open Innovation initiated by financial institutions and fintech companies allow collaborative business partners to leverage external technology advancements. To provide open-source software, intellectual property licensing, and reference implementations to encourage and empower partnerships.

For more information, go to [www.webank.com](http://www.webank.com).

### ***About Joint NTU-WeBank Research Centre on FinTech***

NTU and WeBank, China's 1st Digital-only Bank officially launched Singapore's 1st Joint Research Centre in Fintech on 31st January 2019.

Housed at NTU, Yunnan Campus, the new \$25 million research centre will support 35 research scientist and engineers over the next 5 years. By employing "state-of-the-art" research, such as data science and analytics, Internet of Things (IoT) and blockchain technologies, the centre aims to enable and realise Banking 4.0, where banking can be personalised and done anytime, anywhere. And fundamentally transform how we borrow, save, pay, invest and insure.

The research centre will develop technologies that integrate behavioural science with advanced analytics to give users personalised wealth management advice on the go. This will help to make wealth management advice not just accessible to wealthy individuals, but to the general public at large.

The team will also examine ways to enhance banking services through the adoption of blockchain technology and develop new means of digital marketing for banking services using the Internet-of-Things (IoT) and machine learning technology. Blockchain enhances the customer experience by making banking more accountable and secure in every business and customer interaction. Potential applications for IoT-based digital marketing for banking services include boosting the bank's social presence and targeting genuine customers.