GRADUATE CENTRE FOR MANAGEMENT

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PILOT STUDY REPORT (TOPIC 1)

Skills analysis of FinTech's and how they contribute to skills gaps in the banking and alternative banking sector.

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THE PROJECT

The project is a BANKSETA funded research project between CPUT and BANKSETA implemented in 2021. The project was implemented in 2021, and centred on the two (2) topics, 1: Skills analysis of Fintechs (*Focus of this pilot report*), and, Topic 2: Barriers to skills development in the sector.

This document is a report from the pilot survey conducted in 2022 on topic 1 (i.e., *Skills analysis of Fintechs and how they contribute to skills gaps in the banking and alternative banking sector*) in South Africa.

SURVEY AND INTERVIEWS – QUANTITATIVE AND QUALITATIVE ANALYSES

This part presents analysis of the background information of the respondents, the respondents ranking of challenges and benefits of financial technology in financial institutions in South Africa.

Survey sample size

A total of 2 respondents comprised of IT staffs within 2 financial institutions completed the questionnaire and participated in the interviews for the pilot study.

1.0 BACKGROUND CHARACTERISTICS OF RESPONDENTS

The study included two participants who were both male IT officers with university education and 11-15 years of experience. The participants' ages ranged from 46 to 65 years, with an equal representation of each age group. The participants were also evenly split in terms of race, with one participant being white and the other being coloured (see Table 1).

2.0 CHALLENGES OF FINANCIAL TECHNOLOGY IN FINANCIAL INSTITUTIONS (FIS)

This section presents the level of challenges of Financial technology (FinTech) pose to financial institutions based on the responses given by respondents in the pilot survey using the questionnaire.

2.1 Levels of challenges in study

Table 2 presents the results of a study on the challenges of FinTech, as ranked by study participants using the Relative Importance Index (RII). The RII is a measure that takes into account both the importance of an item and its frequency of occurrence. The Table consists of 23 items ranked by their RII, with higher ranks indicating greater perceived importance.

The item ranked highest by study participants was "Virtual currencies reduce FIs' ability to create private money," with an RII of 0.7. This suggests that participants perceived virtual currencies as a significant challenge for financial institutions in terms of their ability to create private money. The item ranked second was "FinTech usage creates skills gap," followed by "FinTech usage creates confidentiality and data security problems" and "Fintech usage creates unacceptable marketing practices," respectively.

Other notable items include "FinTech reduces the return on assets," ranked fifth, "Fintech usage creates strategic and profitability risks," ranked sixth, and "Fintech usage creates lack of continuity in FIs processes," ranked seventh. These items suggest that participants perceived Fin-Tech as a potential threat to the financial institutions' profitability, strategic direction, and operational processes.

On the other hand, items ranked lower in the table, such as "Fintech usage creates liquidity risk" and "Fintech usage decreases the relationship between financial parties," indicate that these challenges were perceived as less significant by study participants.

2.2 Discussion on challenges of financial technology in financial institutions (FIS)

The results of the study on the challenges of Fin-Tech as ranked by the study participants using the Relative Importance Index (RII) are presented in the Table 2. The RII is a useful tool for ranking variables based on their relative importance, which is calculated by dividing the mean score of each item by the sum of all mean scores.

The study participants ranked "Virtual currencies reduce FIs' ability to create private money" as the most important challenge of Fin-Tech, with an RII of 0.7. This implies that the participants considered this challenge to be of high importance in the Fin-Tech industry. Further to this, FinTechs do not have the financial muscle like banks, and this is an economic challenge they face. An alternative bank consultant responded saying:

> *"We obviously don't have the size and the reach in the economy's scale that they have, but you know, using technology can certainly help us compete with them on a more level playing field"* (Alternative banker)

The second most important challenge, according to the participants, is "FinTech usage creates skills gap," with an RII of 0.6. This indicates that the participants viewed this challenge as being significant in the Fin-Tech industry, although not as important as the top-ranked challenge. Skills gap is synonymous with lack of sufficient IT skills and a reason for its high challenge.

> *"but I guess one of the biggest ones is a lack of IT skills in South Africa, even though we are copycat-ing a lot of technology that comes out of the States and Europe, as I've said, and that we are also leveraging cloud platforms, you still do need your own IT skills to configure the solutions for South African circumstances for South African regulation etc. And if you don't have the IT skills, and we certainly don't have enough IT skills in South Africa."* (Alternative banker)

The challenges of "Fintech usage creates confidentiality and data security problems" and "Fintech usage creates unacceptable marketing practices" are ranked third and fourth, respectively, with an RII of 0.6 each. Security problems and confidentiality is a major challenge as FinTech's are many and but not well branded and known to the public. Thus, dealing with FinTechs is a security concern as highlighted by an IT consultant.

> *"The other big challenge that you're going to pick up is, people have lots of ideas but to monetize those ideas are problematic, an example is, you can build an app now, the way you monetize an app is to have a payment mechanism, so*

you have to have Apple Pay, Google Pay, Mastercard, Visa, Diners, you have to have some way to actually get money, but before you can get that you have to be seen as a trusted party, and that's where some of the, where the issues with FinTech comes in is that, will you put your money onto a platform that you don't know? And most people will say no, but if they have Nedbank or Absa or Capitec behind that brand then, ok I trust them, so let me do it." (IT consultant)

These challenges are of equal importance by the participants, indicating the perceived significance of data security and ethical concerns in the Fin-Tech industry.

Other challenges, such as "FinTech reduces the return on assets" and "Fintech usage creates strategic and profitability risks," were ranked fifth and sixth, respectively, with an RII of 0.6 each, indicating their perceived importance by the study participants.

On the other hand, the challenges of "Banks are at low level of preparedness for FinTech" and "Fintech usage decreases the relationship between financial parties" were ranked as the least important challenges by the study participants, with an RII of 0.3 each. This implies that the participants viewed these challenges as being relatively unimportant in the Fin-Tech industry.

Included but not mentioned in the quantitative study were cost of banking technologies and regulation as challenges faced by FinTechs.

"Other ones would be you know the cost of equipment and software technology in dollars, given that the Rand is quite weak. And our regulation probably would

lag other countries in terms of being more friendly towards technology……"

(Alternative banker)

Overall, the results of this study suggest that the study participants perceived the challenges of virtual currencies, skills gap, data security, regulation, and ethical concerns as being some of the most important challenges in the Fin-Tech industry, while issues such as banks' preparedness and relationship between financial parties were viewed as being less important. These findings may be useful for policymakers, financial institutions, and other stakeholders in the FinTech industry to better understand the challenges they face and develop appropriate strategies to address them.

3.0 BENEFITS OF FINTECH IN FINANCIAL INSTITUTIONS (FIS)

From the answers provided by survey respondents, this section, based on the analyses, presents the degree of benefit Financial Technology (FinTech) offers to financial institutions. Table 3 ranks the benefits of Financial Technology to FIs according to a 5-point Likert scale with thirteen (13) items.

3.1 Degree of benefit FinTechs offer

The analysis revealed that the top benefit of FinTech is the reduction of transaction costs, with a RII of 1.0, followed closely by the acceleration of FI processes, also with a RII of 1.0. The third-ranked benefit is the enhancement of a level playing field with FIs and the induction of healthy competition, with a RII of 0.8. The enhancement of a level playing field as a benefit is supported by an alternative bank consultant response who said:

"………for a midsized company like us, technology is really how we level a playing field. I mean, our only opportunity and ability to compete with much larger players like the banks, like the bigger financial institutions, is if we can leverage technology smartly." (Alternative banker)

The fourth-ranked benefit is the improvement of effectiveness in the realization of FI processes, with a RII of 0.8. Financial institution's processes are realised through FinTech's improved and effective technologies, but this benefit does not resonate with all banker staffs.

"A large process of what FinTech's do is they optimize a process, and it's not always healthy, with the way they optimize it, so they're looking for the quickest and the easiest way, which is what the customer looks for, so you can get rid of paper, but in a banking world if I get rid of paper I technically get rid of people, and that's where some of the challenge comes back." (IT consultant)

The fifth-ranked benefit is the enhancement of financial inclusion, with a RII of 0.7. The inclusion of FinTech skills in FIs' human capital development is the sixth-ranked benefit, with a RII of 0.7.

The seventh-ranked benefit is the ability of FinTech to provide highly specialized financial services, with a RII of 0.6. Specialised financial services as a benefit for FinTech is because they use well-advanced technologies comparable to advanced economies as espoused by an alternative bank consultant.

"So, on the supply side we are clearly copying the technology that's coming out of first world countries, predominantly out of the United States." (Alternative banker)

Continuing, specialised services include crypto services and distributed legion says an IT consultant.

".....the only thing that FinTech's have probably been involved is in two of the big changes which is crypto currency and potentially under things like the distributed legion, under blockchain……" (IT consultant)

The transparency of FinTech activities compared to FIs is the eighth-ranked benefit, with a RII of 0.6. FinTechs being less regulated is the ninth-ranked benefit, with a RII of 0.6. The innovative use of data for marketing and risk management purposes by FinTechs is the tenth-ranked benefit, with a RII of 0.6.

The creation of potential positive impact on financial stability due to increased competition is the eleventh-ranked benefit, with a RII of 0.6. The promotion of FIs' credit to customers by FinTechs is the twelfth-ranked benefit, with a RII of 0.5. The creation of regulatory technology (RegTech) by FinTechs is the thirteenth-ranked benefit, also with a RII of 0.5.

Finally, the increase of FIs' deposit interest rates is the fourteenth-ranked benefit, with a RII of 0.3. Overall, the study shows that the reduction of transaction costs and the acceleration of FI processes are the two most significant benefits of FinTech, according to the surveyed participants as shown in Table 2 below.

3.2 Discussion on the benefits of Fintech in financial institutions (FIS)

The results show that the top two benefits of FinTech are reducing transaction costs and accelerating financial institution (FI) processes, with both benefits receiving a perfect score of 10. This indicates that the survey participants consider these benefits to be highly important. Fintech benefit to the larger financial institution industry does accelerate FI processes because of it abilities to leverage technology as a strength, so says an alternative bank consultant interviewed.

> *"So, overall, yes, we are extremely positive about technology, about fintech and you know, very focused on, in the years ahead, trying to use it more and more in order to be able to sustainably compete."* (Alternative bank consultant 1).

The next two benefits, enhancing the level playing field with FIs and improving the effectiveness of FI processes, also received high scores, with an RII of 0.8.

The remaining benefits were ranked lower, with the last benefit, increasing FIs deposit interest rates, receiving the lowest score. It is interesting to note that some benefits, such as providing highly specialized financial services and promoting FIs' credit to customers, received relatively low scores despite being commonly touted as benefits of FinTech. This could indicate that the survey participants do not consider these benefits to be as important as other benefits.

Overall, the survey results suggest that reducing transaction costs and accelerating FI processes are the most highly valued benefits of FinTech, while other benefits may not be as highly valued by the survey participants. These findings could be useful for policymakers and financial institutions looking to prioritize their investments in FinTech.

ADDENDA: Questionnaire and Tables

ADDENDUM 1: Questionnaire / Interviews questions guide Topic 1

<u>Bankers(IT staffs)</u>

1) FinTech awareness and banks' response

1.1 What is your opinion on FinTechs?

1.2 What are the drivers of FinTech development in SA?

1.3 What are the barriers of FinTech development in SA?

1.4 What are banks perceived effect of digital disruption on banks?

1.5 What is the level of preparedness of SA banks for FinTechs?

1.6 How and to what extent FinTechs are used by banks?

1.7 How are banks managing the competition pressure?

1.8 What are the strategies adopted by banks to remedy the disruption from FinTechs?

1.9 Which FinTech instrument is more disruptive in SA?

1.10 Which bank activity segment is the most exposed to FinTech threat?

1.11 What are the strategies through which banks adopt FinTech in South Africa (internal development? acquisition? collaboration? others?)

1.12 What are the motives of the choice of strategy to adopt FinTechs?

1.13 What are the motives of collaboration between banks and FinTechs?

1.14 What are the types of alliances between Banks and FinTechs (minority investment? product-related collaboration? majority investment?)?

1.15 What are the challenges of FinTechs adoption and use by banks?

1.16 What are the benefits of FinTechs adoption and use by banks?

1.17 Is FinTech safe for customers?

1.18 What is the effect of banks performance on FinTech adoption?

1.19 Overall, are the perceived challenges greater than the benefits or vice versa?

1.20 What should the regulators do to protect the financial institutions from FinTechs?

2) FinTech impact on the banking sector and banks performance

2.1 What is the impact of FinTech on market integrity?

2.2 What is the impact of FinTech on market stability?

2.3 What is the impact of FinTech on market sustainability?

2.4 To what extent FinTech has changed banks' traditional business models?

2.5 To what extent FinTech has changed banks' traditional applications?

2.6 To what extent FinTech has changed banks' traditional processes?

2.7 To what extent FinTech has changed banks' traditional products?

2.5 What is the impact Fintech on the ways banks provide financial services to customers?

2.6 What is the customers' reaction to FinTech development?

2.7 What are banks responses to the reduction of margins/fees due to FinTechs?

2.8 What is the impact of FinTechs development on banks' overall performance in SA?

2.9 What are the expected new changes in the banking sector?

3) FinTech and skills needs

3.1 What is the general knowledge required from entry levels and other banking professionals for the utilization of FinTech?

3.2 What are the technological skills required from entry levels and other banking professionals?

3.3 How efficient are university graduates' programmes in meeting banks' IT needs?

3.4 How can IT training needs be met?

3.5 What are the FinTech skills gap in the banking sector currently?

3.6 What are other ways the skills gap can be closed?

3.7 Other?

QUESTIONNAIRE: IMPACT OF FINTECH ADOPTION AND BANKS PERFORMANCE

SECTION A. DEMOGRAPHY

1. Age

0-25	
26-35	
36-45	
46-55	
56-65	
66-75	

2. Gender

Male	
Female	
Other	

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3. Race

Black	
White	
Coloured	
Other	

4. Education

No schooling	
Primary School	
High School	
University/College	

5. Professional title

Office manager	
FinTech expert	
IT Officer	
General worker	

6. Experience

0 – 2 years	
3 – 5 years	
6 -10 years	
11 - 15 years	

SECTION B. FINTECH AND BANK PERFORMANCE

(1= Strongly disagree; 2=disagree; 3=Neutral; 4=Agree; 5=Strongly Agree)

	Challenges	**5**	**4**	**3**	**2**	**1**
1	FinTech causes disruption and financial instability (due to their riskiness and possible regulatory arbitrage)					
2	Banks are at low level of preparedness for FinTech					
3	FinTech affects banks payment systems and hence their margins					
4	Peer-to-Peer lending affect banks' lending and hence their interest income					
5	Robo-advisors/automated algorithms reduce wealth and portfolio management fees					
6	Peers-to-peers lending reduce origination and servicing					
7	Virtual currencies reduce banks' ability to create private money					

8	FinTech reduces the return on assets					
9	FinTech reduces the return on equity					
10	FinTech reduce net interest margin					
11	Fintech usage creates confidentiality and data security problems					
12	Fintech usage creates lack of continuity in banking processes					
13	Fintech usage creates unacceptable marketing practices					
14	FinTech increases banks' risky behavior					
15	Fintech usage creates strategic and profitability risks					
16	Fintech usage decreases the relationship between financial parties					
17	Fintech usage creates high operational risks					
18	Fintech usage creates third parties' management risks					
19	Fintech usage creates compliance risk such as the failure of consumer protection and data protection regulation					
20	Fintech usage creates terrorism financing risk and money laundering risk					
21	Fintech usage creates liquidity risk					
22	Fintech usage creates banks' financing sources volatility risk					
23	FinTech usage creates skills gap					
	Benefits	**5**	**4**	**3**	**2**	**1**
1	FinTech enhances level playing field with banks/induces healthy competition					
2	FinTech enhances financial inclusion					
3	Fintech can provide highly specialised banking services					
4	FinTech activities are more transparent thank banks					
5	FinTechs are less regulated					
6	Fintech reduces transaction costs					
7	FinTechs promote banks' credit to SMEs					
8	FinTech increases banks deposit interest rates					
9	Fintech accelerates banking processes					
10	Fintech improves the effectiveness in the realisation of banking processes					
11	Fintech innovates the use of data for marketing and risk management purposes					
12	Fintech creates potential positive impact on financial stability due to increased competition					
13	Fintech creates RegTech (regulatory technology)					
14	FinTech skills are included in banks human capital development					

ADDENDUM 2: TABLES 1 – 3 Topic 1 Quantitative Analysis

Table 1: Descriptive statistics of the background of the study respondents

Variable / Category		Number (n)	Percent (%)
AGE			
46-55		1	50.0
56-65		1	50.0
	Total	2	100.0
GENDER			
Female		0	0.0
Male		2	100.0
	Total		
RACE			
White		1	50.0
Coloured		1	50.0
	Total	2	100.0
EDUCATION			
University		2	100.0
	Total		
PROFESSIONAL TITLE			
IT officer		2	100.0
	Total		
EXPERIENCE			
11 - 15		2	100.0
	Total		

Source: Pilot survey, 2022

Table 2: Ranking of FinTech challenges in Financial Institutions

Item	Number	Sum	Mean	Std. Deviation	RII	Rank
Virtual currencies reduce FIs' ability to create private money	2	7.00	3.50	2.12	0.7	1
FinTech usage creates skills gap	2	6.00	3.00	1.41	0.6	2
Fintech usage creates confidentiality and data security problems	2	6.00	3.00	1.41	0.6	3

Fintech usage creates unacceptable marketing practices	2	6.00	3.00	0.00	0.6	4
FinTech reduces the return on assets	2	6.00	3.00	2.83	0.6	5
Fintech usage creates strategic and profitability risks	2	6.00	3.00	1.41	0.6	6
Fintech usage creates lack of continuity in FIs processes	2	5.00	2.50	2.12	0.5	7
FinTech reduce net interest margin	2	5.00	2.50	2.12	0.5	8
Fintech usage creates third parties' management risks	2	3.00	1.50	0.71	0.5	9
Fintech usage creates compliance risk such as the failure of consumer protection and data protection regulation	2	5.00	2.50	2.12	0.5	10
FinTech reduces the return on equity	2	5.00	2.50	2.12	0.5	11
Fintech usage creates high operational risks	2	5.00	2.50	2.12	0.5	12
Robo-advisors/automated algorithms reduce wealth and portfolio management fees	2	5.00	2.50	2.12	0.5	13
Fintech usage creates terrorism financing risk and money laundering risk	2	4.00	2.00	0.00	0.4	14
Peers-to-peers lending reduce origination and servicing	2	4.00	2.00	0.00	0.4	15
FinTech causes disruption and financial instability (due to their riskiness and possible regulatory arbitrage)	2	4.00	2.00	1.41	0.4	16
FinTech affects banks payment systems and hence their margins	2	4.00	2.00	1.41	0.4	17
Peer-to-Peer lending affect banks' lending and hence their interest income	2	4.00	2.00	1.41	0.4	18
Fintech usage creates FIs' financing sources volatility risk	2	4.00	2.00	1.41	0.4	19
FinTech increases FIs' risky behaviour	2	4.00	2.00	1.41	0.4	20
Banks are at low level of preparedness for FinTech	2	3.00	1.50	0.71	0.3	21

Fintech usage creates liquidity risk	2	5.00	2.50	2.12	0.3	22
Fintech usage decreases the relationship between financial parties	2	3.00	1.50	0.71	0.3	23

RII = Relative importance index

Source: Pilot survey, 2022

Table 3: Ranking of benefits of FinTech in Financial Institutions

Item	Number	Sum	Mean	Std. Deviation	RII	Rank
Fintech reduces transaction costs	2	10.00	5.00	0.00	1.0	1
Fintech accelerates FI processes	2	10.00	5.00	0.00	1.0	2
FinTech enhances level playing field with FIs/induces healthy competition	2	8.00	4.00	1.41	0.8	3
Fintech improves the effectiveness in the realisation of FI processes	2	8.00	4.00	0.00	0.8	4
FinTech enhances financial inclusion	2	7.00	3.50	2.12	0.7	5
FinTech skills are included in FIs human capital development	2	7.00	3.50	0.71	0.7	6
Fintech can provide highly specialised financial services	2	6.00	3.00	1.41	0.6	7
FinTech activities are more transparent than FIs	2	6.00	3.00	0.00	0.6	8
FinTechs are less regulated	2	6.00	3.00	1.41	0.6	9
Fintech innovates the use of data for marketing and risk management purposes	2	6.00	3.00	1.41	0.6	10
Fintech creates potential positive impact on financial stability due to increased competition	2	6.00	3.00	1.41	0.6	11
FinTechs promote FIs' credit to customers	2	5.00	2.50	0.71	0.5	12
Fintech creates RegTech (regulatory technology)	2	5.00	2.50	0.71	0.5	13
FinTech increases FIs deposit interest rates	2	3.00	1.50	0.71	0.3	14

RII = Relative importance index

Source: Pilot survey, 2022.