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REPORT ON
CURRENT CAPACITIES OF HIGHER EDUCATIONAL INSTITUTIONS IN TRAINING MASTER OF FINTECH IN VIETNAM

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1. SURVEY OBJECTIVES

The objectives of this survey are in assessing the current situation and training needs in the field of financial technology (FINTECH) at Vietnam's universities. Based on the survey of Vietnamese universities' experts, the project team identifies the general and specific competencies of the Fintech program. On that basis, the universities are able to have the appropriate strategy in developing the content of the Fintech training program.

Vietnamese partners include 3 universities (University of Economics, Hue University (HCE); University of Economics, Hanoi National University (VNU-UEB) and Ho Chi Minh City Open University (HCMOU) conducted a survey with 52 respondents from different universities to analyze training needs for new skills in the financial technology sector.

2. SURVEY METHODS

2.1. Questionnaire design

Before conducting the survey, the questionnaire was developed and completed through the following steps:

(1) The questionnaire was developed with partners in the Philippines along with related European partners' comments.

(2) Questionnaire was translated into Vietnamese then being edited by experts from the University of Economics, Vietnam National University (VNU-UEB), and Ho Chi Minh City Open University (HCMOU) to ensure the accuracy of terms.

(3) Upon the list of professors, managers at Vietnam's universities, the questionnaires were delivered via email or reliable application (Zalo) to respondents.

2.2. Data collection and analysis

Respondents in the survey include experienced lecturers and leaders from the Vietnamese universities. These respondents are selected because they have experience in developing and implementing the Fintech related training programs at universities in Vietnam.

This study utilized a combination of online and face to face survey methods. In terms of the online survey, the team collected email addresses, phone numbers of potential respondents at universities and emailed the questionnaires to them via links on Google Drive. Regarding the face to face survey, the team conducted the interviews with the respondents via telephone. After the survey, the project team collected 52 feedback questionnaires from representatives of Vietnam's universities.

All data are processed in Excel software. Statistical analysis (frequency) methods are used to aggregate the data.

3. SURVEY TIME

The survey was conducted from 15/7/2020 to 15/9/2020.

4. RESULTS

4.1. The current situation of Master's Program in Fintech at Vietnam's universities

The study results show that there are only 2 universities (account for 3.8%) in the total of 52 surveyed universities offering the Master's Program in Financial Technology. Because Fintech is a new field of study in Vietnam, the number of universities offering Master of Fintech is limited. In the context of industry 4.0, the demand for fintech experts is rapidly increasing, this field of study should be included in the training programs of universities in Vietnam in order to meet the labour market's needs.

Table 1. Number of Fintech Master's Program offered in Vietnam universities

Option	Number of respondents	Percentage of respondents (%)
Non-offering	50	96.2
Offering	2	3.8
Total	**52**	**100**

(Source: Survey result, 2020)

4.2. A plan for offering Master of Fintech at Vietnam's universities in the future

As can be seen in ***Table 2***, 57.7% of respondents stated that their institution would have a plan to offer a Master's Program in Financial Technology and Digital Innovation in coming years. With the rapid change of technological application into the banking sector in developing countries like Vietnam, the need for human resources in financial technology have rapidly increased. Therefore, it is likely that the universities tended to offer new training programs to satisfy social needs.

Table 2. Plan to offer Master's Program in Financial Technology & Digital Innovation

Plan to offer Master of Fintech	Number of respondents	Percentage of respondents (%)
No plan	22	42.3
Have a plan	30	57.7
Total	52	100.0

(Source: Survey result, 2020)

Although many universities have had a plan to offer a Master's Program in Financial Technology and Digital Innovation, the offering of new Program is carefully considered may be due to limited training capacity. 50% of the respondents stated that they would offer the new Program in 4 or 5 years. While 40% of the respondents will offer the new Program in 2 or 3 years. Consequently, it is vital for Vietnam's universities to invest in enhancing the training capacity of Financial Technology in the coming time.

Table 3. Time to offer Master's Program in Financial Technology & Digital Innovation

Time	Number of respondents	Percentage of respondents (%)
In 4 or 5 years	26	50.0
In 2 or 3 years	21	40.4
Next year	3	5.8
Next semester	2	3.8
Total	**52**	**100.0**

(Source: Survey result, 2020)

4.3. The motivation to offer the Master's Program in Financial Technology and Digital Innovation

The findings indicated that offering a new training program is based on the « *needs of market labour* ». There were about 78% of respondents considered the « *needs of market labour*» as «very important » and « important » factor of offering the Master of Fintech. In this sense, the market demand for Master's Program in FINTECH is great in Vietnam.

Besides, the « *demand for new learning* » is a motivational factor influencing on the intention to offer this Master's Program in Vietnam's universities (36.5% of respondents regarded this as « very important »).

Table 4. Motivational factors for offering Master of Fintech

Level of importance	Number of respondents		Percentage of respondents (%)	
	Demand for new learning	Career considerations/ market demand	Demand for new learning	Career considerations/market demand
Very important	19	23	36.5	44.2
Important	22	18	42.3	34.6

Level of importance	Number of respondents		Percentage of respondents (%)	
	Demand for new learning	Career considerations/ market demand	Demand for new learning	Career considerations/market demand
Somewhat important	5	1	9.6	1.9
Minimally important	5	9	9.6	17.3
Not important	1	1	1.9	1.9
Total	**52**	**52**	**100**	**100**

(Source: Survey result, 2020)

4.4. Graduate programs related to Financial Technology and Digital Innovation

As presented in ***Table 5***, there were 2 popular programs related to FINTECH in Vietnam comprising Master in Finance and Master in Information Technology with 73,1% and 42,3%, respectively. Nevertheless, Vietnam's universities offer them in two distinguished training programs that lead to the quality that has not been equivalent to the demand. For instance, a student who pursues the Finance program lacking the knowledge in Information Technology and vice versa; some students are good at Information Technology but do not have an insight of Finance, Banking, and Insurance field. Thus, the demand for Master's Program in FINTECH is crucial to enhancing the knowledge for the student in the future.

Table 5. The current Program relating to Financial Technology and Digital Innovation

Programs	Number of respondents		% of respondents	
	Yes	No	Yes	No
MBA major in Financial Management	16	36	30.8	69.2
Master in Business Analytics	5	47	9.6	90.4
Master in Information Technology	22	30	42.3	57.7
Master in Financial Engineering	4	48	7.7	92.3
Master in Finance	38	14	73.1	26.9
Master in Computational Finance	8	44	15.4	84.6
Other	17	35	32.7	67.3

(Source: Survey result, 2020)

4.5. Current capability for training Master in FINTECH

The survey results show that the strength of universities at Vietnam is to have a good internet connection and computer (40.4% and 36.5% of respondents agreed with « fully developed »). The internet is well developed in Vietnam during the last decade and people are easily accessing internet any time. On the other hand, the weakness of Vietnam's universities when being implemented the training program is the shortage of software and technical competency of lecturer/professor for the use of learning technologies and software.

Table 6. University capability for technological aspects

Technological aspects	Number of respondents				% of respondents			
	Fully Developed	*Developed with Some Minor Development Needed*	*Development Needed*	*Challenging and Substantial*	*Fully Developed*	*Developed with Some Minor Development Needed*	*Development Needed*	*Challenging and Substantial*
Access to computer (desktop or laptop)	19	26	3	4	36.5	50.0	5.8	7.7
Access to internet connection (at least 3Mbps)	21	22	3	6	40.4	42.3	5.8	11.5
Access to licensed software (software required by the course)	7	22	13	10	13.5	42.3	25.0	19.2
Technical competency of lecturer or professor for use of learning technologies and software	9	26	3	14	17.3	50.0	5.8	26.9

(Source: Survey result, 2020)

4.6. Selection/Option of training program mode

The delivery mode of Hybrid format is currently selected to offer the Master's Program in FINTECH (approximately 50% of respondents). At present, the mode of Hybrid format is

popularly carried out in Vietnam corresponds to the mode of training Master's Program in FINTECH.

Table 7 : Proposed delivery mode for Master in Financial Technology and Digital Innovation Program

Delivery mode	Number of respondents		% of respondents	
	Yes	No	Yes	No
Fully face-to-face (F2F in-class) program	24	28	46.2	53.8
Fully on-line program	6	46	11.5	88.5
Hybrid format (50% F2F, 50% online)	27	25	51.9	48.1
75% F2F, 25% online	27	25	51.9	48.1
25% F2F, 75% online	8	44	15.4	84.6

(Source: Survey result, 2020)

4.7. Factors influencing the selection of training program

It is clearly that there are many factors influencing the students' selection of training Master's Program in FINTECH, in which three factors are the most important including Program's academic reputation ; Mode of delivery/Teaching Approach and Profile of faculty members meanwhile the factors of class size, cost are the least important (**Table 8**).

In addition, the teaching approach has a great impact on students' selection of training programs. 98% of respondents agreed that the teaching approach is an influential factor in their selection of training Master's Program in FINTECH.

Table 8: Factors for prospective students of Master in Financial Technology and Digital Innovation Program

FACTORS	Number of respondents					% of respondents				
	Very important	*Important*	*Somewhat important*	*Minimal Important*	*Not important*	*Very important*	*Important*	*Somewhat important*	*Minimal Important*	*Not important*
School's academic reputation	10	31	8	2	1	19.2	59.6	15.4	3.8	1.9

Program's academic reputation	16	31	4	1	0	30.8	56.6	7.7	1.9	0.0
Preference for a faith-based university	13	25	10	4	0	25.5	48.1	19.2	7.7	0.0
Convenient schedule	14	21	10	6	1	26.9	40.4	19.2	11.5	1.9
Cost	13	25	12	2	0	25.0	48.1	23.1	3.8	0.0
Student support services	11	27	10	4	0	21.2	51.9	19.2	7.7	0.0
Small class size	7	17	16	11	1	13.5	32.7	30.8	21.2	1.9
Class availability	10	20	15	4	3	19.2	38.5	28.8	7.7	5.8
Accelerated program completion	11	26	11	4	0	21.2	50.0	21.2	7.7	0.0
Mode of delivery/Teaching Approach (interactive/ workshops versus traditional academic approach)	22	23	6	1	0	42.3	44.2	11.5	1.9	0.0
Profile of faculty members	19	22	9	2	0	36.5	42.3	17.3	3.8	0.0
Location/Proximity to workplace	13	20	11	7	1	25.0	38.5	21.2	13.5	1.9
Undergraduate background	4	30	13	4	1	7.7	57.7	25.0	7.7	1.9
Current work assignment	8	35	6	3	0	15.4	67.3	11.5	5.8	0.0

(Source: Survey result, 2020)

4.8 The best teaching approach/modality to adopt for the Master of Fintech

When being asked about the best teaching approach for Master's Program in FINTECH, 44,2% of respondents believed that « Combination of traditional and interactive: teacher delivers lectures, students engage in discussion, workshops, business case studies » is the best one. In Vietnam's universities, the traditional teaching approach is widely used. However, if students are able to apply well technology, the combination of traditional and interactive teaching approach will bring more effectiveness and be suitable for them.

Table 9 – Preferred teaching approach

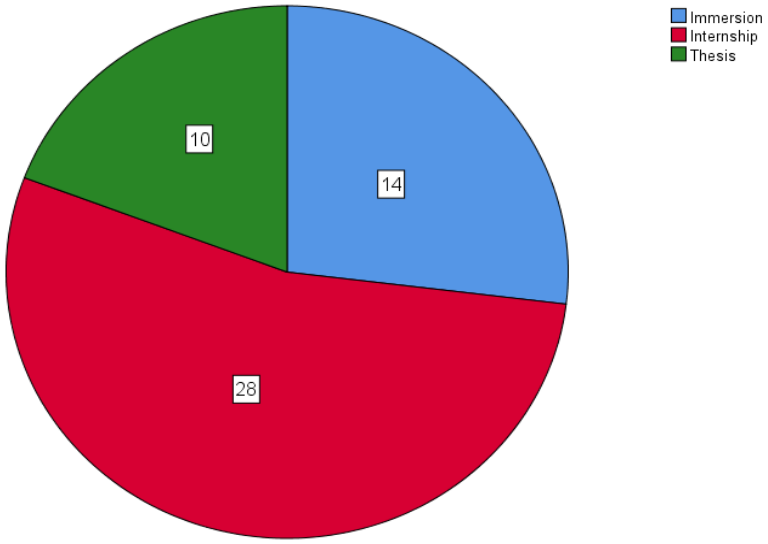
Teaching approach	Frequency	Percent

Combination of traditional and interactive: teacher delivers lecture, students engage in discussion, workshops, business case studies.	23	44.2
Flexible with discussion, and tiered: Teacher provides course syllabus & reading materials with activities for students to carry out for the whole period. Students get certificates per module.	13	25.0
Interactive: Teacher submits all materials with case studies to students before classes start. Then, students discuss with teacher together on academic topics and business cases.	13	25.0
Traditional with workshops, group assignments, seminar: Teacher conducts lecture and workshop with group assignments; sends students or organize seminars inviting resource person/s.	3	5.8
Total	**52**	**100.0**

(Source: Survey result, 2020)

4.9. Internship

The internship is mostly chosen when being implemented in the Master's Program in FINTECH because it creates a good opportunity for students to apply their knowledge to Fintech enterprises, banks, insurance companies. The internship duration is from 3 to 6 months being preferred time for students to get to know about the actual operation of fintech services and enterprises (Table 10).



(Source: Survey result, 2020)

Table 10 – Preferred internship time

Internship time	Frequency	Percent
< 3 Months	12	23.1
3 – 6 Months	26	50.0
> 6 Months	14	26.9
Total	**52**	**100**

(Source: Survey result, 2020)

4.10. FinTech-related publications

As indicated in Table 11, the percentage of universities that have FinTech-related publications is still limited, and the reason why could be Fintech is a new field.

Table 11 – FinTech-related publications

Number of publications	Frequency	Percent
< 10	32	61.5
10 - 20	15	28.8
21 - 30	1	1.9
> 30	4	7.7
Total	**52**	**100.0**

(Source: Survey result, 2020)

4.11. The importance of courses for Master in Financial Technology

In order to identify the essential courses in FinTech field, it is crucial to conduct a survey with all listed courses of Master's Program in FINTECH so that respondents can evaluate the level of importance of each factor.

Obviously, the findings showed that the demand for courses of Master's Program in FINTECH is various, including the related courses in Finance and Information Technology. The courses are related to IT being assessed the most important ones such as Algorithmic Trading and Robo-Advisors; Blockchain Systems: Concepts and Principles; Data Mining; Technical Solutions and Finance Applications; Data Management and Business Intelligence; Design and Innovation Thinking. Additionally, the related courses in Finance such as Principles of Finance and Risk Management; Quantitative Methods in Finance; Financial and Risk Analytics; Probability and Statistics; Entrepreneurship Principles and Business Planning; Project and Program Management. The basic courses are, moreover, related to the concepts of Financial Technology being assessed as important: Introduction to Fintech; Fintech Ecosystem and Innovations.

Table 11: List of important courses for Master in Financial Technology and Digital Innovation

COURSES	Number of respondents				% of respondents			
	Extremely Important	Very Important	Important	Not at all	Extremely Important	Very Important	Important	Not at all
Introduction to Fintech	21	19	12	0	40.4	36.5	23.1	0.0
Fintech Ecosystem and Innovations	14	26	12	0	26.9	50.0	23.1	0.0
Principles of Finance and Risk Management	14	26	10	2	26.9	50.0	19.2	3.8
Algorithmic Trading and Robo-Advisors	15	23	13	1	28.8	44.2	25.0	1.9
Blockchain Systems: Concepts and Principles	18	19	14	1	34.6	36.5	26.9	1.9
Probability and Statistics	17	26	8	1	32.7	50.0	15.4	1.9
Data Mining	13	26	12	1	25.0	50.0	23.1	1.9
Quantitative Methods in Finance	20	20	10	2	38.5	38.5	19.2	3.8
Financial and Risk Analytics	16	25	9	2	30.8	48.1	17.3	3.8
Data Management and Business Intelligence	19	22	11	0	36.5	42.3	21.2	0.0
Design and Innovation Thinking	16	21	14	1	30.8	40.4	26.9	1.9
Entrepreneurship Principles and Business Planning	14	19	15	4	26.9	36.5	28.8	7.7
Project and Program Management	14	19	17	2	26.9	36.5	32.7	3.8
Technical Solutions and Finance Applications	17	26	8	1	32.7	50.0	15.4	1.9
Python Programming	5	32	14	1	9.6	61.5	26.9	1.9
Python for Data Analysis	7	32	12	1	13.5	61.5	23.1	1.9
Advanced Natural Language Processing and Deep Learning	8	26	12	6	15.4	50.0	23.1	11.5
Regulatory Technology	7	29	11	5	13.5	55.8	21.2	9.6

COURSES	Number of respondents				% of respondents			
	Extremely Important	Very Important	Important	Not at all	Extremely Important	Very Important	Important	Not at all
Anti-Financial Crime and Compliance	8	24	18	2	15.4	46.2	34.6	3.8
Operations Research	10	20	15	7	19.2	38.5	28.8	14.4
Time Series Analysis	14	19	16	3	26.9	36.5	30.8	5.8
Information Retrieval and Analysis	14	25	12	1	26.9	48.1	23.1	1.9
Applied Cryptography	12	25	13	2	23.1	48.1	25.0	3.8
People Management	3	26	19	4	5.8	50.0	36.5	7.7
Negotiation Principles	3	22	23	4	5.8	42.3	44.2	7.7
Marketing and Communication Effectiveness	10	19	19	4	19.2	36.5	36.5	7.7
Venture Creation and Startup	6	25	19	2	11.5	48.1	36.5	3.8

(Source: Survey result, 2020)

Yet, the preparation for delivering the new courses had shortcomings due to the limited training programs in Vietnam, especially limited courses in IT and Fintech. Therefore, there is a need for teaching staff to be supported to train the courses at Vietnam's universities.

Table 12: The preparation of delivering/teaching proposed courses

COURSES	Number of respondents				% of respondents			
	Extremely Well	Very Well	Quite Well	Not at all	Extremely Well	Very Well	Quite Well	Not at all
Blockchain Systems: Concepts and Principles	6	7	17	22	11.5	13.5	32.7	42.3
Python Programming	1	11	9	31	1.9	21.2	17.3	59.6

COURSES	Number of respondents				% of respondents			
	Extremely Well	Very Well	Quite Well	Not at all	Extremely Well	Very Well	Quite Well	Not at all
Python for Data Analysis	0	12	9	31	0.0	23.1	17.3	59.6
Data Mining	7	8	18	19	13.5	15.4	34.6	36.5
Advanced Natural Language Processing and Deep Learning	3	8	16	25	5.8	15.4	30.8	48.1
Algorithmic Trading and Robo-Advisors	6	6	9	31	11.5	11.5	17.3	59.6
Applied Cryptography	6	5	8	33	11.5	9.6	15.4	63.5
Regulatory Technology	3	9	10	30	5.8	17.3	19.2	57.7
Anti-Financial Crime and Compliance	1	10	13	28	1.9	19.2	25.0	53.8
Marketing and Communication Effectiveness	0	19	17	16	0.0	36.5	32.7	30.8
Venture Creation and Start-up	1	16	17	18	1.9	30.8	32.7	34.6
Technical Solutions and Finance Applications	4	10	20	18	7.7	19.2	38.5	34.6
Introduction to Fintech	3	18	12	19	5.8	34.6	23.1	36.5
Fintech Ecosystem and Innovations	7	12	11	22	13.5	23.1	21.2	42.3
Principles of Finance and Risk Management	12	18	13	9	23.1	34.6	25.0	17.3
Probability and Statistics	12	18	15	7	23.1	34.6	28.8	13.5
Quantitative Methods in Finance	12	13	18	9	23.1	25.0	34.6	17.3
Financial and Risk Analytics	11	14	18	9	21.2	26.9	34.6	17.3
Operations Research	6	14	12	20	11.5	26.9	23.1	38.5
Time Series Analysis	9	16	19	8	17.3	30.8	36.5	15.4
Data Management and Business Intelligence	4	12	18	18	7.7	23.1	34.6	34.6

COURSES	Number of respondents				% of respondents			
	Extremely Well	Very Well	Quite Well	Not at all	Extremely Well	Very Well	Quite Well	Not at all
Information Retrieval and Analysis	4	10	14	24	7.7	19.2	26.9	46.2
Design and Innovation Thinking	7	10	16	19	13.5	19.2	30.8	36.5
Entrepreneurship Principles and Business Planning	9	8	19	16	17.3	15.4	36.5	30.8
Project and Program Management	8	16	17	11	15.4	30.8	32.7	21.2
People Management	3	18	17	14	5.8	34.6	32.7	26.9
Negotiation Principles	8	12	16	16	15.4	23.1	30.8	30.8

(Source: Survey result, 2020)

5. CONCLUSION

The findings on the capacities of higher educational institutions in Vietnam illustrated that there is a great demand for Master's Program in FINTECH. Furthermore, many higher education institutions have had a plan for training Master's Program in FINTECH to meet the social needs. Nevertheless, this is the new Program, while the current capacities of higher educational institutions are limited, particularly related courses in technology. As a result of that, higher educational institutions in Vietnam have paid more attention to enhancing their capacities in FINTECH, being necessarily supported by the government and international projects.

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