



# KONFERENCIAKÖTET

## Conference Proceedings

**Nemzetközi tudományos konferencia  
a Magyar Tudomány Ünnepe alkalmából**  
International Scientific Conference  
on the Occasion of the Hungarian Science Festival

**Sopron, 2022. november 3.**  
3 November 2022, Sopron

**TÁRSADALOM – GAZDASÁG – TERMÉSZET:  
SZINERGIÁK A FENNTARTHATÓ FEJLŐDÉSBN**

SOCIETY – ECONOMY – NATURE: SYNERGIES IN SUSTAINABLE DEVELOPMENT

Szerkesztők / Editors:

OBÁDOVICS Csilla, RESPERGER Richárd, SZÉLES Zsuzsanna, TÓTH Balázs István

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## Procrastination and its Influencet on Retirement Saving Plann

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### Abstract

Two types of pension schemes are currently used in many countries, including Defined Contribution (DC) and Defined Benefit (DB). Demographic change, and ageing among population requires to implement defined contribution schemes rather than defined benefit scheme. However, most people tend to procrastinate retirement saving because of a lack of self-control, time inconsistency, and present biased preferences. Therefore, this research aimed to investigate procrastination behavior and its' influence on retirement saving plan. The researcher reviewed existing practices of defined contribution (DC) retirement plan implementation in USA, the country that has been implementing of DC for long time. In addition, researcher made simple analysis on OECD countries participation rate to defined contribution (DC) retirement plan. Third, the researcher took focus group interview from six different participants in Mongolia, the country that is currently make attempt to implement defined contribution (DC) retirement plan. The result shows that people tend to procrastinate their retirement saving plan in most cases. The researcher suggested previous practices and behavioral tools that are helping to implement retirement plans successfully, including automatic enrollment, incentives, commitments, and financial education.

*Keywords:* procrastination, retirement plan, defined contribution scheme

*JEL Codes:* D14, G41

### 1. Introduction

Procrastination is individual's behavior to delay certain tasks and decision. According to the several studies, every individual is experienced procrastination, however around 20 percent of the population tend to have chronic procrastination behavior (Ellis & Knaus, 1979; APA, 2010; MacNaught, 2020). From the economical perspective, it is hugely effects on individuals financial and economic decisions, including accumulated debt of credit card, and no savings for the future. It can be explained as, individuals feel immediate satisfaction form consumption and immediate cost from saving (Barboza, 2017). Therefore, many scholars and economists are interested in this topic, specifically procrastination of pension plan is classic example within this topic.

There are two types of pension schemes, including Defined Contribution (DC) and Defined Benefit (DB) (Börsch-Supan, 2005). A defined benefit (DB) pension scheme is considered as traditional method, which based on redistributive system. However, Defined Contribution (DC) is more depends accurate and optimal choice on individuals' contribution amount. There are many countries started implementing Defined contribution (DC) plan in the beginning of 2000s. For instance, defined contribution plan is common in USA, moreover UK suggest National Employment Savings Trust (NEST) and the UK's personal retirement plans. Germany has its own plans which are named Riester plans, as well as Australia has Superannuation system,

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while New Zealand offer its KiwiSaver scheme. During the implementation of defined contribution (DC) plans, many economists and scholars observed procrastinating tendency among employees (Thaler & Benartzi, 2004; Börsch-Supan, 2005; Choi et al., 2002).

Moreover, demographic change, and ageing among population requires to implement defined contribution schemes rather than defined benefit scheme. For instance: according to PWC (2019) population of the earth will be increased by one more billion and over 300 million people will be aged over 65 in 2030. Specifically, some continents including Europe would be majorly influenced by this demographic change, and ageing of population. This leads to loss proper ratio between workforce and retired people, and eventually it will not able to finance redistributive retirement plans like defined benefit (DB) plans. Therefore, defined contribution scheme would be the optimal choice for some countries.

In order to give clear understanding, the researcher aimed to investigate the relationship between procrastination and saving behavior, specifically, its relation to retirement plans with this paper. This issue is a classic exemplar of how procrastination works and why people tend to delay their future investment.

## **2. Literature review**

### ***2.1. Procrastination***

Earlier, the term of procrastination was more related to academic procrastination issues. Silver defined procrastination as stress related to deadlines. Procrastination plays a crucial role in decision making, particularly psychologists and economists acknowledged that individuals tend to procrastinate more if the decision getting important (Brown & Previtro, 2020). Economist George Akerlof (1991) firstly introduced procrastination in the economic literature. Akerlof states that individuals tend to choose present reward over future profit.

There are several economic implications need to be considered in the case of procrastination theory (Sabarwal, 2020). Firstly, procrastination is related to “opportunity cost”, this means that people are losing their opportunity that can be achieved through procrastinating decision making. Basically, it explains that individuals procrastinated choice creates loss of opportunity. Another implication is hyperbolic discounting, which refers to individuals’ preference of present time over the future. Hyperbolic agents prefer present time because they assume that present action is important than future actions. If the agent is naïve, it means the agent more tend to procrastinate (Thaler & Benartzi, 2004).

The third implication is time inconsistency, that refers to individuals’ decision-making inconsistency over time. For instance: an individual tends to not having same decision making in different times. Strotz (1955) notes that timeless choices can be time consistent, only in the case of agents’ constantly discounting action. However, there are evidences that individuals act time-inconsistently, particularly, through comparing present and future consumptions (Thaler & Benartzi, 2004). Finally, those implications are related to the differences in time of decision making.

There are several models developed for explaining procrastination. For instance: O’Donoghue and Rabin developed “present biased preferences” based on Akerlof’s idea. The theory attached broad adaptation of models, including hyperbolic discounting model. According to O’Donoghue and Rabin (1999) present bias is the individuals’ action to prefer of present time while concerning about trade-offs between two future moments. The present biased preferences are related to individuals’ sophistication level. O’Donoghue and Rabin (1999) accuse that naïve people tend to procrastinate more than sophisticated people.

Moreover, procrastination is related to many behavioral aspects like self-control, inertia, nudge, over choice, scarcity etc. For instance: lack of self-control is one of the biggest problems that cause procrastination (Thaler & Benartzi, 2007).

Over choice is another aspect that needs to be addressed, specifically, choice overloads can lead wrong decision or procrastinating of decision making (Iyengar & Lepper, 2000). Conversely, individuals tend to perceive valuable when choices are limited by quantity, type, or time (Cialdini, 2008). In the case of decision procrastination, choice architects use choice affecting nudge tools like pre-commitment or default settings are widely used to help people to overcome their procrastinating problem. According to Thaler and Sunstein (2008), a nudge is a guiding intervention for an individual's decision-making smoothly. After precommitment individuals tend to continue their commitment under the influence of inertia. However, Simon states that when individuals make decision, they tend to choose the choices gave them satisfaction rather than rational choices (Simon, 1956).

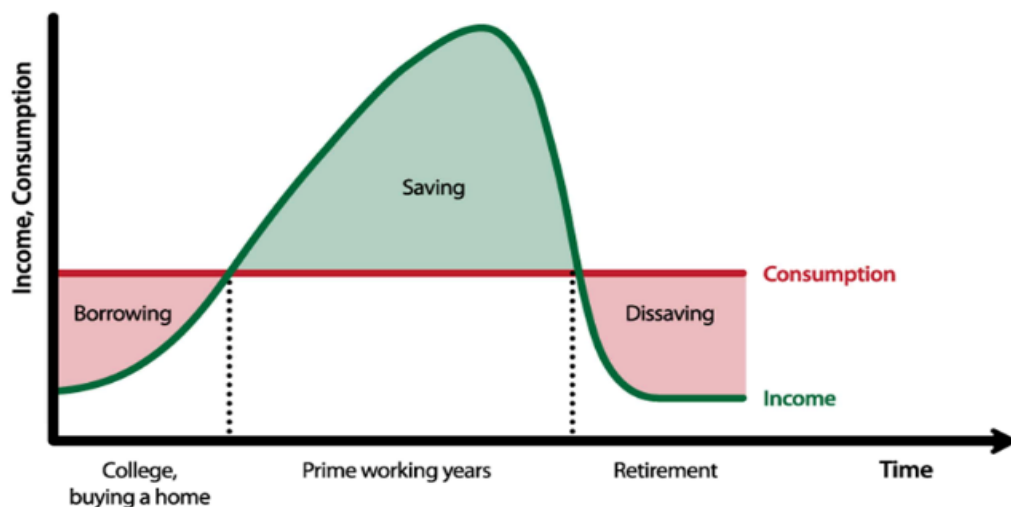
*Hypothesis 1: Individuals prefer present reward rather than future profit.*

## 2.2. Saving behavior and procrastination

Saving behavior is perfectly fit to explain the framework of procrastination (Barboza, 2017). Fisher (1930) suggests other six individuals' characteristics that influence saving behavior:

- No clear objectives or concerns about the future.
- Having a habit to spend.
- Having a lack of self-control.
- Being selfish or no concerns about the descendants.
- Enjoying in the present, no belief about future.
- Having herd behavior.

According to standard economic model, individuals saving behavior is related to their preferences, and some economical theorists suggest that preferences are the result of natural selection (Cronqvist & Siegel, 2010).



**Figure 1: Life cycle hypothesis graph**

*Source: Cronqvist & Siegel (2010)*

Saving behavior is caused by both genes and environmental aspects, it means that individuals saving behavior high possibility to inherited from parents and shaped by context (Knudsen et al., 2006). Thaler and Shefrin (1981) planner doer model is also related to saving behavior. The planner doer model explains that an individual can be both planner and doer. Specifically, for the saving decision, individual's planner side foresee that doer side prefer present moment consumption, and it makes less saving for the future. Therefore, planner side can force doer to limit the consumption and accumulate for saving for future. There are three distinct

types of theories, including normative, descriptive and prescriptive (Thaler & Benartzi, 2004). Normative theories refer to rational choices, which are optimal prediction about individuals saving behavior. For instance, the life cycle hypothesis which is introduced by Franco Modigliani in 1957 is considered as classic example of this theory. According to the hypothesis, individuals tend to create savings in mid-age, conversely, tend to accumulate debts during their young age and use their savings as consumption after retirement (Deaton, 2005). The actual behavior of saving tends to be different from this optimal plan. It is often failed to calculate correct savings rate by household or they might not have ability to control their consumption for their future saving (Thaler & Shefrin, 1981). According to the result of Save for Tomorrow” project (Thaler & Benartzi, 2004), many employees were rejected to participate retirement saving and even enrolled employees tend to choose the lowest rates, and it was relatively low than expected life cycle saving rates.

Compared to normative theories, descriptive theories are less likely to rational and aimed to figure out individuals’ actual choice. Thaler and Shefrin (1988) suggest that the life cycle hypothesis can be a descriptive model with the help of self-control and mental accounting. The last approach is prescriptive theories, which are more realistic theories, that are aimed to help people to make decision-making that are close to rational decision making.

The loss aversion is another behavioral consideration for creating a prescriptive savings plan. It explains that people tend to react losses painfully, specifically, people feel loss as much as twice than the gain pleasure. Moreover, there are some studies found that self-efficacy plays crucial role between procrastination and financial behavior (Gamst-Klaussen et al., 2019). According to the study results, procrastination influence on self-efficacy and together those two aspects effect on individuals’ financial behavior.

*Hypothesis 2: Individuals tend to procrastinate their long-term saving plan.*

### **2.3. Pension scheme**

There are two kinds of pension systems which are Defined Contribution (DC) and Defined Benefit (DB) (Börsch-Supan, 2005). A defined benefit (DB) pension scheme is usually regulated by the state and it depends on the duration of employment and average salary amount. The Defined benefit (DB) pensions are a redistributive system, which means that the current workforce pays for previous workforce pensions through their contribution (Lannoo, 2014). Specifically, in this scheme, the pension amount does not depend on that how much pensioners contributed to their own pensions during their young age, but how long they work and how much was their salary. Defined contribution (DC) pension scheme has higher profit than defined benefit (DB) pension scheme, however, it takes effort from individuals to enroll and continue for long time. Specifically, procrastination plays significant role to enrollment rate of defined contribution (DC) saving plan. In recent years, blockchain pension system is widely discussed within scholars and tech engineers (Alexey et al., 2018 ). Moreover, many firms offer cryptocurrency pension fund service, because traditional pension funds considered not secure or capable in the future. This kind of technological advances might ease enrollment and contribution process.

Since, mandatory defined benefit plans are not related to the topic, the researcher included more explanations and studies in relation with defined contribution plans. Many countries worldwide implemented or in the middle of the process to implement defined contribution (DC) system. However, there were several issues aroused during the implementation, in relation with individuals’ enrollment, contribution and asset allocation.

There are disappointing numbers of employees participate by their own willpower to retirement saving plan, therefore, employers and policymakers are required to implement beha-

vioral tools to encourage enrollments. For instance: According to the survey conducted by Edelman Financial Engines (2015) around 70 percent of adults aged over 55 accepted that they procrastinated their retirement savings.

There is one study highlighted that low participation of employees are caused by the participant's trust to financial institutions (Agnew et al., 2012). Particularly authors assumed that participants do not trust to financial institutions that offer retirement planning. However, according to Gizelle Willows (2021) persuasion of financial advisors makes people's probability of enrolling retirement plan about 40 times.

Another concern related to retirement saving plan is setting contribution rate by participants. After the decision to enroll saving plan for their retirement, participants are required to define their contribution amount if it was not automatic enrollment. There is no standard or suitable amount to be saved since researchers do not have any information about participants' income sources or wealth.

The third crucial decision that needed to be determined is how to allocate their decision. In fact, most people do not have enough knowledge and experience to manage portfolio (Thaler & Benartzi, 2007). Certain behavioral preferences are related to asset investment making, including loss aversion, mental accounting. Moreover, several behavioral biases addressed that can lead to wrong decisions of investment, such as overconfidence, hindsight bias, overreaction, belief perseverance, and regret avoidance (Nevins, 2004). Overconfidence refers to investors' wrong estimation of their real knowledge and capacity of investment decision making. Hindsight bias is considered as individual's belief that they can predict events before it happens. Regret avoidance is described as individual's avoidance from the regrets caused by their decisions. Basically, behavioral perspectives of investment are broad and complicated. However, Nevins (2014) suggested that investors should focus on their goal for making investment decision.

*Hypothesis 3: Contribution amount might be not enough to defined contribution (DC) pension scheme.*

### **3. Methodology and findings**

#### **3.1. Methodology**

In this research article the researcher use analysis on existing practices in USA and as well as OECD countries retirement plan enrollment data to see previous practices. In addition, the researcher used focus group interview is study, in order to see current situation. The focus group interview had taken in Mongolia, which is planning to implement defined contribution (DC) pension scheme. Focus group interview is a qualitative research method give researcher chance to actively interact every participant. Therefore, with the help of focus group interview, researcher can observe detailed information and clear understandings about problem (Morgan, 1996).

#### **3.2. Analysis**

In recent years, European countries, which have redistributive pension schemes hugely impacted by demographic change. The reason is the loss of ratio between young workforces and pensioners. The young workforce decreased because of the fertility rate decrease, while the number of pensioners increased drastically. It means if the young workforce is continuously decreasing, they will not be able to cover the huge amount of pension cost of the increased number of pensioners in the future. The statistic shows that current 10 working people pay for 3 pensioners. However, this ratio will be 2 to 1 in 2040, and it means 2 working people will pay the pension of 1 retired person (Cecchi, 2017). A defined contribution (DC) is a private pension scheme that can be organized by employers or professional pension firms. It is based on how

much money or savings accumulated in pensioners' accounts. Both of the systems have advantages and disadvantages. For instance: Defined benefit system is considered more secure (because it mostly organized by governments, but defined contribution is tended to organized by private companies) and defined contribution system is considered more resilient. If the pensioner wants to take all accumulated savings, it can be accepted. Conversely, defined benefit (DB) system does not allow individuals to take large amount of money at once, however, it is considered secure in inflation and economic crisis (Brown & Previtero, 2020). Many countries already started their initiatives to implement defined contribution (DC) plans. However, some countries prefer DB system alone, and some are using both systems. In order to give clear picture, the researcher included the table from the latest research that demonstrated the retirement saving plans by countries (OECD, 2020).

**Table 1: Retirement saving plans by countries OECD**

Countries	Mandatory / Quasi-mandatory	Auto-enrolment	Voluntary occupational	Voluntary personal	Voluntary (occupational and personal)
New Zealand		37.6			
Israel	31.6				
Latvia	23.0				
Estonia	22.6				
Colombia	19.9				
Mexico	13.0				
Poland - OFE				11.9	
Chile	11.7				
Latvia				11.5	
France			10.1		
Norway - private & municipal group	9.1				
Finland	8.9				
Italy				6.7	
Switzerland	6.2				
Slovak Republic - 2nd pillar				5.3	
Czech Republic				5.0	
Australia	4.1				
Slovenia					2.9
Italy			2.7		
Austria - Pensionskassen			2.6		
Denmark - ATP	2.6				
Denmark - QMO	2.5				
Luxembourg - pension funds			1.8		
Poland - PPE			1.3		
Spain					0.8
Mexico			0.3		
Latvia			0.2		
France				0.2	



<b>Canada - RPP</b>			0.1		
<b>Canada - RRSP and PRPP</b>				-1.3	
<b>Korea</b>	-1.7				
<b>United States</b>				-1.7	
<b>Finland</b>			-2.2		
<b>New Zealand</b>			-2.4		
<b>Finland</b>				-2.9	
<b>Estonia</b>				-3.4	
<b>Norway</b>				-3.6	
<b>Austria - PZV</b>				-6.9	
<b>Denmark</b>				-9.4	
<b>Hungary - pension funds</b>				-45.5	

Source: OECD (2020)

According to the information, there are still many countries have mandatory retirement plan, which refers defined benefit (DB) and some of countries are implementing occupational or personal contributed retirement plan (DC). Moreover, many of countries implement both DB and DC retirement plans. For instance: Nowadays, some European countries offer three types of pension schemes. These are defined benefits (DC), defined contribution (DB) and private saving (Cecchi, 2017).

According to the data many OECD countries still implement mandatory enrollment, besides, some countries support self-enrollment, however, disappointing number of people choose self-enrollment. Therefore, it is clear that mandatory enrollment or auto enrollment are effective than self-enrollment at current situation.

### ***3.3. Focus group discussion***

The researcher conducted focus group discussion with 6 participants, who are nearly getting pensioners. The focus group interview organized in Mongolia, the country planning to implement defined contribution (DC) saving plan.

To give clear understanding, the researcher highlighted brief information about Mongolia and its pension scheme. Mongolia has 3,5 million people and among them 459 000 people retired and 324206 are going to retire within 5-10 years (National Statistical Office of Mongolia, 2022).

In Mongolia, people who had been working for 21,5 years can retire by their own will by current regulation. Retirement age differs by gender, occupation, work environment, as well as family situation in Mongolia. For instance: Women in Mongolia are regulated to retire at 55 years old, however, women have 4 and more children can retire at age of 50 if they want. Man retires at age of 60, unless they work under hazardous work environment or work in military service. Mongolia has defined benefit (DB) pension scheme for last 30 years. In last 5 years, Mongolian government actively promoting to implement defined contribution (DC) saving plan. In addition, private financial entities offer retirement saving plans.

The researcher chose 6 participants 3 male and 3 female from various sector, who are getting retire within 5 years. Previously, all participants had been contributing social insurance payment for defined benefit retirement saving plan. Because this is regulated by social insurance, and automatically deducted from their salary. Table shows participants' demographic information.

**Table 2: Demographic information of focus group interview participants**

№	Participants	Gender	Age	Occupation	Employment year	How many years left to retirement
1	Participant 1	Male	55	Construction engineer	23	5
2	Participant 2	Male	56	Tax inspector	19,5	4
3	Participant 3	Female	51	Nurse	20	4
4	Participant 4	Male	54	Safety engineer (hazardous environment)	18	1
5	Participant 5	Female	45	Teacher (5 children)	18	5
6	Participant 6	Female	51	Human resource manager	25	4

Source: Anonymous (2022)

During focus group interview the moderator asked several questions in relations with participants financial situation, saving behavior, and procrastination.

*Question 1. Do you have savings for retirement?* According to the interview result, the researcher found out that none of participants have saving specifically dedicated for their retirement.

*Question 2. Do you have any savings?* Four out of six participants have saving for emergency and family use. Saving amount is equal to their 2-6 months' salary.

*Question 3. Do you have habit to save every month?* According to the result, two out of six participants have habit to save money for every month and three participants save money occasionally. According to the result, women are more tend to save money more than men.

*Question 4. Do you procrastinate financial decision? If so, can you describe what are the causes to procrastinate saving?* Participant 6 explains that this is because of Mongolian economic and financial market is not sustainable. Because of inflation, currency rate, government decisions, it is hard to implement long time financial saving. Another participant (participant 2) describes that most of Mongolian families have long term loans (mortgage, or other loans), and salary is not high enough to save money. Participant 4 explains that his salary is enough to provide monthly expenses and contribute saving. However, their family expense arises along with his salary increase, therefore, participant 4 is currently work on improving their family member's financial discipline.

*Question 5 Can you share your self-discipline about your saving behavior?* Three of six participants explain that automatic saving setting on their account help to save them to contribute saving every month. Participant 3 explain that she is in little community for saving, that collect money every month and give members one by one each month. Rest of participants describe that they do not have certain discipline or activity that help for saving.

#### **4. Findings and further recommendation**

##### ***Findings and discussion***

According to the analysis and focus group interview the researcher tested hypotheses.

*Hypothesis 1: Individuals prefer present reward rather than future profit.* According to the focus group interview result, it can be concluded that all participants prefer current consumption over retirement saving. From DC enrollment data of OECD countries,

many countries still conduct automatic enrollment in order to raise enrollment. Some OECD countries support self-enrollment; however, disappointing number of people choose self-enrollment. It can be assumed that individuals prefer current reward rather than long term investment. From the behavioral side, one of the main reasons for falling in this transferring process were participants self-control issue (Thaler & Benartzi, 2007). People who have lack of self-control tend to have financial problems like overconsumption, accumulated debt of credit card, or lack of financial resources and savings (Barboza, 2017).

*Hypothesis 2: Individuals tend to procrastinate their long-term saving plan.* Brown and Previtro (2020) made analyze on the data of 154,000 participants of defined contribution (DC) plans from 24 different firms, conducted from 2002 to 2008. Firstly, the researchers investigated procrastinators from the participants through making comparison from the data between the enrollment of different years. According to the result of analysis, they had found that procrastinators likely to enroll to program approximately 60 days after the non-procrastinators, and they tend to participate lesser amount. Moreover, procrastinators want to retire 13 months earlier based on the analysis of 27,000 employees benefit plans. There are also shocking results were observed from other studies in relation with participants' behavior. For instance: In United Kingdom, defined contribution (DC) plan is regulated to contribute by employers. However, even in the case of employer pay the whole saving plan payment, only thing required from employees were just to register. According to analysis in the data of the 25 relevant studies, only half of the employees took action to enroll retirement plan (Thaler & Benartzi, 2007).

Focus group interview participants in Mongolia tend to procrastinate their financial decision, and they explain that Mongolian economic and financial market in unstable and low salary are affect their decision. Participants also refer that mortgage loan and other loans limit their chances to save. In addition, most of participants do not have habit to contribute to their saving every month, and ones that save every month set that automatic saving plan on their bank account. There is one classic example that reveals the importance of creating self-control is middle-class household's retirement plan in USA. Traditionally, there are three other system of retirement accumulation in USA, including social security, home equity and defined-benefit pensions. The main advantages of the systems are formulating discipline and equity through the monthly mortgage payment after property purchase, and none of those systems are required participants willpower. Therefore, it is clear that automatic enrollment and automatic saving systems are crucial to implement long-term saving plan.

*Hypothesis 3: Contribution amount might be not enough to defined contribution (DC) pension scheme.* According to the study that based on 1,7 million participants data of 401(k) plans in USA, reveals that the most of the participants chose before tax contribution and they contributed around 7 percent of their salaries. Moreover, older participants tend to contribute higher than younger participants with same salary amount (Holden & VanDerhei, 2001). Moreover, Choi et al. (2002) addressed that most of the participants of 401(k)<sup>2</sup> retirement saving plan described their contribution rate as too low, while only 1 percent of participants feel that their contribution rate was too high.

Honestly, most participants do not spend time and consideration to calculate their deferral rate and contribution. For instance: According to Thaler and Benartzi (1999) more than half of the participants spent less than one hour making this important financial decision.

Looking at data of 401(k) from 1999 to 2002, the participants did not make significant change in their asset allocations. However, in 2002, older participants tended to decrease their account balance because they assumed that investment returns are important than savings. Moreover, around 60 years old participants tended to have higher probability to take their money

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<sup>2</sup> 401(k) plans are mostly organized and contributed by employers that aimed to build up retirement funds for their employees.

(Holden & VanDerhei, 2003). In addition, there were only 17 percent of participants had higher amount of loans in 2002, and the level of unpaid balance were 16 percent of the balance. From this analysis, we can assume that participants tended to be relatively stable for their retirement saving compared to other investment decisions.

### ***Behavioral tools used to increase retirement saving***

Generally, saving for retirement is challenging issue, because employees tend to have passive attitude towards retirement (Thaler & Benartzi, 2007). In fact, many people do not have proper understanding and knowledge about pension fund system, risk tolerance and asset allocation (Ackert & Deaves, 2010). There are several methodologies are implemented to increase pension fund involvement. For instance: Thaller and Benartzi (2004) suggest the methods they used for 'Save More Tomorrow', because those methods were significantly efficient to implement Defined contribution (DC) plan. According to the plan, organizers asked participants' commitment for their saving amount gradual increases in future in relation with their salary increases, and made automatic adjustments based on the commitments. Eventually, inertia leads participants to save more and at the result there are slight amount of people cancelled their saving, otherwise this plan implemented efficiently for many firms. Here the researcher addressed details about above mentioned and other methods that are widely used for implementing retirement saving plans.

### ***Automatic enrollment***

Most widely used nudge tool is might be defaults, which are previously adjusted settings. Advantages of this tool might be everything is set by organizers, and there is lack of efforts from decision makers. This tool support individuals' inactive tendency, therefore, this method considered efficient (Thaler & Sunstein, 2008). Particularly, automatic enrollment was widely used method that helped to overcome procrastination in many countries. For instance: USA successfully implemented this method to pension transferring process, however, the contribution amount was not high and barely reach the lowest package (Thaler & Benartzi, 2007). During this method, employees are automatically transferred to enroll retirement saving plan, and there was a choice of rejection if employee want to exit from plan.

This method was efficient to involve participants to defined contribution plans, but not satisfactory with building acceptable amount of contribution. From the optimistic view individuals once enrolled DC system automatically, tend to keep their retirement plan for a long time, and except for a slight number of cancellations (Choi et al., 2002). Because, once decision is made by automatic enrollments or other actions, participants tend to keep their decision and it called inertia. According to the Madrian and Shea (2001), inertia is described as individuals' persistent behavior of endurance in relation with inactivity and status quo bias.

### ***Pre-commitment***

One of the effective methods used by Thaler and Benartzi (Save More Tomorrow: Using Behavioral Economics to Increase Employee Saving, 2004) in "Save for Tomorrow plan" was pre-commitment. Making a commitment is an optimal method to shape future choices and it leads motivation and lessens procrastination. Traditionally, this method widely used to involve people to health projects.

According to the "Save for Tomorrow" plan, employees were offered to make commitment to increase their contribution amount regarding with their salary increases. This method also figured to prevent to loss perception for employees, because the gradual increase in future would not affect employees' behavior. As a result, participants were successfully increasing their contribution rate without any cancellation.

## ***Incentives***

Incentives are considered effective method to stimulate individual's decision-making and help to overcome procrastination. There are intrinsic and extrinsic incentives widely used by choice architects. Particularly, using economic incentives are one of the most crucial methods to leverage individuals' decision making for retirement. For instance: Most of the countries use two kinds of financial incentives, including tax incentives and non-tax incentives. The traditional pension scheme had taxation like other earnings, however, some or all incomes were exempted from tax after it was paid. This method called the "Taxed-Taxed-Exempt" regime, and after benchmarks of this method, the pension savings increased in many countries. Conversely, non-tax incentives are more related to defined benefit schemes and used as government installments for eligible people (OECD, 2020). However, financial incentives like this are mostly requires proper policy and regulation from policymakers.

## ***Financial education***

Improving financial education among employees is considered another method to increase enrollment of defined contribution retirement plan. According to the former study consulting with financial advisor raises probability of planning successful retirement plan about 40 times (Willows, 2021). However, there are disappointing results comes up with the experiments. For instance: several organizations in USA implemented this methodology and as a result, there is slight number of changes demonstrated in enrollment percentage (Choi et al., 2002). Later, van Rooij et al. (2011) had proved that financial knowledge and retirement planning are positively related to each other in the case of Netherlands. They highlighted that people who has good financial education tend to have proper retirement plan. In this case, we need to consider about socioeconomic differences between countries.

## **5. Conclusion**

In this paper the researcher explains about procrastination and retirement planning both from theoretical and practical perspectives. The researcher analyzes existing practices of defined contribution (DC) retirement plan implementation in USA, OECD countries and Mongolia. Participants of program have distinct cultural and socioeconomic status, in addition, the program conducted by different method on different timing and place. Therefore, the researcher is not aimed to make any comparison between practices. The paper is aimed to explore procrastination and its influence on retirement saving plan and propose efficient methods. The researcher proposed 3 hypotheses based on existing literature and all hypotheses are supported. In addition, it can be addressed several points from the paper.

- Individuals' procrastination behavior mainly caused by time inconsistency and lack of self-control. However, in retirement issue, it is more related to present biased preferences, which mean that people prefer present pleasures rather than future rewards.
- The researcher observed that once individual have procrastination behavior, it is likely to be kept for the rest of their life with the example of Brown and Previtro's study in 2020.
- Individuals tend to have a lack of willpower to participate retirement plans. Because it sounds too distant especially for young employees. Even older employees most likely not to have proper amount of retirement savings. However, some studies have shown that older employees tend to save higher amount of money than younger employees with similar salaries.
- Countries have their own preferences to choose their retirement saving plans, there are many countries still have defined benefit scheme alone, while some countries implement all types of plans together. Moreover, defined contribution (DC) can be organized by employers, pension funds.

- Defined contribution (DC) retirement saving plan needs individual willpower, however, there were disappointing results are demonstrated from individuals' participation. Therefore, many organizations used automatic enrollment to increase participation.
- Automatic enrollment was most efficient tool for implementing defined contribution (DB) saving plans to overcome procrastination of participants, because there were few people decided to leave the plan after automatically adjusted. Pre-commitment was another tool that helps to increase participation that used in Save for Tomorrow plan. Economic incentives and improving financial education are both crucial tools that can be used for decision making, but those two tools require time and proper policy.

According to economic theories, individuals' saving behavior is predicted too optimistic, however, in reality, individuals' saving decision is more related to behavioral aspects. From the behavioral side, every person tends to be inactive for making long-term decision, particularly retirement is appeared likely after many years (Thaler & Sunstein, 2008). Therefore, policymakers and employers should consider to direct participants' decision making with the help of effective behavioral tools rather than waiting for their willpower to start their retirement plans.

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