

2021 Social Value Benefits of Public Pension Plans in Alberta



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Executive Summary

As witnessed by the debate of economists and policymakers about better measures of community prosperity, and the shift in the financial markets towards environmental, social and governance drivers of value (ESG), it is increasingly incumbent upon organizations to understand their value beyond economics and finance and explore their role in generating social value.

Social value is a concept that generally accrues from the significance that people place on events and developments in their lives, particularly through the lens of people's 'satisfaction with life'. It is a non-economic value that is not captured on traditional balance sheets or financial transaction records of people, businesses or governments. The measurement of social value is motivated by understanding how a person's satisfaction with life is impacted by various factors. Such factors vary from person to person, therefore, measurement is required at the individual level. When examined, we gain an understanding of the relative importance that a person places on those factors that generate their satisfaction with life. From a public policy or business point of view, understanding the social value of an opportunity, in addition to the financial value, is important to fully evaluate the costs and benefits of a decision.

The motivation of this research is to understand the role that pension plans play in influencing the satisfaction with life for Albertans, and the associated social value that is generated. With a focus on both retirees and current employees, the differences among those with a defined benefit pension plan, a defined contribution pension plan, and those with no employer pension plan are examined. The reasons for any differences are investigated, in particular, the role of financial security, health, stress, and community engagement.

Participating Plans

In order to understand the social value of pension plans in Alberta, three defined benefit (DB) pension plans have participated in this study. They are:

- **Local Authorities Pension Plan (LAPP),**
- **Public Service Pension Plan (PSPP),** and
- **Special Forces Pension Plan (SFPP)**

Surveys were conducted of their members and the broader Alberta population to investigate the impact that both pension plan membership and the type of pension plan have on satisfaction with life. In addition, the survey collected information to understand the factors contributing to any differences. No identifiable plan member data was used in the analysis, and all survey results were anonymous.



Social Value of The Plans for Retirees

Retirees who are members of a DB pension plan in the study are 34% more likely to report higher satisfaction with life than retired Albertans with no pension. They are also 15% more likely to report higher satisfaction with life than retired Albertans with a defined contribution (DC) pension. This difference persists across different regions of the province, income groups, and ages of retirees.

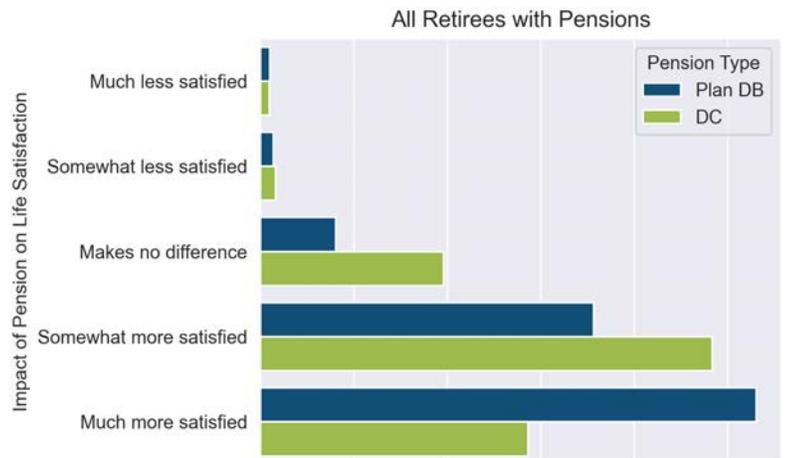
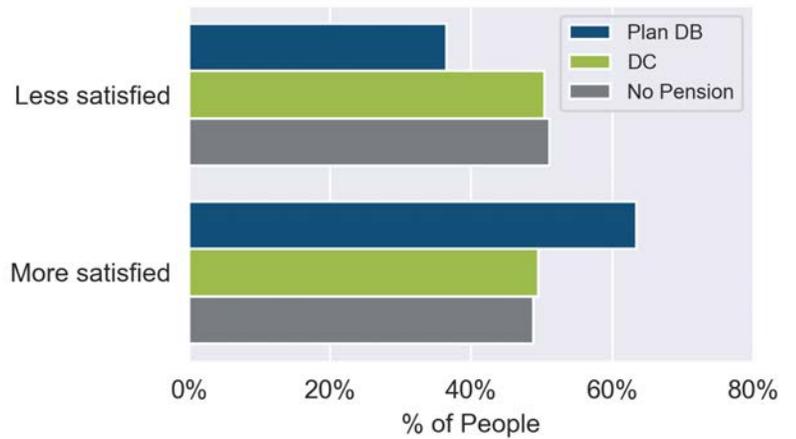
The type of pension plan that a retiree has appears to make a significantly different impact on their satisfaction with life. Members of the DB plans are twice as likely to report their pension contributes to making them much more satisfied with life, when compared to DC retirees.

A key factor driving this difference is the additional financial security that a DB pension provides. Retirees who are members of the DB plans have an 18% greater likelihood of being more satisfied with their financial security than DC retirees and a 51% greater likelihood of being more satisfied than those with no pension. In addition, they are 42% more likely to be able to meet their financial needs compared to retirees with a DC plan, have less financial stress, and a greater ability to handle unexpected expenses.

Retirees with a DB plan also have a 38% greater likelihood of being more satisfied with their health than those with no pension and a 27% greater likelihood than those with a DC plan. As a result of better health and increased financial security, DB plan retirees are twice as likely to be involved in their community as those with no pension and 21% more likely than those with a DC pension plan. All of these factors contribute to the greater satisfaction with life for the DB plans' retirees compared to others.

For retired members, the financial equivalent to the increased satisfaction of life evaluated using the Wellbeing Valuation approach is \$1.2 billion in 2021. This is equivalent to \$12,800 per retiree on average, or when added to a retiree's regular pension payments, a 56% increase in the value of their pension payments relative to no pension plan. Effectively, this is the value of the additional benefit that retirees receive due to the increased satisfaction with life as a result of their pension membership.

The social value for retired members that belonged to a DC plan instead of a DB plan is 40% less than for DB retirees. In other words, the financial equivalent of the increased satisfaction in life of a DB plan retiree relative to a DC plan retiree is \$5,200 per year or 23% of the average pension payment.



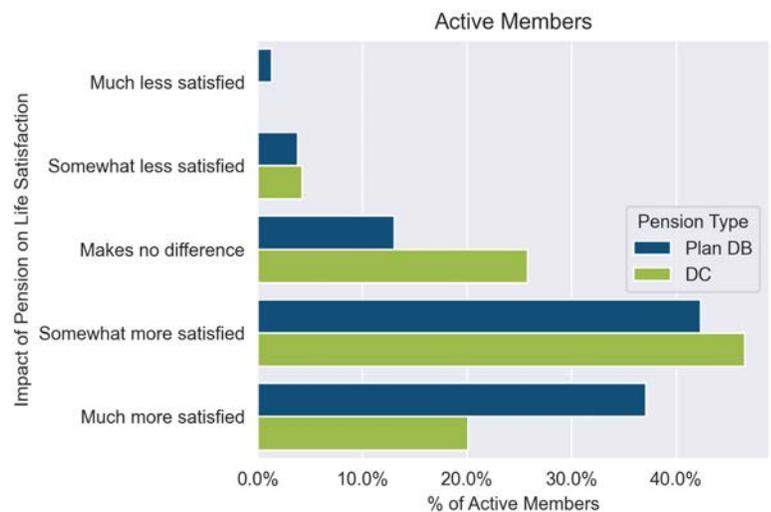
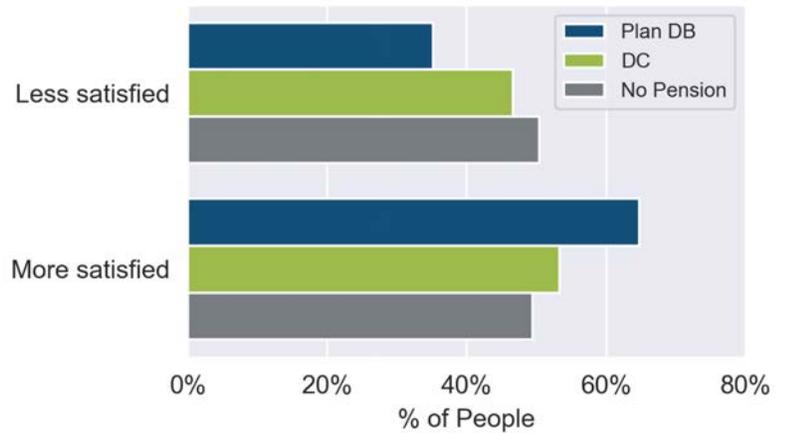
Social Value Factors for Current Employees and Employers

In addition to retirees, current employees who are members of a DB pension plan also report higher levels of satisfaction compared to their counterparts with a DC plan or no pension plan. While this difference cannot solely be attributed to pension plan type, other factors such as job security and family status also play a role, the differences persist after correcting for ages, genders, and incomes.

Active members of the Plans have over a 50% greater likelihood of being more satisfied with life compared to those with a DC pension or no pension at all. DB members are also almost 20% more likely to report that their pension contributes to their satisfaction with life than DC plan members.

While the role that pension plans play in a current employees' satisfaction with life increases as employees near retirement, DB plans play a larger role than DC plans for all ages.

The social value factors for employees translate into benefits to their employers. Along with increased satisfaction with life, DB members are 42% more likely to strongly agree that their pension plan contributes to them remaining with their current employer. In addition, pension plan membership results in a greater sense of belonging to the organization. Both factors benefit the employer through less employee turnover and the associated productivity losses due to hiring and training replacements and loss of institutional knowledge.



Conclusions

The social value benefits that arise from pension plans, and DB plans in particular, are significant. Among all retirees, those with a DB pension plan are the most satisfied with life, have better health and have less financial stress. The value associated with these outcomes is equivalent to \$1.2 billion annually, or \$12,800 per retiree – effectively a 56% increase above their annual pension payments when compared to peers without a pension. Combined with the regular pension payments of \$2.1 billion, the total benefit received by retirees from the plans amounts to \$3.3 billion in 2021. The additional value of the social value benefits of DB plans above DC plans is equivalent to \$5,200 per retiree. That is, DC plan retired members experience only 59% of the social value of DB plan retired members.

In addition, current employees who are members of DB plans reported higher satisfaction with life and that their plans contribute more to their satisfaction with life than those with a DC plan or no pension plan. This translates into benefits for their employers through greater employee retention and a greater sense of belonging.

Due to the significant social value impacts of pension plans, the inclusion of social value into any conversation of pension policy in the public or private sector is critical. Without it, the true value of the plans, or the consequence of not having one, is not fully captured. In particular, the differences revealed between DB and DC plans highlight how the long-term financial security of the DB plans results in greater benefits to members than other options.

Results at a Glance for Retirees

The table below highlights some of the key results for retirees from the analysis. The table compares the results for retirees who are members of the DB plans with retirees with either a DC or no pension plan. Each of the topics in the table is explored in greater depth in the report.

	Defined Benefit Retirees		Comment
Average Satisfaction with Life	24% higher than no pension 9% higher than DC pensions		A pension, and a DB pension in particular, significantly improves a retiree's satisfaction with life.
Social Value Per Retiree	\$12,800 compared to no pension \$5,200 compared to DC pension		The total value of the additional satisfaction with life experienced by the retired DB Plan members studied is \$1.2 billion.
Report pension contributing to satisfaction with life	89% of DB retirees	77% of DC retirees	Pension plans are a primary factor that influences the satisfaction with life for retirees, particularly for DB retirees.
Average Satisfaction with Financial Security	54% higher than no pension 17% higher than DC pension		The greater financial security from regular, reliable pension payments contribute significantly to overall satisfaction with life.
Average Satisfaction with Health	15% higher than no pension 9% higher than DC pension		Better health is a significant contributor to overall satisfaction with life.
Average Satisfaction with Community and Leisure	8% higher than no pension 7% higher than DC pension		Greater community engagement also contributes to overall satisfaction with life.
Make donations of \$100 or more	33% more likely than no pension 43% more likely than DC pension		Greater financial security allows DB retirees to contribute to their community.
Own their home	28% more likely than no pension 5% more likely than DC pension		Higher ownership rates contribute to a feeling of financial security and satisfaction with life.
Low levels of stress	11% more likely than no pension 5% more likely than DC pension		Financial concerns are a primary source of stress for those without a DB plan.
Good physical health	12% more likely than no pension 4% more likely than DC pension		Financial security allows for better care of health for retirees, better physical and mental health, and greater community and leisure activities.
Good mental health	5% more likely than no pension 13% more likely than DC pension		
Active with recreation and hobbies	28% more likely than no pension 10% more likely than DC pension		Better health and financial security allowing DB retirees to be more active with leisure activities.
Non-financial concerns as the primary source of stress	40% more likely than no pension 12% more likely than DC pension		DB plan membership reduces stress due to financial concerns compared to those with DC or no pension.
Report pension contributed to retirement plans	83% of DB plan retirees	69% of DC plan retirees	DB pension plans played a significant role in the retirement planning for members.

Results at a Glance for Current Employees

The table below highlights some of the key results for current employees from the analysis. The table compares the results for current employees who are members of the DB plans (active members) with people who are employed with either a DC plan or no pension plan. It is important to note that factors other than pension plans, such as job security or family status, also contribute to the differences.

	Defined Benefit Retirees		Comment
Average Satisfaction with Life	23% higher than no pension 13% higher than DC pension		Current employees with a DB plan are more satisfied with life than those with a DC or no pension plan.
Report pension contributing to satisfaction with life	80% of DB active members 67% of DC active members		Even before retirement, DB plan members report their plan contributes more to their satisfaction with life than DC or no pension plan.
Average Satisfaction with Financial Security	72% higher than no pension 25% higher than no pension		Financial security captures both the short-term impact of remaining with their current employer and the long-term retirement impact of DB plan membership.
Average Satisfaction with Health	14% higher than no pension 10% higher than DC pension		Current employees of DB plans are more satisfied with their health than others.
Average Satisfaction with Community and Leisure	10% higher than no pension 5% higher than DC pension		Greater satisfaction with community and leisure contributes to overall greater satisfaction with life.
Make donations of \$100 or more	74% more likely than no pension 20% more likely than DC pension		Added financial security for those with DB plan employers, which corresponds to greater participation in local charities and good causes
Own their home	126% more likely than no pension 22% more likely than DC pension		Financial stability contributes to higher homeownership rates among those with DB plan employers.
Low levels of stress	12% more likely than no pension 12% more likely than DC pension		Stress is lower among DB plan members, particularly for those nearing retirement.
Good physical health	22% more likely than no pension 2% more likely than DC pension		Pension plan membership is correlated with better health compared to no pension.
Good mental health	15% more likely than no pension 15% less likely than DC pension		
Active with recreation and hobbies	23% more likely than no pension 9% more likely than DC pension		Current employees with a DB plan are more active with recreation and hobbies as a result of improved health and financial security.
Non-financial concerns as the primary source of stress	51% more likely than no pension 54% more likely than DC pension		Employees with a DB pension plan are much less likely to have financial stress as a primary source of stress.
Report pension contributing to retirement plans	82% of active DB members	64% of active DC members	The defined benefits for future retirement allow DB pensions to play a larger role in retirement planning.

1.0 Introduction

1.1 Objectives

While the goal of public policy and organizations such as pension plans is to maximize the well-being of the population or their members (Diener & Chan, 2011; Stiglitz, et al., 2009), this impact has generally only been measured in purely economic terms. From this point of view, the key metrics include quantities such as jobs supported or economic activity (GDP) generated. However, with the growing importance of the environmental, social, and governance (ESG) impacts that policies or organizations have, there has been a recognition that understanding the subsequent social value is just as important as the economic value.

While the economics of pension plans have been extensively studied, the social value that pension plans generate is less well understood. Therefore, the objectives of this research are to quantify and understand the social value for retirees, current employees, and their employers. More specifically, the report examines:

- the social value that the three participating pension plans generate in Alberta for their members, and
- how social value differs across different types of pension plans

Though overall well-being and satisfaction with life are key metrics of social value, it is useful to investigate the broad range of wider social benefits, such as financial security (Howell & Tam, 2013; Ruberton, et al., 2016), physical health, stress and mental health (Lee, et al., 2016; Lombardo, 2018), employment (Fatih Aysan & Ummugulsum, 2017), and civic participation (Becchetti, 2016), which may come about from participation in pension plans. In addition, the relationship between these metrics and the type of pension plan is investigated.

In general, the social value of the plans can encompass the investments they make. However, as an initial foray into the social value realm in Alberta, the focus was upon retired members, as the core mandate of DB pension plans is to provide secure and stable retirement benefits. Nonetheless, initial insight into the social value that arises for active members, employees, and the broader community impact are also investigated.

1.2 Pensions Plans in Alberta

In Canada, pensions can broadly be classified into two primary categories (Statistics Canada, 2021):

- **Defined benefit (DB) pension plan:** A pension plan that defines the benefits by a formula stipulated in the plan text. The member and employer contributions are not predetermined but are a function of the cost of providing the promised pension, taking into consideration employee contributions, if any.
- **Defined contribution (DC) pension plan:** A pension plan that specifies the employee's (if the plan is contributory) and the employer's contributions. Members' benefits are provided from accumulated contributions plus the return on the investment of these monies.

While other forms of pension plans do exist, such as hybrid approaches or deferred profit arrangements, these are significantly less common. In 2021, DB pensions across Canada, both in the public and private sector, had 4.4 million active members in 9,000 pension plans. DC plans had 1.2 million active members in 6,200 plans. The total assets under management for DB and DC plans in Canada are \$1.7 trillion and \$99 billion, respectively. In Alberta alone, there are over 400,000 active members of DB pension plans and 130,000 active members of DC pension plans.

1.3 Participating Pension Plans

The aim of this study is to quantify the social value that three specific public sector DB plans make in Alberta. Throughout the report, these three plans will be referred to simply as the “DB Plans.”

1.3.1 Local Authorities Pension Plan

The Local Authorities Pension Plan (LAPP) is a jointly-sponsored DB pension plan. It was established in 1962 for the employees of local authorities in Alberta. The employers include organizations from the health care sector, cities, towns, villages, municipal districts, colleges, school boards and other affiliated public sector entities. The membership of the plan includes 274,000 active, retired and deferred members. Of those, 244,000 members lived in Alberta in 2021. The Plan comprises 75% of the total membership of the plans included in the analysis and 72% of the retirees.



1.3.2 Public Service Pension Plan

The Public Service Pension Plan (PSPP) is a DB pension plan that offers a secure, lifetime pension to its members. It was established in 1947 for employees of the Alberta government and other public service organizations and has expanded in the past 75 years. The membership of the plan includes 85,000 active, retired and deferred members. With over 73,000 members living in Alberta, it comprises 23% of the total membership of the plans included in the analysis and 26% of the retirees.



1.3.3 Special Forces Pension Plan

The Special Forces Pension Plan (SFPP) was established in 1979 as a DB pension plan for Alberta municipal police officers, including police chiefs and deputy police chiefs. The membership of the plan includes 7,000 active, retired and deferred members. With most members living in Alberta, it comprises 2% of the total membership of the plans included in the analysis and 2% of the retirees.



1.4 What is Social Value and Why Measure It?

The term social value is a nascent concept that continues to evolve. The general theme throughout existing academic literature on the topic is that the essence of social value accrues from the significance that people place on events and developments in their lives (Boyd, 2004; McGillivray, 2007; Easterlin, 2004; Van Hoorn, 2008). Unlike economic value, which has a well-defined utility across the economy, the social value depends upon individual values and preferences. For example, if a government policy were to change the amount of leisure time available for people to spend with their family and friends, individuals may value that change differently depending upon how important leisure time is to them. There is no standard economic measure of this value (unlike wages paid or business revenue), but many individuals would still associate increased importance with the additional free time. The relative importance across all individuals and all preferences reflect the aggregate social value of the policy. While there are many social value metrics, satisfaction with life is a common measure (Miron-Shatz, 2009; Di Tella, et al., 2015; Diener, et al., 1985) that captures people’s overall feelings about a range of well-being benefits such as financial security, health, leisure time, and stress.

To understand the impact policy decisions may have on social value outcomes, it is necessary to measure and quantify social values. Without a measure of how a person’s satisfaction with life might differ under various policy scenarios, it is

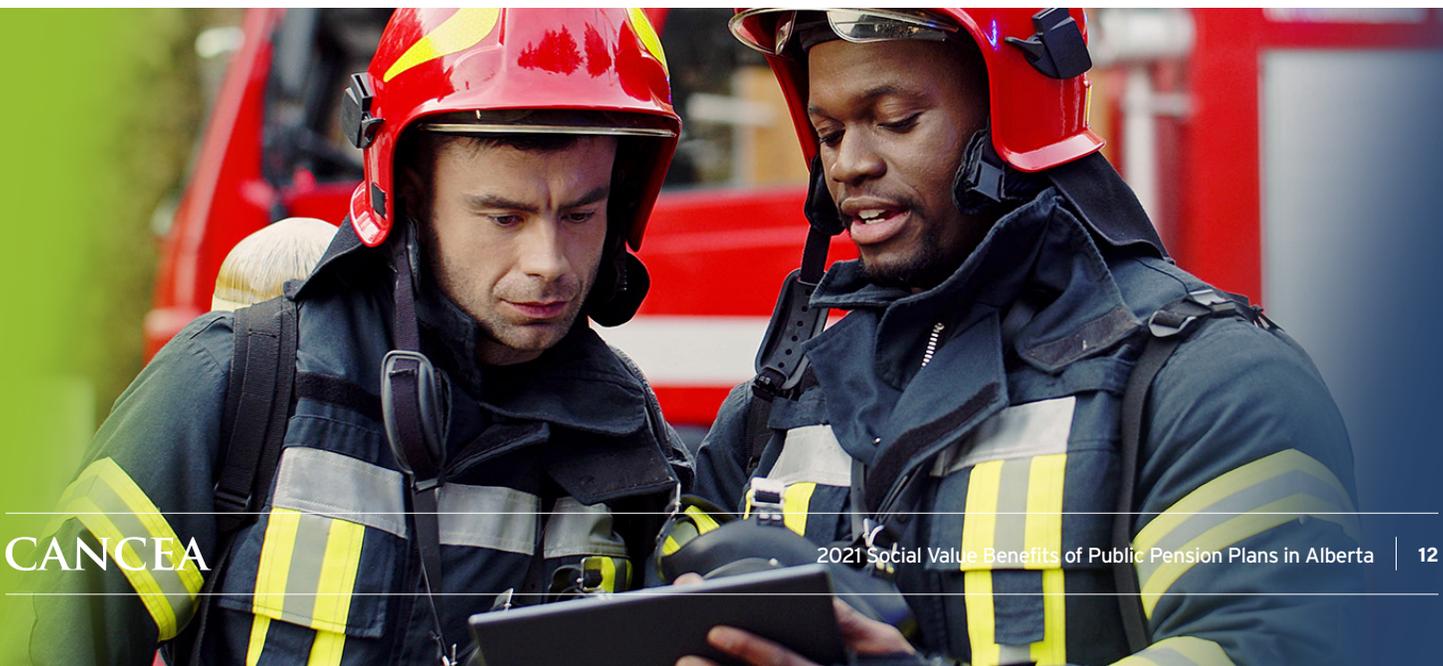
impossible to determine which policy is more favourable. Unlike economic metrics, which can be quantified in terms of dollars and measured by simply accessing financial records, there are no standard social value 'currencies' or accounts to access.

For many organizations, both government and corporate, it is becoming more important to understand and measure the positive and negative outcomes on individuals, society, and the environment. In financial markets, as concerns about environmental and societal changes and inequalities are increasing, many investors are eager to generate both business and social returns – to “do well by doing good” (Addy, et al., 2019). As a result, the reporting of environmental, social, and governance (ESG) impacts is now standard practice for the bulk of the world’s large and mid-cap companies and is common in many government mandates (Addy, et al., 2019; New Zealand Treasury, 2018). Unfortunately, it is usually confined to information about commitments and processes and rarely measures or quantifies the actual impact on individuals or society.

One country leading the field in quantitatively incorporating social value into its policy decisions is the United Kingdom. *The Green Book* (HM Treasury, 2020) provides guidance on how to appraise policies, programs, and projects with a focus on both economic and social value outcomes. Within the framework, social value and its measurement play a holistic role for authorities to optimize the social and public value produced by using public resources. The appraisal of social value used in *The Green Book* is based on the principles of welfare economics and concerns overall social welfare efficiency, not simply economic market efficiency. Social or public value includes all significant costs and benefits that affect the welfare and well-being of the population, not just market effects. Environmental, cultural, health, social care, justice, and security effects are all included. This welfare and well-being consideration applies to the entire population that is served by the government, not simply taxpayers.

A key challenge is once the social value outcomes are measured in their specific units, the wide variety of social value metrics that may be affected by different policies makes a direct comparison difficult. For example, it is not possible to directly compare changes in satisfaction with health due to a healthcare policy to the quality of leisure time due to labour regulations. Therefore, it is necessary to convert social value metrics into a common scale for comparison.

The well-being valuation approach (Fujiwara, et al., 2014), adopted by *The Green Book*, and described in more detail in Section 2.3, provides a robust methodology to convert social value metrics into financial terms to allow comparison between policy outcomes. The expression of social value outcomes in financial terms allows measures to be incorporated into traditional cost/benefit style investment evaluations. That is, when a cost is in financial terms, it is necessary to have the variety of social benefits converted to financial terms as well.



The use of satisfaction with life metrics along with the Well-being Valuation approach has successfully been used to incorporate social values outcomes in a wide variety of fields, including:

- Cost-benefit analyses of policies promoting participation in sport, culture, and volunteering which includes social values (Dolan, et al., 2014). For example, a cultural policy may not have a positive economic business case, but given the social value of such activities, the Well-being Valuation approach provided a means to incorporate the positive social value into the cost-benefit evaluation.
- United Kingdom water infrastructure evaluation where the relationship between flooding and roadworks incidents and life satisfaction is measured to determine the monetary compensation required to fully offset (both economic value and social value) any negative impacts such as increased stress in flood-prone regions (Fujiwara, et al., 2021).
- Valuation of the impact of works disruptions and supply interruptions using the Well-being Valuation method applied to the negative social value aspects of disruptions and the positive social value impacts of the infrastructure that had caused the disruptions in the first place (Dunn, et al., 2019). This helps policymakers to fully understand the cost-benefit analysis of an infrastructure project, including any short-term social value disruptions with the long-term social and economic benefits.
- The negative social value is due to healthcare access barriers (Lipponen & Linnosmaa, 2019). Barriers to healthcare access can cause a welfare loss to patients in need of care. A well-being valuation method is used to determine the monetary value of the loss, which was found to depend upon the severity of the illness and its effect on the patients' well-being and ability to work. This provides the basis for investment to eliminate barriers to access.
- The social value to communities of housing and local environmental improvements using the Well-being Valuation method (Vine, et al., 2017; Lawton, et al., 2017) to capture the full range of positive social outcomes (such as improved health, less stress, and resulting in greater satisfaction with life) beyond the traditional economic case. While some housing and environmental improvements may have a small or negative economic business case, without capturing the social value of the improvements, the full benefits are not accounted for.

An area that has only recently been investigated is the social value outcomes associated with membership in pension plans using the Well-being Valuation approach (Smetanin & Stiff, 2021).

While social value approaches have been applied to many kinds of investment activities, the value of pension plans historically focused on financial returns for members from their savings and employer contributions over the course of their working lives. This impact of pension plans is limited to strictly financial metrics and does not account for other benefits that may arise for participants in these pension plans. Consistent with shifts in financial markets and the evaluation of government policies, organizations are setting out to understand the social value they generate, which this report sets out to investigate for the DB Plans.



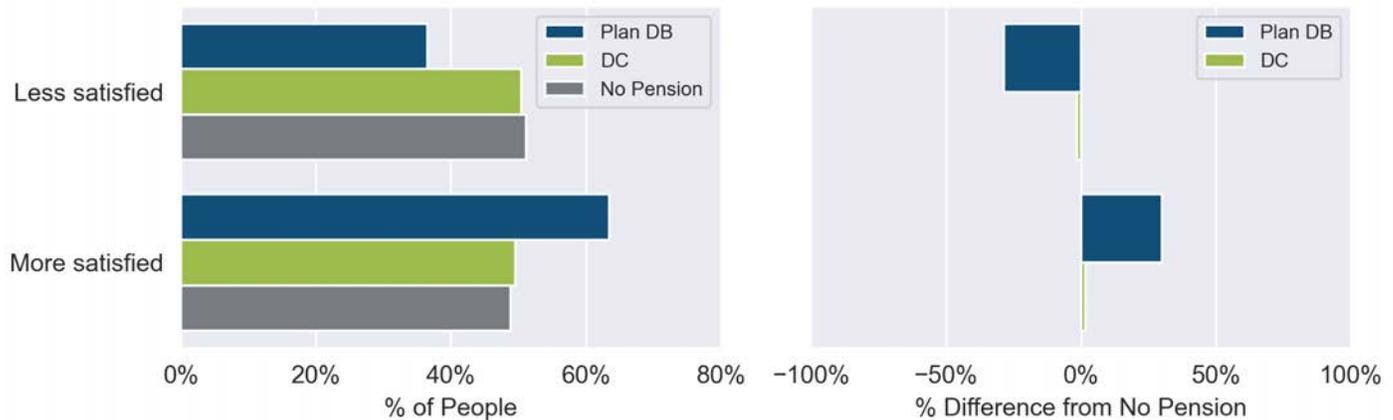
2.0 Social Value for Retirees

As the primary goal of pension plans is to provide retirement income for their retired members, we first look at the social value generated for retirees by the DB Plans relative to those with no private pension plan and those with a DC pension plan.

2.1 Satisfaction with Life

A key measure of social value is the impact that a policy or organization has on satisfaction with life. Through the survey, participants ranked their overall satisfaction with life on a scale of 0 to 10. While the scale is arbitrary, as long as all participants are responding to the same survey and ranking question, the results give considerable insight into the differences in satisfaction with life for retirees depending upon their pension plan type, including those with no private pension. A key finding, Figure 1, was that retirees who are members of the DB Plans reported significantly higher satisfaction with life than both those with no pension and those with a DC pension.

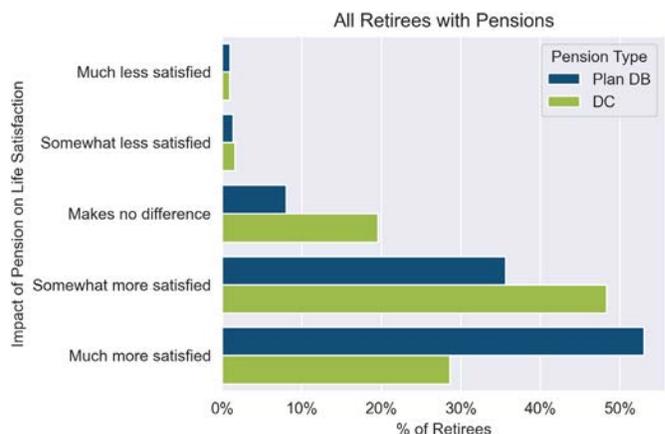
Figure 1 Satisfaction with life for retirees



In particular, retirees who are part of the Plans are 34% more likely to report higher satisfaction with life than retired Albertans with no pension. They are also 15% more likely to report higher satisfaction with life than retired Albertans with a DC pension. To confirm that any differences in satisfaction with life were at least partly attributable to the type of pension plan, the survey directly asked retirees how they felt their pension plan contributes to their overall satisfaction with life.

As shown in Figure 2, retirees who are members of the DB Plans are twice as likely to report their pension contributes to making them much more satisfied with life, when compared to DC retirees. These results are consistent with previous research (Smetanin & Stiff, 2021).

Figure 2 Impact of pension plan membership on satisfaction with life



In addition to the overall satisfaction with life, Table 1 summarizes many of the key differences reported for retirees who are members of the Plans, have a DC pension, or have no pension. Across many metrics ranging from health to community engagement, to sources of stress, retired members of the DB Plans consistently show more positive responses than the others. These all contribute to overall satisfaction with life, a topic which will be investigated further in the following section.

Table 1 Summary of key differences between retirees who are DB Plan members and those with DC pension plans, and no pension plan

	DB Plans Pension	DC Pension	No Pension
Average Satisfaction with Life	78%	71%	63%
Average Satisfaction with Health	74%	69%	65%
Average Satisfaction with Community and Leisure	77%	72%	71%
% that make donations of \$100 or more	83%	58%	62%
% with who own their home	91%	87%	71%
% with low levels of stress	91%	87%	82%
% with good physical health	78%	74%	69%
% with good mental health	87%	77%	83%
% active with recreation and hobbies	91%	83%	72%
% with non-financial concerns as the primary source of stress	79%	70%	56%
% which report pension contributed significantly to retirement plans	83%	69%	n/a
% which report pension contributing to satisfaction with life	89%	77%	n/a

2.2 Contributions To Social Value

There are many interconnected factors which contribute to overall satisfaction with life. Research has identified several key pillars such as financial security (Howell & Tam, 2013; Ruberton, et al., 2016), physical health, stress and mental health (Lee, et al., 2016; Lombardo, 2018), employment (if working-aged) (Fatih Aysan & Ummugulsum, 2017), and civic participation (Becchetti, 2016). This section investigates the impact that membership in the DB Plans' pension has on retirees and contrasts it with retirees with a DC pension plan or no pension plan.

While each of the contributing factors, shown in Figure 3, are examined individually below, it is important to keep in mind that they are all interconnected. For example, a retiree with better health can be more engaged with their community, and greater financial security can reduce stress and, as a consequence, improve health.

2.2.1 Financial Security

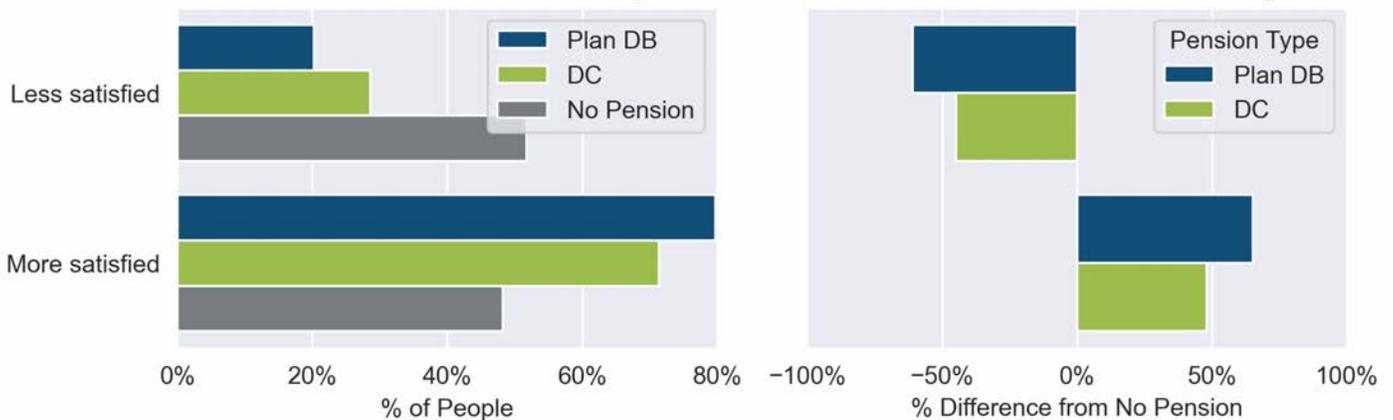
As the mandate of any pension plan is to provide income in retirement, it is important to understand how membership in different types of plans affects retirees' reported level of financial security and how it contributes to their overall satisfaction with life.

As shown in Figure 4, retired members of the DB Plans are over 50% more likely to report being more satisfied with their financial security compared to those with no pension plan.

Figure 3 Factors contributing to satisfaction with life



Figure 4 Impact of pension plans on financial security



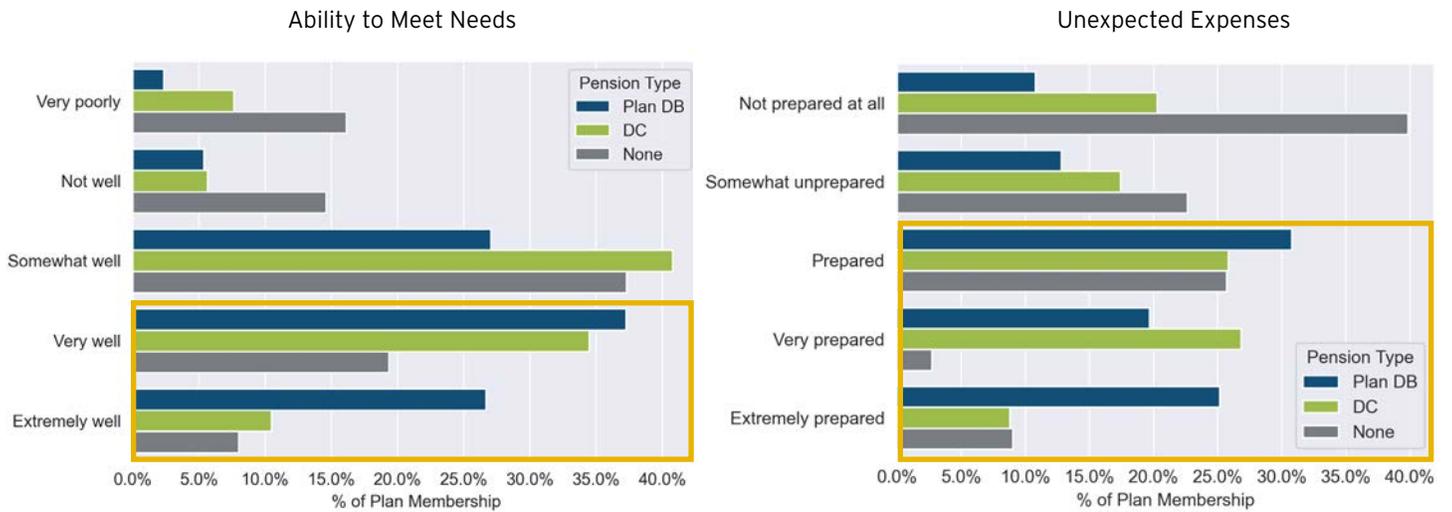
In addition, retirees with DC plans are only 25% more likely to be more satisfied with their financial security than those with no pension plan. This stark difference highlights the positive impact of the defined pension payments that DB plans provide compared to DC plans. As shown in Figure 5, the increased level of financial security persists across all household income groups, so it is not simply an artifact of different incomes associated with each type of plan.

Figure 5 Average financial security depending upon household income and pension plan type



Coupled with the increased level of financial security, 64% of DB Plan retirees report meeting their financial needs very or extremely well. This rate is 42% higher than DC retirees and over twice the rate of those with no pension. In addition, they are 23% more likely to be prepared for unexpected expenses than those with DC pensions and 203% more likely than those with no pensions.

Figure 6 Ability of retirees to meet their financial needs (left) and to handle unexpected expenses (right)

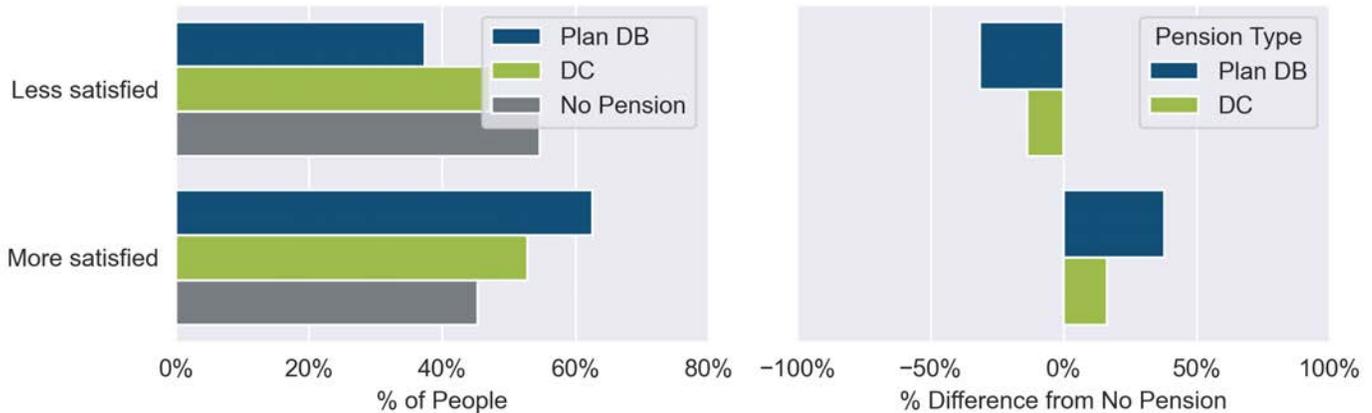


Finally, DB Plan retirees are 20% more likely to own their home without a mortgage relative to DC retirees and 47% more likely relative to those with no pensions.

2.2.2 Health

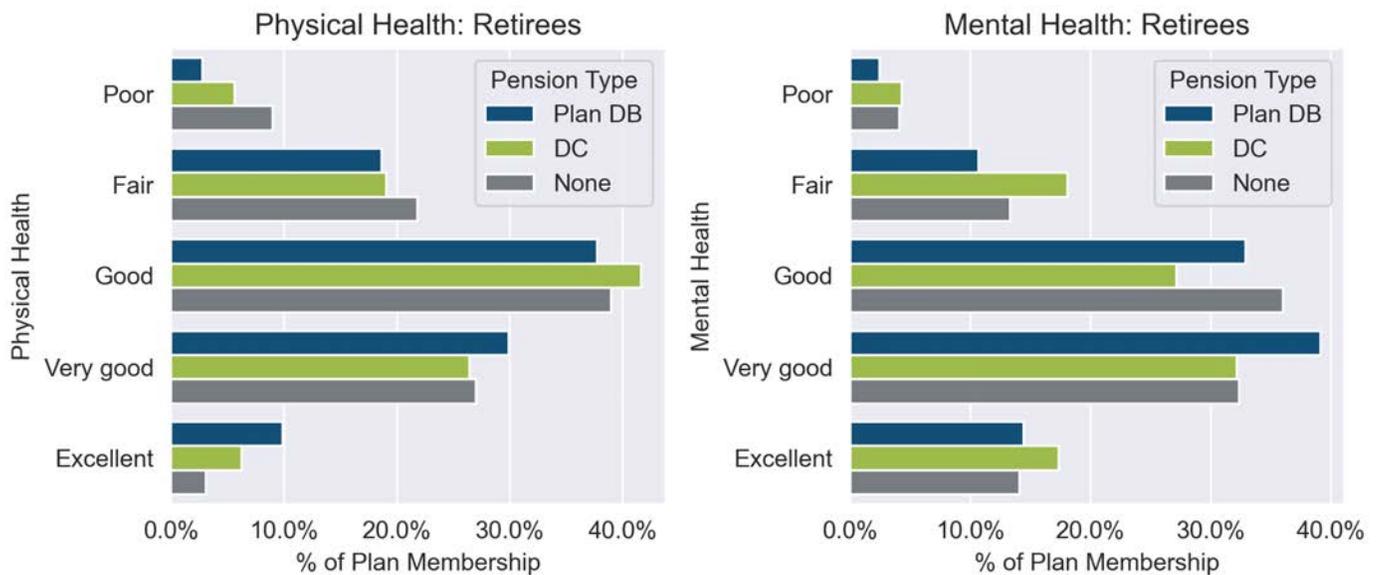
Health is also a key contributor to overall satisfaction with life (Lee, et al., 2016; Lombardo, 2018).

Figure 7 Impact of pension plans on satisfaction with health



As shown in Figure 7, retired DB Plan members are 38% more likely to be satisfied with their overall health compared to those with no pensions. In addition, they are 27% more likely to be more satisfied with their health than retirees with a DC pension plan. Overall satisfaction with health is a combination of both physical and mental health. On average, DB Plan retirees report that both their physical and mental health is higher than those who have DC pension coverage or no pension.

Figure 8 Reported quality of physical (left) and mental (right) health

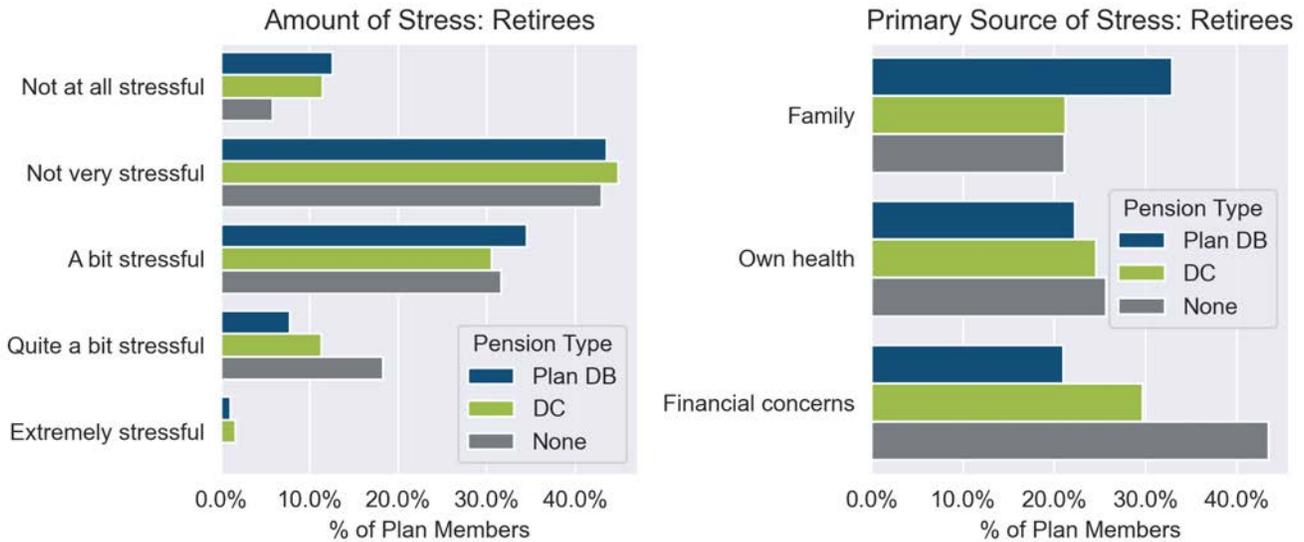


In particular, 40% of DB Plan retirees rate their physical health as “very good” or higher compared to only 30% with no pension and 33% with DC pensions. For mental health, 54% of DB Plan retirees rate their mental health as very good or higher compared to 46% with no pension and 49% with DC pensions.

2.2.3 Stress

Retirees in Alberta report similar levels of overall stress regardless of the type of their pension plan and only slightly less stress than those who have no pension. As shown in Figure 9, both DB Plan retirees and DC retirees have relatively little stress overall, with over 55% of both groups reporting “not very” or “not at all” stressful. However, among the remaining members that do report higher levels of stress, DC plan members are 46% more likely to report “quite a bit” or “extremely” stressful compared to DB Plan members.

Figure 9 Amount and sources of stress for retirees

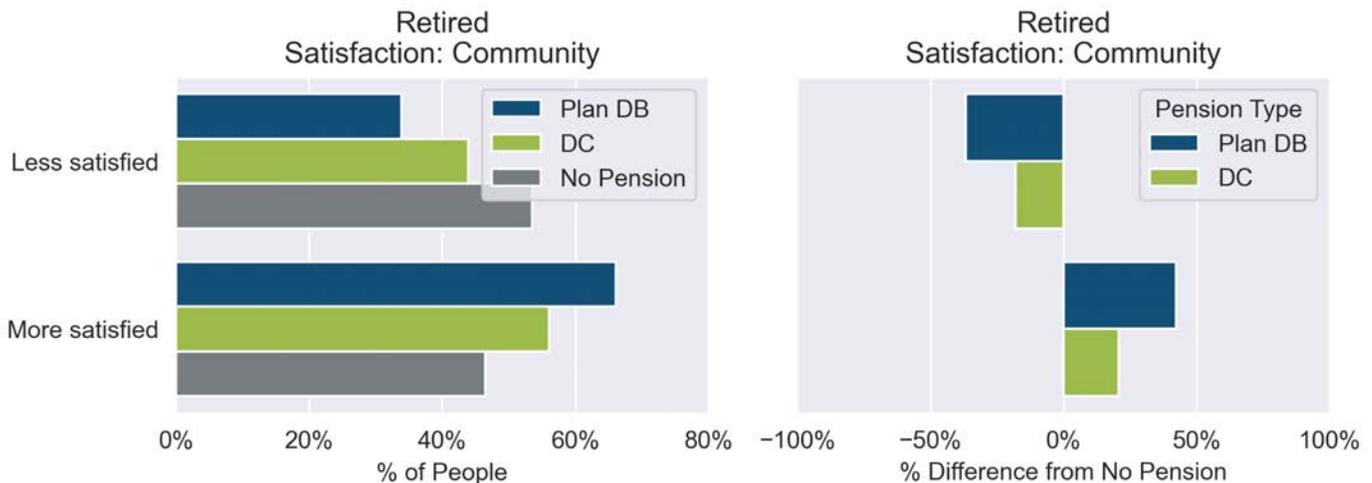


Examining the factors that are driving their stress, DC retirees and those with no pension are 41% and 207% more likely to report financial concerns as their primary source of stress. In addition, DB Plan retirees are least likely to rate their health as a source of stress.

2.2.4 Community and Leisure

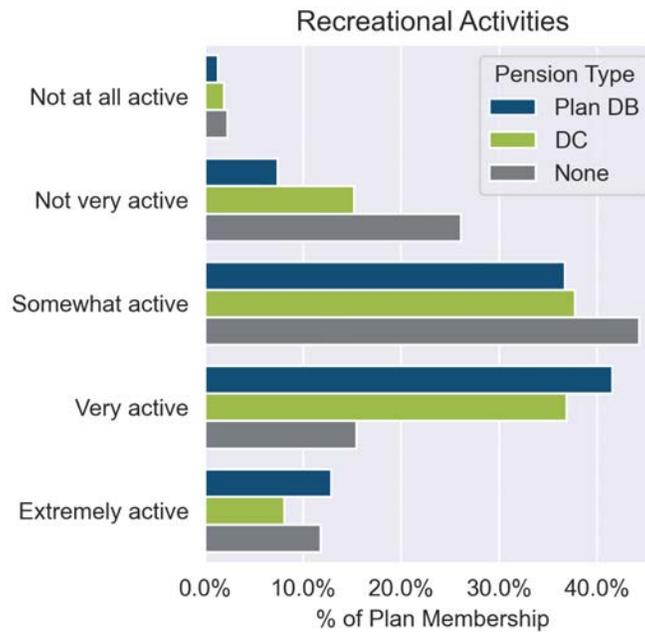
Finally, it has been shown that community engagement also contributes to life satisfaction (Becchetti, 2016). Retired members of the DB Plans are found to be more satisfied with their level of community involvement than those with DC or no pension.

Figure 10 Satisfaction with the amount of community involvement



As shown in Figure 11, they are twice as likely to be very active or extremely active with recreational activities compared to those with no pensions and 21% more likely than those with DC pensions. In addition, they are 23% more likely to volunteer than those with no pension.

Figure 11 Involvement with recreational activities



The combination of increased financial security, greater satisfaction with physical and mental health, less financial stress, and greater community engagement that retired members of the DB Plans exhibit all contribute to their satisfaction with life being greater than their counterparts with DC or no pension plans.

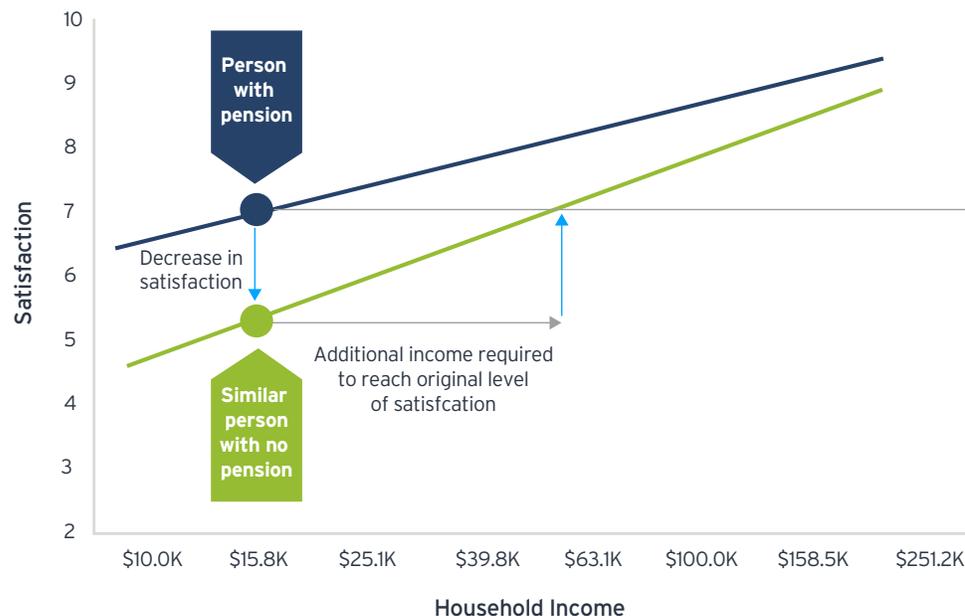
2.3 Well-Being Valuation Approach

Social value outcomes can be measured using a wide variety of subjective metrics. While this flexibility is important to understand how policies affect individuals, it makes it difficult to compare and contrast the social outcomes of different policies. The Well-being Valuation approach (Fujiwara, et al., 2013; Fujiwara, et al., 2014), which has been used extensively across a variety of fields, establishes a consistent approach to convert changes in social value outcomes to financial terms. The basis of the method relies on the fact that social value metrics can depend on a variety of factors, one of which is the income of the individual. In particular, two people with the same income may have different satisfaction with life for a variety of personal or financial reasons, which includes membership in a pension plan. The Well-being Valuation approach uses the relationships between incomes and satisfaction with life to convert the subjective satisfaction with life scale to financial terms.

2.3.1 Methodology

To help understand the method of converting subjective ratings of satisfaction with life to financial terms, Figure 12 illustrates the approach schematically. The lines show the relationship between satisfaction with life and household income for a person with and without a pension plan. If two similar people with the same household income are identified, but one has a pension (blue dot), and one does not (green dot), there may be a difference in satisfaction with life between them. In this example, the difference is about 2. For the person with the pension to maintain the same satisfaction with life, but without the pension and keeping all other variables constant (gender, geography, etc.), their income would have to be about \$48K higher. This is the social valuation of the pension plan for that specific individual.

Figure 12
Satisfaction-Income
Relationship



Since social value outcomes are subjective and depend upon the circumstances of the individual, the analysis should be performed at an individual level. For example, a young person in a high-income job with no dependent family members, living in a lower-cost region of the province, may feel quite different about pension plan membership than a recent retiree with dependents living in a higher-cost region.

To accurately capture the variety of potential social value outcomes, data on the unique circumstances of individuals is required. In this regard, CANCEA's agent-based platform that models individuals over time is well-equipped to quantify the social values that can be attributed to an activity. With the individual-level modelling, aggregate results are summed from the experiences of individual people. In addition, instead of a single satisfaction-income curve (as shown in Figure 12 to illustrate the concept of the approach), every individual has their own relationship depending upon their unique circumstances.

The steps to calculate the social valuation in the analysis are:

1. For every individual retiree in the Plan (in Alberta), calculate the difference in satisfaction of life for DB members and a matched no-plan retiree (same age, gender, region, income, etc.)
 - Agent-based analysis can model individuals in both the DB Plans' membership, the DC plan membership and no-plan retirees.
2. For each retiree, calculate the decrease in life satisfaction that would occur without a pension plan, then determine the additional income required to increase their satisfaction with life back up to the initial level
 - Since the relationship depends on the age, gender, and region of the retiree, there are thousands of different relationships in the form of Figure 12 for different individuals
3. The total social valuation is the sum values over all the DB Plan retirees

Once the financial equivalent of the social outcomes is calculated, there is the question of how to interpret the value. In the Well-being Valuation approach, the financial value represents the additional benefit (or cost) that arises due to the policy under consideration in terms that is compatible with traditional cost-benefit analysis. For example, consider two hypothetical policy interventions:

- **Policy 1:** Costs \$10M to implement, has \$9M in economic returns, and \$5M in social valuation returns
- **Policy 2:** Costs \$5M to implement, has \$6M in economic returns, and \$0.5M in social valuation returns

With a traditional cost-benefit analysis, Policy 2 might be preferable since the benefit-to-cost ratio is 1.2 compared to 0.9 for Policy 1. However, with the addition of the social valuation, Policy 1 becomes more favourable with a benefit-to-cost ratio of 1.4 (compared to 1.3 for Policy 2).

In the context of pensions, the primary economic benefit is the pension payment to retirees. The financial value of the social outcomes, as measured by the difference in satisfaction with life of retirees, could be added to their pension payment dollar value to obtain the total benefit which retirees receive.

2.3.2 Value of Social Benefits

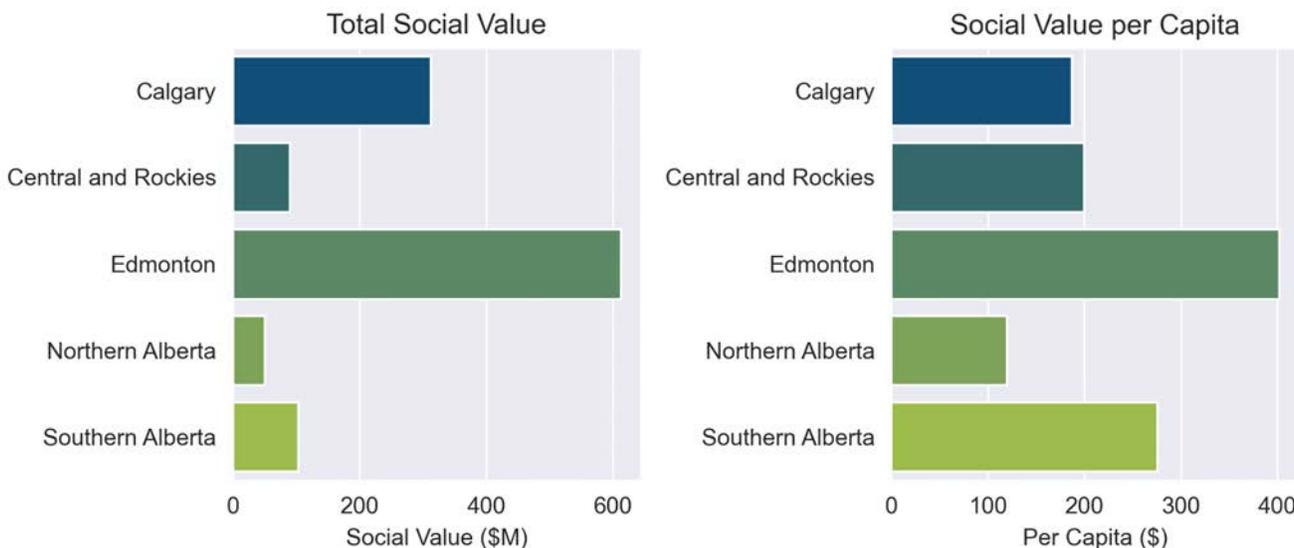
While pension plan participation has been found to yield a range of social value benefits, the ability to express the social value benefits in monetary terms is limited. Given the primary focus was on the direct differences in satisfaction with life, the necessary data for valuing these results for retirees was available. Turning these results into dollar equivalents is useful when attempting to understand the meaning, significance, and cost-effectiveness of changes in well-being measures such as satisfaction with life.

When retirees report higher satisfaction with life and attribute it to certain aspects of their pension, they are essentially reporting the usefulness and enjoyment they are getting from their pension. In economics, this is the concept of utility, which can be used to estimate worth.

The total value of the additional satisfaction experienced by retired DB Plan members in Alberta was \$1.2 billion. This is equivalent to \$12,800 per retiree. Combined with the regular pension payments of \$2.1 billion, the total benefit received by retirees from the Plans amounts to \$3.3 billion in 2021. This value of the social benefits represents a 56% increase above the baseline pension payments that retirees receive.

If the DB Plan members had the same satisfaction with life as similar members of a DC plan, the total social value would be 40% less. In other words, the additional social value that is provided by DB Plans beyond that of DC plans is equivalent to \$5,200 per retiree.

Figure 13 Social value by region across Alberta in 2021 relative to no pension plan



With \$600 million of social value accrued in the Edmonton area, it is the region which has the largest contribution to the provincial total. However, as shown in Figure 13, when adjusted for population by calculating the social value per capita, these benefits are significant across the province. With fewer retirees remaining in Northern Alberta (relative to the total population), the social value is lower than the provincial average.

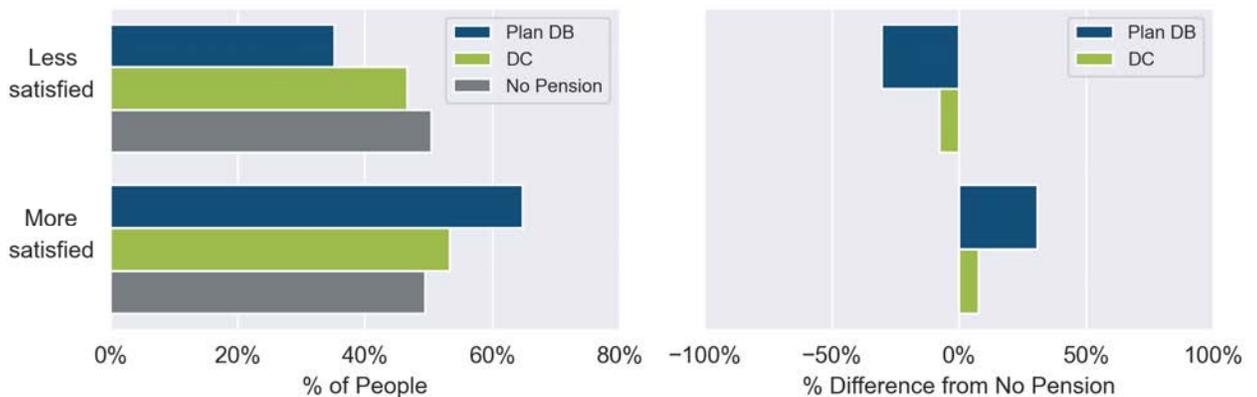
3.0 Additional Social Value Factors of DB Plans

In addition to retirees, many other people and organizations benefit from the DB plans. This includes active members who are currently contributing to the plan, as well as employers and the communities in which members live. However, additional confounding factors beyond the pension plan focus of this research may play a big role in the satisfaction with life for these groups. Nonetheless, it is important to first understand the characteristics of each group identified in the current research, and future work may delve into these additional factors.

3.1 Active Members

The survey results indicated that active members of the DB Plans are over 50% more likely to be more satisfied with life compared to those with a DC pension or no pension at all. It is important to note that for people who are currently working, there are additional factors beyond pension plan membership which may affect an employee's satisfaction with life. In particular, job security, the type of work being performed, and family status may all affect satisfaction with life.

Figure 14
Satisfaction with life for active members



In addition to the greater satisfaction with life, the study revealed consistent trends across the metrics, with active DB Plan members displaying many of the similar benefits that are seen among retirees. Table 2 highlights some of the key differences between active DB Plan members, DC members, and those with no pensions. In particular, they are more financially secure, have better health, and are more engaged in community and leisure activities. One indicator that DB pension plan membership does play a role in realizing these benefits is that 82% of DB plan members report that their pension plan contributes to their retirement plans (higher than DC plan members). Across all ages, 80% report that their pension contributes to their satisfaction with life. However, as shown in Figure 15, this increases significantly with age. As retirement approaches, members are recognizing the role that pension plans play in retirement.

Figure 15
% of active members who report their pension increases their satisfaction with life by age group

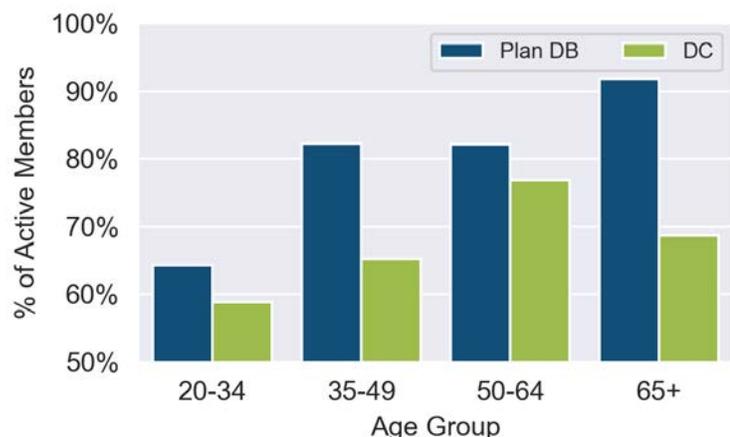


Table 2 Summary of key differences between current workers who are DB Plan members and those with DC pension plans and no pension plan.

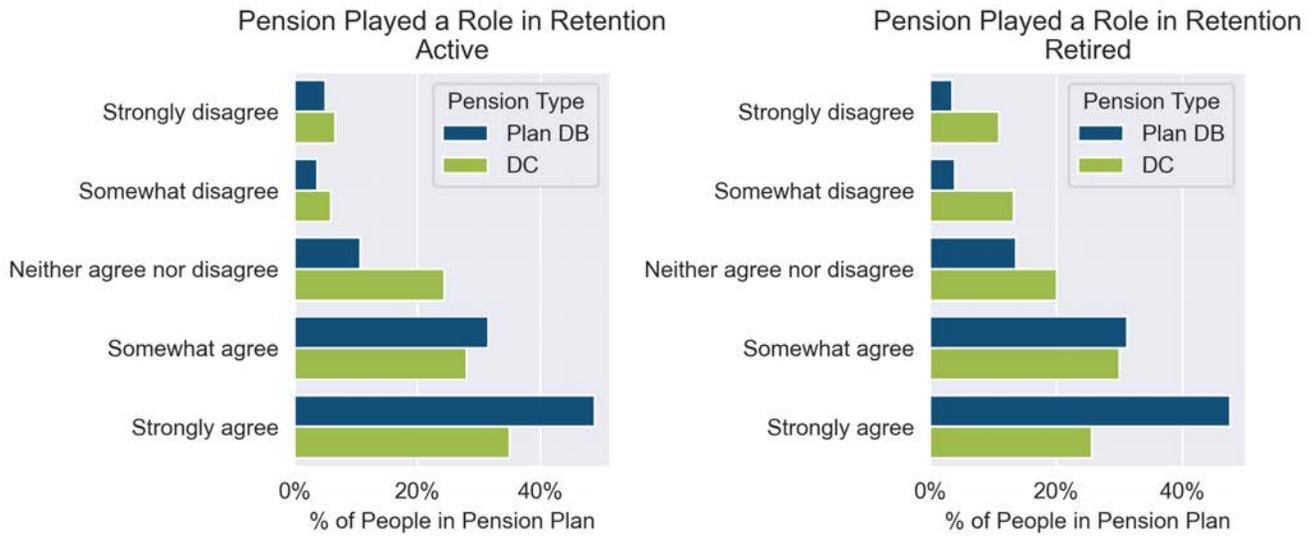
	DB Plans Pension	DC Pension	No Pension
Average Satisfaction with Life	74%	65%	60%
Average Satisfaction with Health	74%	67%	65%
Average Satisfaction with Community and Leisure	64%	61%	58%
% that make donations of \$100 or more	77%	64%	44%
% with who own their home	91%	75%	40%
% with low levels of stress	67%	60%	60%
% with good physical health	80%	79%	66%
% with good mental health	65%	77%	57%
% active with recreation and hobbies	90%	82%	73%
% with non-financial concerns as the primary source of stress	87%	57%	58%
% which report pension contributing significantly to retirement plans	82%	64%	n/a
% which report pension contributing to satisfaction with life	80%	67%	n/a

3.2 Employers

While the focus of the study is on the social value that DB Plans bring to retirees, the survey does reveal some benefits that employers receive due to employees participating in the DB pension plans. In particular, employee sense of belonging with the employer and variations in the employee turnover rates.

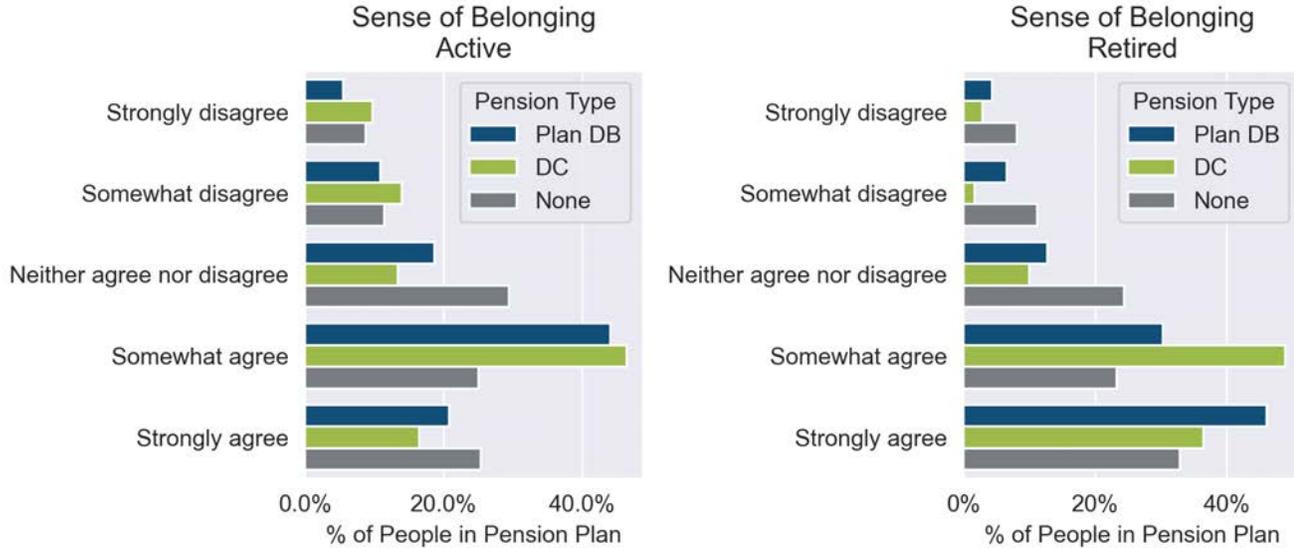
Employee turnover has considerable costs to employers through lost productivity, hiring and training expenses, and impacting employee morale. As shown in Figure 16, over 80% of DB Plan members agree (somewhat or strong) that their pension plan contributes to staying with their employer.

Figure 16 Role that a pension plan played in retention



In addition, about 65% of active members with a pension plan agree (somewhat or strongly) that they feel a sense of belonging at their place of work. This is significantly higher than those with no pension where only 40% of those with no pension feel the same sense of belonging.

Figure 17 Sense of belonging to an organization depending upon type of pension plan

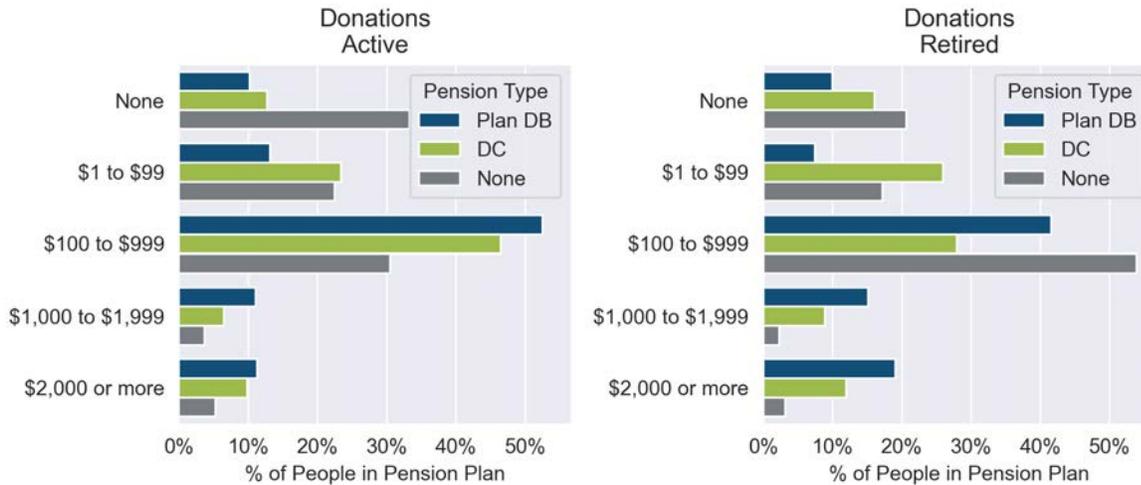


This ability to retain employees is important for business to increase productivity and maintain “institutional knowledge,” and results in a complementary set of benefits between the employee and the employer with the employee gaining financial security and a sense of belonging, and the employer experiencing less turnover in their labour force.

3.3 Community

Finally, the broader community also realizes benefits from both active and retired DB Plan members. In particular, both active and retired DB Plan members are more likely to make donations to their community (cash or in-kind) and tend to donate more.

Figure 18 Community donations



About 88% of active DB Plan members and 83% of retired DB Plan members donated to organizations. This is significantly higher than the 62% and 76% of those with no pension. Both the greater levels of financial security provided by the DB Plans and the greater involvement in the community contribute to the increased likelihood of making donations.

4.0 Conclusions

In Alberta, we found people with employer-sponsored pension plans are consistently more satisfied with life than those who do not have one. While this result is consistent with the idea that saving for retirement is a good thing, the strength of the relationship is high, as retirees with a DB pension plan have a 34% greater likelihood of being more satisfied with life compared to those who do not have a pension and 15% greater likelihood than those who have a DC pension. These benefits showed persistence across all income groups, ages, genders, and geographic regions.

Of the contributing factors behind the elevated levels of satisfaction with life of the DB Plans' members, the overwhelmingly dominant reason reported by people was the greater sense of financial security that accrues from greater certainty of retirement income. Other reasons included better physical and mental health, less stress (particularly financial), and higher satisfaction with community involvement and leisure time.

The social value benefits that arise from pension plans in general, and DB plans in particular, are significant. Among all retirees, those with a DB pension plan are the most satisfied with life, have better health, and have less financial stress. The value associated with these outcomes is equivalent to \$1.2 billion annually, or \$12,800 per retiree – effectively a 56% increase above their annual pension payments when compared to peers that do not have a pension. If DB Plan members were to have satisfaction with life that was the same as a DC pension retiree, the social value would fall by 40%. The incremental value of DB Plan membership over DC membership is equivalent to \$5,200 per retiree every year.

Active members of the DB Plans were found to have a 50% greater likelihood of being more satisfied with life compared to their peers who do not have a pension plan, though many other factors contribute to satisfaction with life than pension plans. Similar to retirees, active members have greater financial security and satisfaction with health and, on average, significantly lower financial concerns as a source of stress. Also noteworthy was that active members are more likely to feel a sense of belonging to their employer given their participation in a pension plan.

Employers that participate in the DB Plans also experience indirect social value benefits. These benefits, supported by the literature, can include lower employee turnover rates and greater productivity.

The results show that 81% of active DB Plan members agreed that their DB plan plays a role in them remaining at their current place of employment. In addition, among retirees, 78% of members agreed that their pension played a role in remaining at their place of employment during their careers.

Due to the significant social value impacts of pension plans, the inclusion of social value into any conversation of pension policy in the public or private sector is critical. Without it, the true value of the plans or the consequence of not having one is not fully captured. In particular, the differences revealed between DB and DC plans highlight how the long-term financial security of the DB plans results in greater benefits to members than other options.

A. Survey Methodology

A selection of members who live in Alberta and receive email communications from each of the participating plans were invited by their pension plan to complete the online survey. In addition, CANCEA selected a random panel of Albertans from the general population to also complete the survey. In total, CANCEA and the Plans reached out to over 5,800 people and received 1,350 completed, anonymized responses. The survey consisted of 40 questions specifically designed to understand the social value of pension plans. All responses were collected anonymously and no identifiable information from the plans was used.

The online survey was performed by CANCEA between March 8th and March 21st, 2022. Results of the survey were weighted to ensure that the overall sample's composition reflects that of the actual population of all members in the target population. Figure 20 and Figure 21 show the distribution of survey respondents, the average weight assigned to each group, and the final weighted distribution that matches the target population for the general Alberta population and DB Plan populations, respectively.

Figure 19 Distribution of survey respondents, weights, and resulting weighted population distribution for the general Albertan population

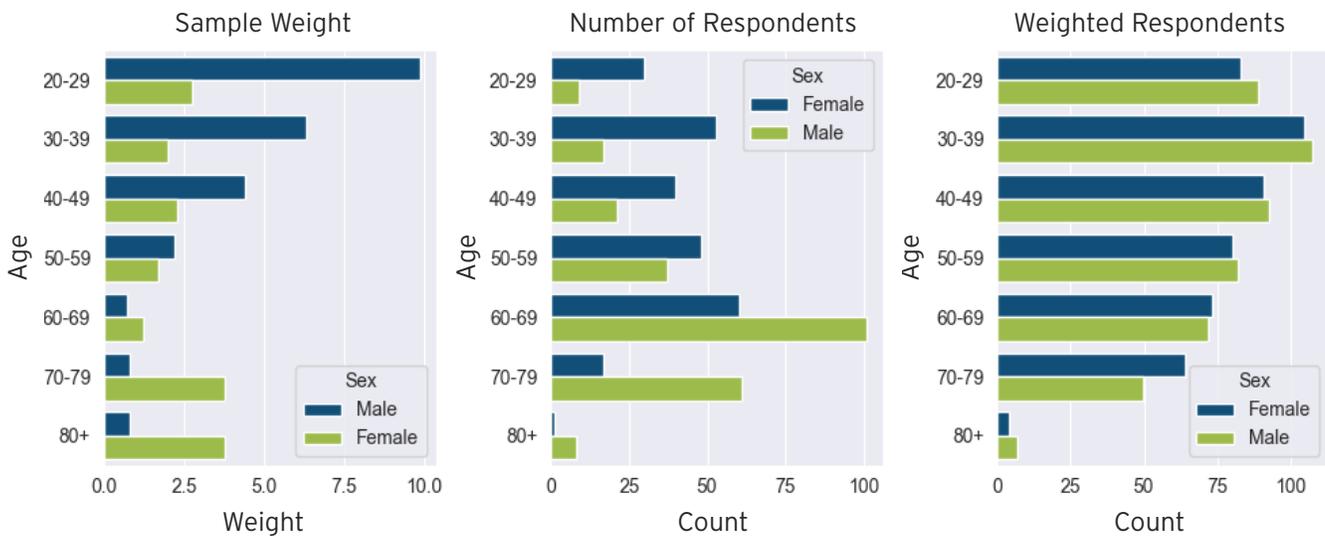
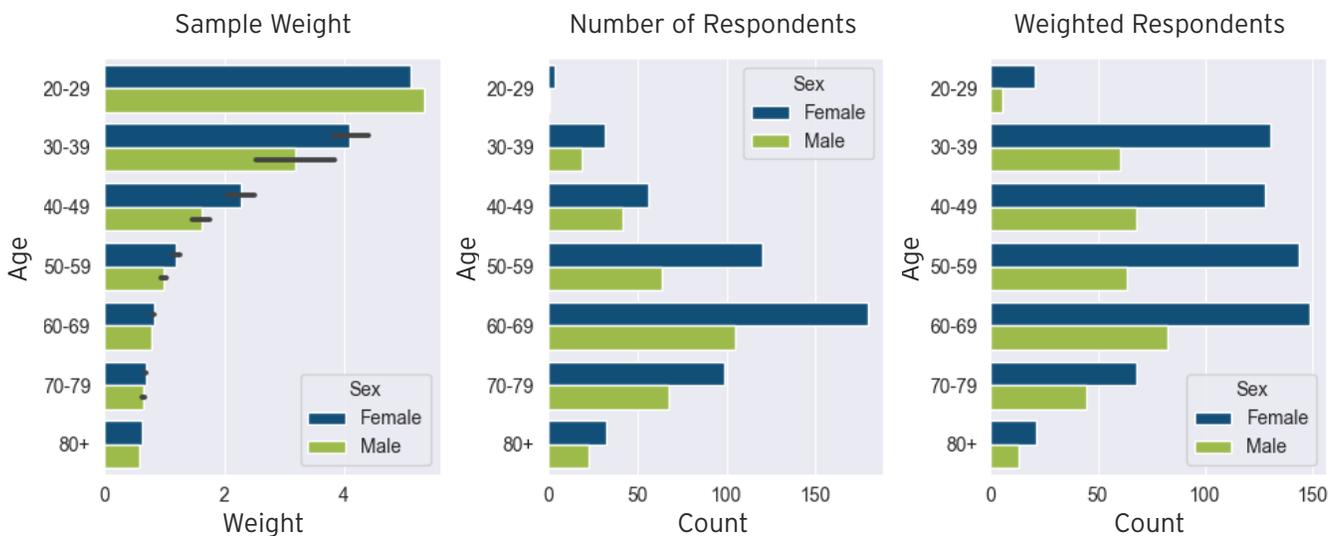


Figure 20 Distribution of survey respondents, weights, and resulting weighted population distribution for the members of the plans



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