

CSPS Strategy and Policy Journal

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CSPS
Strategy and Policy
Journal

Volume 12 • December 2025

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**Published by the Centre for Strategic and Policy Studies,
Brunei Darussalam**

ISSN 2079-8660

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What are the Barriers to Entrepreneurship in Brunei? Evidence from the CSPS Brunei Barometer

Hazwan Haini, Anwar Hashim and Diana Cheong

Abstract

Brunei Darussalam is committed to fostering entrepreneurship as part of its economic diversification strategy, as outlined in the Wawasan 2035 initiative. However, entrepreneurial activity in Brunei remains low compared to other regions globally. This study investigates the barriers to entrepreneurship in Brunei, based on findings from the CSPS Brunei Barometer, a comprehensive survey assessing economic, institutional, and socio-cultural domains. Focusing on Entrepreneurial domains, we find negative sentiments on entrepreneurial attitudes include a perceived lack of government support, difficulty finding access to networks and markets, and limited financial resources. Additionally, Bruneians might feel discouraged by the complexity of registering a business and a lack of necessary skills and business experience.

We find significant differences in how people perceive these barriers. Informal barriers, like lack of support from family and friends, are more likely to make people view entrepreneurship negatively in terms of its intrinsic value (work-life balance, community impact, and ethical business practices). Formal barriers, like limited market opportunities, tend to push people towards employment due to concerns about financial security (extrinsic factors). A multifaceted approach is needed to create a more supportive environment for entrepreneurship in Brunei that addresses both informal and formal barriers. This involves strengthening informal support systems by encouraging families to embrace entrepreneurial aspirations. Additionally, addressing formal barriers through policies that expand market opportunities and streamline business registration could make entrepreneurship a more attractive option.

Keywords: *Brunei; entrepreneurship; perceived barriers; institutional quality; informal institutions*

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1.0 Introduction

Brunei Darussalam continues to emphasise its commitment towards developing entrepreneurial activities and entrepreneurship, as outlined in the recent *Wawasan 2035 Report 2015-2022*, to diversify the economy (Wawasan Brunei, 2022). This commitment is reflected in various initiatives such as the incubator programmes supported by various higher education institutions, Darussalam Enterprise and the Brunei Economic Development Board among many others. These include financial assistance schemes from banks and mentorship programmes. This is important as the recent *Global Entrepreneurship Monitor Report* (GEM, 2024) finds that most entrepreneurial education in schools continues to be poor across the globe. This affects the ability of entrepreneurs to be future-ready as entrepreneurs are prioritising environmental or sustainability practices.

Table 1.
New Business Density (new registrations per 1,000 people)

Year	Brunei	Low & middle income	Lower middle income	High income	East Asia & Pacific	OECD members	World
2012	1.657	1.626	0.283	3.674	2.914	2.827	1.962
2013	1.615	1.773	0.270	3.838	3.262	2.917	2.112
2014	1.533	2.477	0.254	4.118	4.909	3.183	2.741
2015	1.896	2.619	0.261	4.290	5.415	3.344	2.877
2016	2.484	2.974	0.290	4.490	6.281	3.564	3.208
2017	2.580	2.953	0.342	4.471	6.817	3.572	3.188
2018	2.340	2.978	0.379	4.747	6.831	3.974	3.250
2019	2.364	3.091	0.434	4.735	6.587	4.045	3.361
2020	0.995	3.177	0.445	4.704	6.872	4.191	3.419
Average	1.940	2.630	0.329	4.341	5.543	3.513	2.902

Source: Authors' compilation from World Development Indicators (World Bank).

Despite Brunei's ongoing dedication to supportive entrepreneurial policies, there is still potential for growth in entrepreneurial activity. Table 1 outlines new business density, which is the number of newly registered companies with limited liability per 1,000 working-age adults per year. While this focuses on formal business registrations, as it overlooks sole proprietorship, Brunei has lower levels of entrepreneurial activity compared to various income groups across the global economy.

This raises the question: *what are the barriers that hinder entrepreneurship in Brunei?*

The extant literature highlights the importance of a country's institutional framework for businesses to develop. This includes the establishment of a legal system with property rights enforcement that can ensure that entrepreneurs are incentivised, as this lowers uncertainty for new entrepreneurs (Urbano et al., 2019). However, the institutional framework goes beyond this formal pillar and includes dimensions such as the informal, regulatory, and cultural norms that affect new and existing entrepreneurs

(Williamson, 2000).¹ This is important for new entrepreneurs as the institutional framework can affect their perception of entrepreneurship through the lens of cognitive and normative pillars (Mello et al., 2022; Romanello et al., 2022).²

In the context of Brunei, perceptions of the institutional framework can potentially manifest itself as barriers to entering the market by providing incentive structures. The formal institutional framework is grounded within the regulatory dimension and normative dimension which affects behaviour and norms and are potentially related to the policies that are implemented by governments (Haini et al., 2023). Moreover, the informal cognitive dimension affects behavioural levels such as perceived persistence and trust (Ahsan et al., 2021).³ Thus, it is fundamental to differentiate the barriers that are significantly associated with lower levels of entrepreneurial activity, as this can lead to better policy implications that support *Wawasan 2035*.

2.0 Background and Theoretical Considerations

The institutional framework of a country allows businesses to thrive and prosper, as a well-defined legal system with the enforcement of property rights creates incentives for better resource allocation, lowers transaction and transformational costs, and reduces uncertainty for individuals to engage in innovative and productive activities (Jain, 2020; Urbano et al., 2019; Yasar et al., 2011). The institutional framework consists of various dimensions that include the formal, informal, regulatory, and norms that affect businesses in various ways and are interrelated in nature (Aidis, 2005; Williamson, 2000). Other institutional frameworks examine institutions through the lens of the cognitive, normative, and regulative pillars (Elango & Lahiri, 2014; Mello et al., 2022; Romanello et al., 2022).

Broadly speaking, institutions affect entrepreneurship through different factor endowments (capital, labour, and knowledge), and increase the productivity of these factors to enhance national income (Aparicio et al., 2022). There are several mechanisms and theories that explain how institutions affect entrepreneurship.

The transaction cost theory postulates that institutions can reduce market friction and the cost of operating a business, which ultimately increases productivity (Martins et al., 2020). Transaction costs include the costs of establishing contracts, negotiating, monitoring, and enforcing contracts that can determine productivity (Yasar et al., 2011). Consequently, economies with higher levels of institutional

¹ Informal institutions are socially embedded, deeply rooted and show inertia, and includes norms, customs, and traditions, while formal institutions include regulatory frameworks and codified rules.

² The cognitive dimension include socially shared knowledge, ideologies, and logics, while the normative dimension considers beliefs, norms, and assumptions about human behaviour.

³ Entrepreneurial persistence can be described as behaviour that involves a goal-directed energy such as entrepreneurial successes.

quality can support businesses with an environment that enforces, governs, and regulates with a consistent and reliable rule of law that can encourage entrepreneurship (LiPuma et al., 2013). These transaction costs can be reduced in the presence of formal institutions that regulate effectively, or by minimising informal practices such as bureaucracy and corruption (Ajide & Soyemi, 2022). Additionally, institutions can also reduce transaction costs and uncertainties associated with new ventures (Aljarodi et al., 2022).

In addition, the public choice theory hypothesises that institutions matter for entrepreneurs as they can incentivise or deter entrepreneurship (Martins et al., 2020). In essence, individuals do not face the same set of constraints, particularly constrained individuals, as highlighted earlier (Du et al., 2022; Kapri, 2019; Matta et al., 2018; Xiao et al., 2022). If entrepreneurs operate in a business environment that is highly bureaucratic and corrupt, it creates a disincentive for firms to invest and innovate, and eventually discourages entrepreneurship (Jain, 2020). Consequently, better institutions can encourage better resource allocation as it reduces the uncertainty element by providing incentives for entrepreneurs to do so (Hussen & Çokgezen, 2021).

Incentive structures are affected due to the central market failure of information, as information asymmetry can lead to lower returns. This is known as the theory of entrepreneurial allocation, whereby disincentives for entrepreneurs misallocate resources away from their most effective use (Martins et al., 2020). In the absence of property rights protection, incumbent firms that invest in research and development can easily be misappropriated by other firms that lead to suboptimal profits (LiPuma et al., 2013). Moreover, well developed incentives foster competition and facilitate the exchange of goods and services that can lead to further growth and entrepreneurship through spillover effects (Ede, 2021; Hashi & Krasniqi, 2011).

Finally, informal institutions can also affect the incentive structures of entrepreneurs, through informal settings that are deemed to be the norm by society or internalised knowledge. Previously, we highlighted the role of institutions in the regulatory dimension, such as formal judicial and regulatory enforcement, or the normative dimension that affects behaviour and norms, such as networks and practices in the form of corruption or bribery (Elango & Lahiri, 2014). The cognitive dimension focuses on the mechanisms that affect entrepreneurship on a behavioural level, such as entrepreneurial persistence and trust (Ahsan et al., 2021; Rus & Iglíč, 2005). Entrepreneurial persistence can be described as behaviour that involves a goal-directed energy such as entrepreneurial successes. It is suggested that individuals are more likely to persist and perform in business environments with high quality institutions, as it promotes entrepreneurial behaviour (Ahsan et al., 2021; Saeedikiya et al., 2022).

3.0 Findings and Analysis

3.1 CSPS Brunei Barometer - Entrepreneurship Domains

The CSPS Brunei Barometer aims to evaluate the perceptions of Bruneians on issues regarding Economic, Institutional, and Socio-Cultural domains in order to improve our understanding of the social and economic progress perceived by households, as well as tracking the attitudes, sentiments and resilience of Bruneians. More specifically, the CSPS Brunei Barometer is a face-to-face, household-based survey with up to 1,582 responses from adults that is nationally representative of the four districts in Brunei Darussalam. The CSPS Brunei Barometer has a confidence level of 98% and a 2.9% margin of error.

We focus on the Entrepreneurship sub-domains within the Economic domain. Participants were asked questions to assess entrepreneurship with regard to beliefs, attitudes and opinions about the state of entrepreneurship in Brunei. More specifically, the questions focus on their opinions about starting a business in Brunei⁴ and the lack of entrepreneurship in Brunei (barriers)⁵. As these questions utilised a Likert scale⁶, we converted these sentiments into a binary variable in order to conduct econometric analysis.⁷ Table 1 presents the summary statistics of the dependent and independent variables, as well as their definitions. Note that our sample size is 739 observations as we dropped missing values from our sample dataset.

There are eight dependent variables, which capture the sentiments of Bruneians on entrepreneurship. These include the characteristics to become an entrepreneur, their preference on becoming an entrepreneur over employment, their views on entrepreneurship in terms of money, community, ethics, and being a role model. Finally, we construct an overall entrepreneurship variable that captures the seven entrepreneurship domains.

In terms of barriers to entrepreneurship, there are 12 independent variables of interest. These include lack of government support, networks, market opportunities, financial resources, business ideas, business experience, business information, management and entrepreneurial skills and support from family and friends. Additionally, difficulties in registering a business is also included as a potential barrier.

⁴ “We would like to hear your opinions on entrepreneurship/starting a business.”

⁵ “In your opinion, what do you think are the reasons for the lack of entrepreneurship in Brunei?”

⁶ All attitude items were measured on a 5-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree).

⁷ Dichotomization rule. We code “agree” or “strongly agree” (4–5) as 1 (positive) and “neither/disagree/strongly disagree” (1–3) as 0 (non-positive) for all attitude and barrier items. Items phrased negatively are reverse coded so that 1 always denotes a positive perception. Results are robust to alternative thresholds.

These barriers can be potentially categorised as formal institutional barriers, such as the lack of government support, difficulties in registering a business, financial resources and market opportunities, as well as informal barriers such as lack of support from friends and family, networks, and attitudes towards effort, among others. This potentially affects the cognitive dimension and behavioural level of respondents in relation to their sentiments on the state of entrepreneurship. Finally, we include control variables to isolate the effect of the perceived barriers on entrepreneurship. Our control variables include gender, age, ethnicity, marital status, income levels, education level, ability to speak Malay and English, mathematical ability, employment status, parent's education and the district.

Table 2. Summary of variables

Variable	Description	Mean	Std. Dev.	Min.	Max.
Dependent Variables					
<i>entrecharac_i</i>	1 if the respondent agrees that they have the characteristics to become a successful entrepreneur; 0 otherwise	0.636	0.481	0	1
<i>employee_i</i>	1 if the respondent agrees to starting a business rather than becoming a government or private employee; 0 otherwise	0.476	0.499	0	1
<i>money_i</i>	1 if the respondent agrees that entrepreneurs care about more than just money; 0 otherwise	0.673	0.469	0	1
<i>famtime_i</i>	1 if the respondent agrees that entrepreneurs spend quality time with their family; 0 otherwise	0.637	0.481	0	1
<i>community_i</i>	1 if the respondent agrees that entrepreneurs contribute positively to community life; 0 otherwise	0.824	0.381	0	1
<i>ethics_i</i>	1 if the respondent agrees that entrepreneurs have strong ethics; 0 otherwise	0.793	0.405	0	1
<i>rolemodel_i</i>	1 if the respondent agrees that successful entrepreneurs are ideal role models; 0 otherwise	0.860	0.346	0	1
<i>ent_i</i>	1 if the respondent agrees with the majority of the seven entrepreneurship domains; 0 otherwise	0.407	0.491	0	1
Independent Variables					
<i>govtsupport_i</i>	1 if the respondent agrees with lack of government support; 0 otherwise	0.659	0.474	0	1
<i>network_i</i>	1 if the respondent agrees with lack of the right network; 0 otherwise	0.849	0.357	0	1
<i>mrktopp_i</i>	1 if the respondent agrees with lack of market opportunities; 0 otherwise	0.786	0.410	0	1
<i>bizsreg_i</i>	1 if the respondent agrees with difficulty to register a business; 0 otherwise	0.640	0.480	0	1
<i>finresources_i</i>	1 if the respondent agrees with lack of financial resources; 0 otherwise	0.891	0.310	0	1
<i>effort_i</i>	1 if the respondent agrees with too much effort required; 0 otherwise	0.820	0.384	0	1
<i>risk_i</i>	1 if the respondent agrees with high risk involve in entrepreneurship; 0 otherwise	0.879	0.325	0	1
<i>bizideas_i</i>	1 if the respondent agrees with lack of business ideas; 0 otherwise	0.779	0.414	0	1
<i>bizexp_i</i>	1 if the respondent agrees with lack of business experience; 0 otherwise	0.802	0.398	0	1
<i>businfo_i</i>	1 if the respondent agrees with lack of business information; 0 otherwise	0.837	0.369	0	1

Variable	Description	Mean	Std. Dev.	Min.	Max.
$entreskills_i$	1 if the respondent agrees with lack of management and entrepreneurial skills; 0 otherwise	0.832	0.373	0	1
$famsupport_i$	1 if the respondent agrees with lack of support from family and friends; 0 otherwise	0.606	0.488	0	1

Source: Authors' compilation and calculation from the CPS Barometer 2023. There are a total of 739 observations.

In terms of entrepreneurship sentiments, the mean value of overall entrepreneurship is around 0.407, which implies negative sentiment in general. In terms of specific entrepreneurship domains, respondents seem to have lower preference on starting a business and seem to prefer employment (0.476). Focusing on barriers, most respondents score more than 60% for all the suggested barriers. Lack of financial resources followed by high risk and lack of networks seem to be the most agreed upon barrier.

3.2 Logistic Regression and Methodology

Our dependent variables are binary indicators (1 = positive perception; 0 otherwise), so we estimate binary logistic models and report marginal effects for interpretability. We also report the area under the Receiver Operating Characteristic (ROC) curve as a calibration/fit diagnostic. As a sensitivity check, we re-estimated ordered logits on the original 5-point responses (before dichotomization) and obtained qualitatively consistent signs and significance for the key barriers (available on request). The binary logit is retained as the main specification for ease of policy interpretation.⁸

Consequently, entrepreneurship, denoted by ent_i^j where j represents various dimensions of perceived entrepreneurship domains, is a dummy variable that takes the value of 1 if a person has a positive opinion about the respective entrepreneurship domain, 0 otherwise. The logistic approach is appropriate in this case as the dependent variable is a binary variable and estimating a logistic regression is more efficient when compared to the linear regression (Gujarati, 1995). Equation (1) presents the logistic regression with the independent variables of predictors that affect the likelihood of perceived entrepreneurship domain.

$$Prob(ent_i^j) = \alpha + \beta_x barriers_i + \beta_z controls + \varepsilon_i \quad (1)$$

The dependent variables ent_i^j aims to capture the likelihood of positive perceptions for the various entrepreneurship domains reported within the households.

⁸ We deliberately report aggregate relationships rather than subgroup models. Several subgroup cells are small, and multiple testing would risk unstable estimates: moreover, fine-grained crosstabs in a small population setting pose confidentiality concerns. Exploring heterogeneity is valuable but beyond the scope of this study

Table 3 presents the estimated results of the barriers to entrepreneurial sentiments. We report the marginal effects of the logistic regression instead of the odds ratio. We also report the area under the ROC curve, as a robustness test to ensure that the logistic regression is valid.⁹ This provides an indicator of whether the model is well-calibrated. The ROC is bounded between 0.5 to 1 and it is suggested that a ROC value closer to 1 is better, as it suggests that the model has a high level of discrimination ability and sensitivity.

Interestingly, while the perceived barriers to entrepreneurship seem to be consistent across all independent variables in Table 2, our results in Table 3 suggest that not all these sentiments are associated with the respondent's view on entrepreneurial attitudes. In fact, barriers such as lack of networks, lack of financial resources, risk, and entrepreneurial skills are all insignificantly associated with entrepreneurial attitudes among our respondents.

3.3 Perceived Lack of Government Support

Leaving aside the marginal effects, the remaining barriers seem to be significant predictors of negative perceptions on entrepreneurship. In terms of lack of government support, those who perceived this to be a barrier, are 13.2% more likely to assume that entrepreneurs lack family time and are 7.1% more likely to think that entrepreneurs contribute less to the community. Lack of government support is also negatively associated with overall entrepreneurship. This implies that respondents assume that the lack of government support leads to longer hours with lack of family time and focus on commercialisation rather than developing the community.

3.4 Perceived Lack of Market Opportunity and Effort

Furthermore, those who perceive market opportunity to be a barrier to entrepreneurship are 11.7% more likely to favour employment within the government and private sector compared to starting a business and are 8.5% more likely to assume that entrepreneurs are more likely to be ethical. While the latter is harder to explain intuitively, the former highlights the preference of the public when faced with the lack of market opportunities. This implies that respondents favour employment over entrepreneurship when they find no market opportunities. Interestingly, those who believe entrepreneurship takes too much effort are also 12.0% more likely to favour employment within the government and private sector compared to starting a business.

⁹ The pseudo R^2 is less applicable as this is a non-linear regression.

Results

Table 3. Logistic Estimation – Marginal Effects

Dependent Variable	<i>entrecharac_i</i>	<i>employee_i</i>	<i>money_i</i>	<i>famtime_i</i>	<i>community_i</i>	<i>ethics_i</i>	<i>rolemodel_i</i>	<i>entre_i</i>
Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>govtsupport_i</i>	-0.031 (0.045)	0.038 (0.046)	0.036 (0.044)	-0.132*** (0.045)	-0.071* (0.039)	-0.022 (0.039)	0.011 (0.034)	-0.076* (0.045)
<i>network_i</i>	0.044 (0.060)	0.032 (0.062)	-0.060 (0.060)	-0.004 (0.062)	-0.010 (0.054)	-0.082 (0.059)	0.012 (0.047)	0.080 (0.060)
<i>mrktopp_i</i>	-0.002 (0.052)	-0.117** (0.052)	0.016 (0.050)	-0.046 (0.052)	0.056 (0.042)	0.085** (0.043)	0.050 (0.038)	0.004 (0.051)
<i>bizsreg_i</i>	0.008 (0.044)	0.031 (0.046)	0.025 (0.043)	0.024 (0.044)	-0.065* (0.038)	-0.095** (0.039)	-0.128*** (0.038)	-0.083* (0.045)
<i>finresources_i</i>	0.023 (0.070)	0.048 (0.072)	-0.019 (0.069)	-0.056 (0.073)	-0.011 (0.061)	0.033 (0.064)	0.020 (0.054)	0.009 (0.070)
<i>effort_i</i>	-0.073 (0.057)	-0.120** (0.058)	0.027 (0.055)	-0.083 (0.057)	-0.026 (0.047)	-0.077 (0.052)	-0.039 (0.044)	-0.045 (0.056)
<i>risk_i</i>	0.048 (0.068)	0.032 (0.070)	-0.112 (0.070)	0.043 (0.068)	0.077 (0.056)	0.019 (0.064)	0.019 (0.054)	0.056 (0.069)
<i>bizideas_i</i>	-0.012 (0.058)	-0.071 (0.059)	-0.052 (0.058)	0.005 (0.058)	-0.106** (0.053)	-0.109** (0.054)	-0.038 (0.046)	-0.146*** (0.056)
<i>bizexp_i</i>	-0.108* (0.065)	-0.032 (0.064)	-0.112* (0.064)	-0.040 (0.063)	0.016 (0.054)	0.000 (0.057)	0.008 (0.049)	-0.010 (0.062)
<i>businfo_i</i>	-0.039 (0.080)	-0.046 (0.080)	0.146* (0.077)	0.040 (0.079)	0.096 (0.066)	0.084 (0.072)	0.043 (0.060)	0.022 (0.078)
<i>entreskills_i</i>	0.056 (0.077)	0.013 (0.078)	0.022 (0.076)	0.037 (0.078)	-0.074 (0.068)	-0.075 (0.074)	-0.003 (0.060)	-0.053 (0.076)
<i>famsupport_i</i>	-0.040 (0.041)	-0.051 (0.042)	-0.069* (0.040)	-0.130*** (0.040)	-0.055* (0.033)	-0.070** (0.035)	-0.082*** (0.032)	-0.050 (0.041)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R ²	0.045	0.041	0.037	0.057	0.061	0.083	0.061	0.047
Log likelihood	-462.47	-490.46	-449.13	-456.24	-322.51	-345.32	-280.16	-475.74
Chi-squared	44.17	41.89	34.94	55.50	42.45	63.13	36.54	47.44
Area ROC curve	0.630	0.631	0.637	0.661	0.673	0.699	0.678	0.640
\overline{VIF}	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60

Source: Authors' calculations. $N = 739$. Definition of the variables are in Table 2. The average marginal effects of the regressors are reported above. As a robustness test, a probit model was estimated, and the results are similar. *, **, and *** denote statistical significance at the 10%, 5% and 1% levels, respectively. Standard errors are in parenthesis. ROC curve represents the degree of separability.

3.5 Perceived Difficulties in Registering a Business

Additionally, difficulties in registering a business are also significantly associated with some entrepreneurship domains. Those who perceive difficulties in business registrations assume that businesses are 6.5% more likely to contribute less to the community, 9.5% less likely to be ethical, and are 12.8% less likely to be role models. While this is harder to explain intuitively, this may indicate potential issues of transparency in business registrations, as perceptions of difficulties in business registration may lead to incorrect assumptions about ease of business registrations for those that are well-established.

3.6 Perceived Lack of Business Ideas and Experience

In terms of business ideas, those that find lack of business ideas as a main barrier to entrepreneurship are 10.6% more likely to assume that businesses contribute less to the community and are 10.9% less likely to be ethical. Meanwhile, those that perceive lack of business experience are 10.8% more likely to believe that they do not have the characteristics to become an entrepreneur and are 11.2% more likely to assume that businesses only care about money. Similarly, those that perceive lack of business information are 14.6% more likely to assume that businesses only care about money.

3.7 Perceived Lack of Support from Friends and Family

Finally, those that perceived lack of support from family and friends are significantly associated with several entrepreneurship domains. This includes: 6.9% more likely to assume that businesses only care about money; 13.0% more likely to assume that entrepreneurs lack family time; 5.5% more likely to contribute less to the community; 7.0% more likely to contribute less to the community; and 8.2% less likely to be a role model. The findings imply that informal barriers are more likely to shape the respondent's view of entrepreneurship in a negative manner.

3.8 Summary of Significant Factors

Table 4 presents a summary of our significant factors to attitudes on the state of entrepreneurship in Brunei. In summary, not all perceived barriers to entrepreneurship are associated with attitudes to the entrepreneurial landscape. Interestingly, we find perceived informal barriers such as lack of support from family and friends are more associated with negative sentiments on entrepreneurship in terms of family time, community, ethics and role model. This implies that perceived informal barriers to entrepreneurship are associated with intrinsic factors. In other words, if a person finds that the lack of

support from family and friends is a barrier to entrepreneurial activity, they are more likely to view entrepreneurs in a negative manner. This is consistent with previous studies that find family background as a determinant of their perceptions of entrepreneurship in Brunei (Kim et al., 2013).

Table 4. Significant Factors – Entrepreneurship Domains

Entrepreneurship Domain	Significant Factors
<i>entrecharac_i</i>	<ul style="list-style-type: none"> • Lack of business experience
<i>employee_i</i>	<ul style="list-style-type: none"> • Lack of market opportunities • Too much effort required
<i>money_i</i>	<ul style="list-style-type: none"> • Lack of business experience • Lack of business information • Lack of support from family and friends
<i>famtime_i</i>	<ul style="list-style-type: none"> • Lack of government support • Lack of support from family and friends
<i>community_i</i>	<ul style="list-style-type: none"> • Lack of government support • Difficulty in registering a business • Lack of business ideas • Lack of support from family and friends
<i>ethics_i</i>	<ul style="list-style-type: none"> • Lack of market opportunities • Difficulty in registering a business • Lack of business ideas • Lack of support from family and friends
<i>rolemodel_i</i>	<ul style="list-style-type: none"> • Difficulty in registering a business • Lack of support from family and friends
<i>entre_i</i>	<ul style="list-style-type: none"> • Lack of government support • Difficulty in registering a business • Lack of business ideas

Source: Authors' compilation from Table 3.

Meanwhile, those that perceive formal barriers such as lack of market opportunities and the need to take more effort are more likely to favour employment in the government or private sector rather than starting a business. This implies that perceived formal barriers to entrepreneurship are associated with more extrinsic elements of entrepreneurship with regard to opportunity cost. This is beyond the intrinsic element of entrepreneurship, but more on the opportunity cost of becoming one.

However, this is not necessarily the case. For example, those that perceive that there are formal barriers, such as lack of business experience and business information, are associated with negative sentiments of entrepreneurship in terms of chasing money. Similarly, perceived lack of government support is also associated with less family time and community efforts. This is consistent with previous studies that do not find civil servants as models for entrepreneurship (Heeks, 1998). Similarly, recent studies also highlight the interrelated nature of formal and informal barriers and constraints (Heilmaier & Ling, 2020). Our overall entrepreneurship variable highlights three main sentiments: perceived lack of government support, perceived difficulties in business registrations, and perceived lack of business ideas.

On a positive note, perceived barriers such as lack of business networks, lack of financial resources, high risk, and lack of entrepreneurial skills are insignificantly associated with negative sentiments of entrepreneurship in Brunei. This implies that the current initiatives to support businesses may be successful, particularly from incubator programmes such as those from Darussalam Enterprise, UBD Entrepreneurship Village, and financial institutions such as Brunei Islamic Bank Berhad and Baiduri Bank in their efforts to provide funding (Semivolos & Raimi, 2022).

4.0 Concluding Remarks and Policy Implications

This study examines the perceived barriers that hinder entrepreneurship in Brunei. While Brunei has emphasized the development of entrepreneurial activities and entrepreneurship in its Wawasan 2035 vision, the results suggest that not all perceived barriers to entrepreneurship are associated with negative sentiments towards entrepreneurship among Bruneians.

Our study finds that perceived informal barriers are more strongly associated with negative views of entrepreneurship. This implies that these informal and cognitive barriers shape intrinsic perceptions of entrepreneurship among Bruneians. In contrast, perceived formal barriers, such as lack of market opportunities and the perception that entrepreneurship requires too much effort, are more strongly linked to a preference for employment in the government or private sector over starting a business. This suggests that these formal and institutional barriers influence the extrinsic, opportunity cost considerations of entrepreneurship.

4.1 Policy Recommendations: Mindset Shift and the Future of Work

Our results echo previous work by Cheong (2019), which highlights the urgent need of a mindset and attitudinal shift. While Cheong (2019) focuses on the artificial intelligence revolution and its impact on the workforce, the idea that a mindset shift is required in response to changing perceptions is appropriate in this case. Intrinsic factors are derived from cognitive elements that can affect sentiments on entrepreneurial attitudes which requires a mindset shift. However, this mindset shift can be approached in various ways. Our discussion intentionally focuses on mechanism-level levers linked to the estimates; programme-specific 'quick wins' (budgets, mandates, timelines) require implementation studies beyond the scope of this research article.

4.2 Policy Recommendations: Addressing Informal Barriers

To address informal barriers to entrepreneurship, it is essential to implement programmes that foster an entrepreneurial mindset and increase support from family and friends. Awareness campaigns and mentorship initiatives can play a significant role in this regard. For example, Singapore's "Startup SG

Founder" programme provides mentorship and funding for aspiring entrepreneurs, helping to build a supportive ecosystem within their social networks. By fostering a culture of entrepreneurial support within families and communities, Brunei can help overcome the perceived lack of encouragement but more importantly the misperception that entrepreneurs only care about money and do not develop communities. Additionally, the government can continue to support the existing entrepreneurial educational initiatives implemented by higher education institutions.

4.3 Policy Recommendations: Improving Formal Institutional Framework

Improving the formal institutional framework is another critical aspect. Enhancing government support for entrepreneurs, including streamlining business registration processes, improving access to financing, and providing targeted training and advisory services, are recommended. For example, Malaysia's "SME Co-Investment Partners (SCIP) Program" is a programme from the Malaysian Global Innovation and Creativity Centre (MaGIC) that provides financial assistance and advisory services to small and medium enterprises, helping them overcome funding and informational barriers. Brunei can adopt similar initiatives to address the perceived lack of government support and access to resources. Moreover, investing in developing market opportunities and infrastructure will enable entrepreneurs to identify and capitalize on viable business ideas.

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Fulfilling Aspirations: A Study of the Professional Goals and Self-Identity of Women in the Brunei Workforce

Azrinah Rahman

Abstract

This study explores the significance of paid employment among 18 Bruneian working mothers with diverse educational backgrounds, despite their acceptance of their primary role as the main caregiver. Utilizing face-to-face interviews as the primary qualitative approach, the research discerned a prevalent trend in which most participants underscored their professional identity and expressed aspirations for career advancement. It is imperative for policymakers to recognize the pivotal roles women assume as primary caregivers and to provide the requisite support to enable working mothers in Brunei to thrive in their multiple roles. This research contributes to a deeper understanding of the experiences and perspectives of employed mothers and the challenges they face in balancing their professional careers with their caregiving responsibilities, urging policymakers to integrate such insights into policy formulation to support women's professional development and well-being better, thereby fostering gender equality and socioeconomic progress in Brunei.

Keywords: *women in employment, career aspiration, self-identity, family polices, work-life balance*

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1.0 Introduction

The rise in female labour force participation, a global social trend and economic development, has been a notable feature of the past century (International Labour Organization, 2023c; OECD, 2024). The current share of women in the labour force is higher than that of half a century ago, a trend that is not limited to a few countries but is a global movement, driven by the recognition that women's active contribution is crucial for national development.

Global female labour force participation rate was reported at 47% per cent in 2022 (International Labour Organization, 2024a). With an estimated population of 450,500 (Department of Economic Planning and Statistics, 2023) and a labour force of 220,061, Bruneian women's participation in the labour market (at 88,066 or 40.3%) is identified as necessary to drive the country to achieve its Wawasan goals (Department of Economic Planning and Statistics, 2023). However, working women, particularly mothers, face distinct challenges related to social identity, stigmatization, and discrimination throughout various stages of their employment. These challenges include biased hiring practices, limited opportunities for career advancement, inadequate retention strategies, and insufficient support for balancing work and family responsibilities (Patel & Singh, 2024; Torres et al, 2024).

2.0 Literature Review

Social roles continue to shift, including the functions men and women carry out within their families. In the traditional breadwinner model of the family, men are responsible for economic provision through employment while women are responsible for home and family. The traditional assumption of males as breadwinners and females as caregivers in the household and shared conceptions of masculinity and femininity are widely acknowledged as normative constraints to women's economic empowerment (Goldstein et al., 2024; Jayachandran, 2021). In 2023, 748 million people (aged 15 or older) were not participating in the global labour force because of care responsibilities ((International Labour Organization, 2024b).

While women in employment are not new to Asia, the emergence of "educated working women" is a significant development (O'Neill & O'Neill, 2018, p. 36). As women are empowered due to better access to education, there is a significant potential for their career advancement. However, the number of women at the top management level is still deficient in most Asian countries, including Brunei. In 2023, women represented 39% of those employed in senior and middle management in Brunei (International Labour Organization, 2025). In a 2022 survey of 1200 working women in Brunei, approximately 17.5% (210 out of 1200) reported leaving or changing their jobs due to conflicts with

family responsibilities. Additionally, around 32% (384 out of 1200) indicated a lack of career advancement or progression commensurate with their abilities. However, a significant majority, about 62% (747 out of 1200), have expressed aspirations for career development, highlighting the urgency to address these challenges.

3.0 Methodology

This exploratory and descriptive study explores the meanings of work, career progression, and the challenges working mothers encounter in Brunei pursuing their careers. Over eight months, from August 2015 to March 2016, fieldwork was conducted involving 18 employed mothers aged between 27 and 43, collectively responsible for 45 children. All participants were recruited from the Brunei-Muara district, Brunei’s most densely populated district. The interview questions aim to explore the various factors influencing their career choices, the significance of career aspirations as a component of self-identity among working mothers in Brunei, the challenges they encounter while navigating the workplace, and to solicit their preferences regarding potential employer and government policies aimed at better supporting their professional endeavours and work-life balance. Interviews lasted about one and a half hours and were conducted in Malay and English. For this paper, excerpts were translated into English. A brief description of the working mothers involved in this study is given in Table 1. For ethical reasons and to protect their identity, each woman was given a pseudonym.

Table 1

Demographic Attributes of Interviewed Bruneian Working Mothers

Participant	Age	No of children	Educational background	Position
1. Alamanda	32	1	Master’s Degree	Education officer
2. Anggrek	34	2	First Degree	Government officer
3. Azalea	33	3	Master’s Degree	Manager in private sector
4. Rose	35	1	High school	Receptionist
5. Yasmine	36	2	First Degree	Education officer
6. Violet	41	3	Master’s Degree	Legal officer
7. Begonia	36	2	First Degree	Government officer
8. Seroja	37	3	High School	Clerk in private sector
9. Teratai	41	4	High school	Secretary in private sector
10. Mawar	35	2	Pursuing PHD	Education officer

11.Widuri,	36	3	Master's Degree	Legal officer
12.Lavender	32	1	Doctorate	Medical officer
13.Daisy	27	1	High school	Administrative assistant
14.Iris	35	2	Master's Degree	Officer in private sector
15.Rozy	42	4	High school	Cook
16.Lily	41	4	Master's Degree	Government officer
17.Lotus	33	3	High school	Clerk in government sector
18.Sakura	43	4	High school	Clerk in government sector

4.0 Findings

4.1 Work Commitment And Self-Identity: Perspectives From Employed Mothers

For some, work was not only about being able to provide for children but also about self-identity and being economically independent, giving social legitimacy to our lives. For many, it may be the principal source of personal identity, mediating the sense of being a valued person necessary for self-esteem (O'Brien, 2025). "Much has been written about how family status or work shapes identity, but these accounts are offered as if everyone inhabits identity or reacts to identity categories in precisely the same way" (O'Brien, 2025, pg. 370). Although each individual has an identity, in this case, worker and mother, those identities are recognized to be different, complex, contradictory, and tension-filled across different societies at different times (Martin et al., 2020). For mothers who work, Hennekam et al. note that "multiple life roles result in inter-role conflict as individuals experience difficulty performing each role successfully because of conflicting demands and social expectations about their life roles" (2019, p. 917).

According to Wang and MacNab (2020), "work commitment not only reflects an individual's dedication to their job but also encompasses the balancing act between various life roles, particularly for women who navigate both professional and familial responsibilities" (p. 40). This highlights the complexity of women's work commitment as it involves managing both career aspirations and family obligations and the need to develop strategies that allow them to balance their multiple identities. "Women's identities as

workers and mothers are increasingly intertwined, reflecting a collective understanding that career involvement is integral to modern mothering" (Ridgeway & Correll, 2021, p. 125). This interconnected identity challenges traditional notions of gender roles and contributes to evolving gender dynamics, emphasizing the importance of recognizing the dual responsibilities that women manage in contemporary society, where providing for children through paid work is seen not just as a job but also as an essential part of parenting.

Subjective work commitment can be measured by exploring what binds workers to employment other than wages (Wielers & Van Der Meer, 2021). During the interviews, participants were asked the following question: "If financial constraints were not a factor and your partner earned an income equivalent to your current combined earnings, would you continue working?" The majority of employed mothers responded affirmatively, suggesting their need to be identified as more than a mother and wife, and highlighting their expertise and identity as a worker as being important to their self-identity.

Rose stated that she would not leave her job even if income was not an issue. Although she sees herself as primarily responsible at home, she clearly stated her desire for a worker identity too.

I definitely would still work. I think I would go crazy if I stayed at home. Even though I'm not a high-ranking officer and only earn a little. It's still something that is my own. (Rose, mother of one)

Widuri, who has both a Law and a Master's degree, cited the investment she made in higher education as the reason she would stay in employment. Despite her rejection of a promotion and the priority she gives to her family, she said she still wants to stand on her own and be recognised for her expertise in her work field.

What am I supposed to do with my law degree? Just hang it on the wall while I wash dishes? No way. I don't care how much he earns. I've earned the professional title on my own, so of course I want to stay in my career. (Widuri, mother of three)

Anggrek too cited her hard work and investment in attaining a degree as the main reason she would stay in employment. The fact that she enjoys her work was important in this thinking. She wants a separate identity too.

I don't think I would quit my job, even if money wasn't the issue. I spent a long time studying and I enjoy what I do at work. I feel like I do need that identity that belongs to just me. Not just as a mother or a wife. It wouldn't be enough for me. (Anggrek, mother of two)

Violet, who has a Master's degree, cited financial security as the main reason for her to continue her engagement in paid work. She too emphasised the importance of her independence.

I would still work. Nowadays you never know. Things can happen. So I need the security my job brings me. Being independent is important to me. (Violet, mother of three)

Alamanda, a Master's degree holder, also cited the need for women to be independent as the main reason to stay engaged in employment. She gave the example of her mother, who was financially dependent on her father, which she sees as not ideal.

No, I wouldn't quit. That's his money and I need money of my own. I don't want to rely on him if I want something. I've seen how difficult it was for my mother as a housewife. She had to rely on my father for financial support. And that is something I don't want to be. (Alamanda, mother of one)

4.2 Negotiating Career Development Amidst Family Responsibilities

Despite the advancement in educational achievement—in many countries there are now more female than male graduates—women continue to face multiple barriers to their equal access, participation, and progress in the labour market (International Labour Organization, 2023). Career development is clearly important for women, as several participants in this study underwent further studies after having families. Out of the 18 employed mothers,

seven had sought further career development, while three others expressed their desire to do so in the future. The mobilization of family capital in the form of grandparent childcare was necessary to support these women in their career development. Thus, in South Korea, “the burden of managing work-family conflict continues to fall heavily on families, with limited support from state policies to address these challenges” (Kim & Parish, 2020, p. 75). Although Korean women’s labour market participation has increased substantially over the years, women are still disproportionately responsible for household work. The labour force participation rate is 20 percentage points lower for women than for men, a difference that is about 25% larger than the average for high-income countries (Dynan, et al., 2022). This reliance on family assistance rather than active government intervention highlights the ongoing challenge faced by many families in juggling professional obligations with family responsibilities. Consequently, policy reforms in recent decades have focused on improving work–family balance, achieving only some success in addressing this challenge (Dynan et al., 2022). In response to the increase in mothers' rates of participation in education and paid work, feminists began to explicitly criticize these normative constructions, and called for more consideration of diversity and intersectional inequalities in mothers' experiences and challenges (Schmidt et al. 2023).

Widuri was sent to undertake her Master’s degree as part of her career development. At that time, she had two children; the youngest was eight months old. In order to ensure she could still perform her responsibility as a mother, she brought her children along. Her husband was working overseas and could only join her at a later date. Therefore, support from her parents for childcare was needed. The negotiations to combine her multiple roles were complex, highlighting the hard work that went into ensuring her family’s well-being was not compromised in her determination to progress.

I had to arrange for the whole family to join me when I did my Master’s. My husband was not willing to take care of the children by himself. He was still working and would only be able to join me halfway through my course. And I was also not willing to leave my children behind. So, there was the question of who’s going to take care of the children since they were still not in school. My parents had to step in and take turns to take

up the caregiving role, or else I would not be able to do this. I wasn't going to bring a helper because there's a lot of paperwork and what if she runs away when I leave her with the children? But it was a tough one year. My boss encouraged me to go for my PhD, but I don't think I can. I find studying after having a family difficult to manage and commit to. I was really struggling during that one year. (Widuri, mother of three)

For Alamanda, who was also sent to undertake her Master's degree, it was not possible to take her daughter along because of the lack of childcare support. At that time, her daughter was one and a half years old. Although her husband supported her career development, he did not want to sacrifice his own career to join her. She expressed her guilt in leaving her daughter behind but relied on intergenerational caregiving and so felt her daughter was in good hands.

Although my family and husband supported me, they couldn't join me. I understood because my husband also has his own career to think about. And since it was only a year, we decided that it would be all right for me to go on my own. My daughter would be cared for by my parents. But I had to make constant contact with them, as well as come back every university break to make it work. (Alamanda, mother of one)

Mawar negotiated and rearranged her life around her family responsibilities in pursuit of career development. She is a teacher by profession and chose an arrangement that allowed her to combine her family responsibilities with her career aspiration. By doing her PhD studies part-time, she has made a conscious effort to be present to tend to her children.

I wanted to pursue my career, so I decided to do my PhD part-time on my own through external mode from a university in Malaysia. I chose this so that I can still be here with my family and tend to my two children daily. I think my husband would let me go if I wanted to pursue this full-time, but I wasn't willing to leave the children behind. I don't think he can attend to them as well as I can. It does take quite a juggle since I

am also working full-time. When I need to go to university, I usually go during school breaks and bring the whole family along. (Mawar, mother of two)

Daisy, who has only high school education to date, believes that women should advance their careers.

I'm doing a night accounting course to upgrade myself. If I don't, I will be stuck in my post forever with no possibility to move up. I think it's important for woman to take opportunities to advance in their career if they are given the chance. (Daisy, mother of one)

Although these women acknowledge the difficulty in managing both mothering and paid work, they work to integrate these two spheres with strategies and negotiations to make it work. Despite the obstacles the participants faced, their desire for an identity other than a homemaker and for career development is emphasised by their further training and studies. Interestingly, when the researcher asked the women in her sample if their husbands have also undertaken further studies after starting a family and their career, only three said yes (these are husbands of Seroja, Begonia and Lotus). Begonia's husband pursued his PhD overseas. She did not join him, staying behind with her two children. Seroja's husband went to pursue his Master's degree; she took a year off work to bring the family along. Lotus' husband pursued his degree overseas and she took two years off from work to join him as well. According to Begonia, one reason for her reluctance to take unpaid leave to join her husband was the fact that her career development would be affected by the long leave. Seroja and Lotus have high school backgrounds and work as government clerks. During the interview, although both did feel women need to work, they were less concerned with career progression. Therefore, they felt comfortable with their decisions to join their husbands.

Although most women who did further studies said their husbands supported them, some said it did come with conditions, especially if it was overseas, and relocation of the family was required. In Lavender's case, her husband left his job to join her. The relocation meant Lavender is now the sole breadwinner for her family of three. She explained how the

traditional gendered divisions of labour remained despite the reversal of the breadwinning role. Despite her frustration with the arrangement, she accepted it as she saw the family's well-being was maintained by his decision to join her.

My husband left his job to join me. So, I was the breadwinner in the family. But I was also still doing most of the housework when I came home. You'd think since he spent all day at home things would get done. He acted like he was on holiday. But it was better that he was there or else my son would have been separated from his dad and me from my husband. (Lavender, mother of one)

In Widuri's case, her husband joined her overseas after he quit his job. She also became the sole breadwinner while maintaining primary responsibility for household tasks. Widuri accepted the arrangements as family well-being remained paramount.

Despite having my husband around when he joined us, I was still feeling very tired with all the housework. He did help but not to the extent of me coming home to a clean apartment and already cooked meal. But I guess it was worth it being able to have the family together. (Widuri, mother of three)

4.3 Navigating Guilt and Conflicting Responsibilities

Malay women today have experienced major changes in their careers, spurred by modernisation, urbanisation, technology, and education. However, unlike men, they are still bound by the responsibility of managing their households despite having a career, therefore facing various challenges (Hamid et al., 2023; Alqahtani, 2020; Mat Pozian et al., 2024). The unfortunate truth in the saying "As great as women are, they end up in the kitchen too", is still very frequently directed at highly educated and working Malay women (Hamid et al., 2023, pg. 2). Traditional Malay culture has historically emphasized that girls should be shaped into proficient housewives, encouraging them to dedicate themselves

fully to domestic responsibilities. This cultural pressure leads to a situation where success in a career is often undervalued unless accompanied by perceived success in familial roles.

Although most employed mothers expressed their desire to be engaged in paid work and to advance in their career, they carry quite a lot of guilt. Their aspirations to succeed usually meant taking valuable time away from their children. According to Glaser (2021), women feel more pressure related to this because they are punished more often and faster than men are (usually by those closest to them), leading to the use of the terms “good mum” and “bad mum”. The competing demands of both children and work are often a cause of distress to these mothers. Begonia, for instance, is actively engaged in out-of-office sales work in her pursuit of better financial standing for the family. She claims her husband’s and family’s approval to pursue this extra work was crucial in her decision. Although she sees that this activity is for the family and part of her mothering work, she still feels guilt about the extra time away from her children.

On top of my work at the office, I’m also involved in other work in sales and healthy life promotion, which earns me some extra income. It means I have to go to meetings at night and weekends. I do feel guilty leaving the children a lot, but I see this as something to secure their future. Before I embarked on this, I had to discuss it with my family and my husband. I am lucky to have their blessings. (Begonia, mother of two)

Daisy, who wants to secure a better financial future for her daughter, also runs a small business. The management of her side-income activity is done in out-of-office hours, taking more time away from her family. Engagement in paid work is again tied to mothering work as financial provider.

I have an online business on top of my full-time job. So even after work I’m busy with meeting customers and all. Sometimes I even have to drag my daughter and she will sit in the car. I feel bad for spending so much time on work but it’s for her own future. (Daisy, mother of one)

In Violet's line of work, she is required to travel abroad for meetings a few times a month. She explains that her division is quite small, consisting almost entirely of female staff. She expresses her guilt over the extra time away from her children:

I travel quite a lot in my work. Every time I go away, I feel guilty that I'm leaving my children even though it's just for a while. I wish I didn't have to sometimes. But it's quite difficult since there is only a handful of us in our division. And when someone is heavily pregnant or on maternity leave, those remaining have to cover. (Violet, mother of three)

Alamanda, who went abroad for a year in pursuit of her Master's, also expresses her guilt about leaving her child behind. Despite the effort she put into maintaining contact, and the support she received from her husband and family, her absence affected her need to mother her child personally.

When I went abroad to do my Master's, my daughter was only a year-plus old. So, it was not easy being away from your child as she was still young. You feel a lot of guilt especially when you can't be there when they need you, like when they are sick. I just wanted to finish quickly. I knew this was good for my career but sometimes you can't help but question if it's worth leaving your family behind. (Alamanda, mother of one)

Widuri agrees that conflict occurs after having children as work spills over to home time.

Sometimes when I can't clear my files at the office, I have to bring work home. And my children want me to play with them, but I have to turn them down. You feel bad doing that sometimes. (Widuri, mother of three)

It is not only the added time away after normal working hours that cause mothers' guilty feelings. Yasmine's guilt comes from the times when she missed several of her child's development milestones during her working hours.

You feel guilty missing the firsts stuff when you're at work. I mean I missed my child's first roll or first walk when she was a baby. For my husband, it's not a big deal if you miss the firsts but to me it's important.
(Yasmine, mother of two)

While the women talked about their guilt in relation to absence and additional time away, highlighting the tension and incompatibilities between motherhood and paid work, they also noted tensions caused by the incompatibility between spousal relations and paid work. Anggrek, with her highly demanding job and long work hours, finds her husband's lack of understanding stressful. As she enjoys her work, this lack of support that impacts on family time further heightens the conflict she faces daily.

My husband can't understand why I have to work until late or on weekends. He used to work as a manager at a car dealer and for him office hours mean an eight to five job. Nobody's going to call him in the middle of the night to ask for car parts. And he guilt-trips me for being so committed to my work. **(Anggrek, mother of two)**

Azalea claims her engagement with paid work and mothering leaves her very little time for her husband. In her account, she emphasises the importance of her role as a mother more than as a wife, as she tends to prioritise and allocate more time tending to her children's needs.

My husband complains that I don't spend enough time with him. But I can't help it. By the time I put the children to sleep at night, I'm usually very tired and fall asleep. So, I feel guilty for not being there for him. This is also one of the reasons why I moved from my first job. He was

more understanding of my job's demands before we got married.

(Azalea, mother of three)

Lily has experienced tensions in her marriage due to her husband's unsupportive attitude towards her work. She explained to me that her husband's job usually does not spill over to home time, and he expects the same for her. However, since Lily got a promotion at work, her workload has increased, taking up family time.

My husband said I am married to the job. I spend my weekends at times doing work as there is not enough time to finish them at the office. As he doesn't usually have to complete his work at home, he doesn't understand what I have to do. I know sometimes I don't spend as much time with my family as I would wish. You sometimes feel like you can never do right. There's always someone who will be disappointed in you. (Lily, mother of four)

4.4 Policy Support: What Women Want from Government and Employers

Scandinavian countries are recognized for their high levels of gender equality, which have been supported by comprehensive family policies that promote both sustained female labour force participation and relatively high and stable fertility rates. The continuous policy support for longer parental leave and guaranteed childcare provision have been the main drivers of women's ability to continue their engagement in paid employment after childbirth in these countries.

In contrast, many Asian nations have only begun to address family policy in response to demographic challenges, often failing to tackle the underlying gender equality issues. In the Asian region, the importance of family policy only started to emerge after the demographic challenges caused by low fertility rates. The failure of nations to address the underlying gender equality problems is one reason why these patterns persist. Gendered norms continue to influence policy design, as women still shoulder the primary

responsibilities of family and childcare. In a survey of 3,000 working mothers across South East Asian countries, 60 percent stated they struggle to manage both professional and personal commitments (Licas News, 2024).

A Polish and Swedish study has shown that socio-cultural context posed the biggest challenge for women's desired work-life balance (Kurowska, 2020). The study also reported a high level of gender difference as a key barrier encountered by women. Similarly, another study (Chung, 2020) demonstrated childcare to be a vital constraint for women. The provision of childcare remains patchy across Asia and the Pacific, with limited access, affordability and quality impacting women's participation in the workforce (International Labour Organisation, 2023a). In Brunei, the main policy supporting for mothers in employment is the provision of 105 days maternity leave. To date, no paternity leave has been introduced by the government. While most employed mothers were satisfied with the current maternity leave provisions, Alamanda argued for longer maternity leave to support mothering. She believes longer leave will have a positive impact on breastfeeding patterns and child development. Exclusive breastfeeding in Brunei remains low. According to the 2nd National Health and Nutritional Status Survey (NHANSS), only 26.2 percent of children were exclusively breastfed until six months of age (Norjidi, 2017).

Fully paid maternity leave if it can be extended to six months, would be great. So that mothers can continue breastfeeding. I believe this will increase their ability to reach the 6 months target in line with international guidelines. And the fact that mothers can spend more time with the child in infancy will be good for their development. (Alamanda, mother of one)

Another policy initiative related to breastfeeding is the provision of a proper room in offices for mothers to pump, mentioned by Anggrek.

Offices need to be equipped with a proper place for mothers to privately pump their milk. Having to do it under a desk, as I did, and some other

colleagues that I know that did it in the toilet or behind the door, is not very helpful. (Anggrek, mother of two)

4.5 Formal and Informal Support for Working Mothers: Exploring Unmet Needs and Challenges in Brunei

Another policy change Alamanda supports is the availability of childcare centres in workplaces. To date, only private childcare centres exist in Brunei. The demand for childcare centers in Brunei is rising, as many believe that children benefit from interacting with peers and being cared for by trained professionals. (Rahman, 2020). However most working parents are relying on intergenerational caregiving and immigrant workers to support caring work. Despite Iris's ability to tap into informal support through grandparents and an immigrant worker, she thinks ensuring good child development is important for mothers too.

I would also love to have a childcare centre at the office, even if it's a paid service, with some element of child development. The problem with helpers doing care work is that they only do the primary care mostly; they are not concerned with development as a mother would. (Iris, mother of two)

Begonia also voiced her support for a childcare centre at the workplace to support her role in breastfeeding. In line with her strong concern for child safety, she believes this will be a better arrangement, as it allows her to easily check up on the child.

A proper childcare service at the office would be great with CCTV installed. It would really give me the peace of mind that I have someone to look after my young children properly. And I can easily drop by to breastfeed. (Begonia, mother of two)

Others, like Anggrek, find the cost of raising a child quite high, particularly for her, as one of her children is autistic. Therefore, she needs to send him to a special private school,

which costs considerably more than a normal private school. She thinks supporting parents financially will increase the likelihood of parents having more children in Brunei, as the society puts a high value on them. As mentioned in Ahmad's (2018) study, a small family size is preferred by the new generation of young adults in Brunei, though the mothers in my sample did talk about bigger families. Ahmad's (2018) study implies a change in preference towards a smaller ideal family that in the long run will impact the demographic profile in Brunei.

A baby bonus would be nice, like what Singapore does. It takes quite a portion of your income to raise a child. And subsidies on baby stuff. I think it will work in Brunei. Because we love babies. I know it doesn't help much with Singapore's fertility rate. (Anggrek, mother of two)

"The high burden on parents caused by care justifies the demand and stresses the importance of comprehensive measures to address and improve the reconciliation of care and work" (Merkle, 2021, p.2). Violet and Azalea both want more flexible working hours to combine their mothering work and employment. Mothers' need for flexible hours is tied to their daily school runs, as mentioned by Lily. As Brunei children are required to attend two different schools, parents need to shuttle their children around daily. School usually ends during working hours and these women explain having to request permission to leave early on a daily basis can be quite difficult. This is another source of stress for some of the participants.

More flexible working hours would be great. Without my boss giving me the face every time I say I need to go out to do school runs. At the moment, my office is very strict about this. So, my husband does all of it. I'm lucky his work is flexible. If not, I don't know how we manage. But when he goes overseas for work trips, it gets quite difficult. (Violet, mother of three)

Supervised school buses for the children. The school run is a nightmare, especially when you have several children and they go to different schools and timing. (Lily, mother of four)

Flexible work hours would be nice. Not just for women but men as well. So, we can share the school runs and share the responsibilities. My husband's workplace is literally just a few minutes away from my children's school. But because his work is not very flexible, I have to do it. (Azalea, mother of three)

5.0 Policy Implication and Conclusion

In conclusion, the narratives of employed mothers in Brunei reveal the intricate dynamics and tensions between career aspirations, familial responsibilities, and gendered expectations. Drawing upon Bielby and Bielby's (1984) framework, which recognizes work as a crucial source of identity in adulthood, the findings underscore the complex interplay between occupation and family involvement for women. These women's commitment to work reflects a more profound desire for self-identity, economic independence, and professional recognition rather than solely being driven by financial necessity. Despite facing numerous challenges, including guilt, time constraints, and conflicting spousal expectations, these women demonstrate a strong desire to pursue career development and contribute to their families' well-being. Many of them have undertaken further studies or taken on additional responsibilities to advance their careers, often relying on family support, particularly from grandparents, to manage their dual roles. The narratives highlight the need for societal recognition and appreciation of women's contributions to the workforce and the family sphere. Women's aspirations for career advancement should be valued and supported without being overshadowed by traditional gender roles and expectations. Recognizing and addressing the guilt and tensions experienced by employed mothers is essential for creating a more inclusive and supportive environment for women in both the workplace and the home.

The findings also underscore the importance of family-friendly policies and supportive environments that enable women to balance their professional and caregiving responsibilities. While the country has made strides in supporting maternal employment through provisions such as maternity leave, notable gaps and areas for improvement remain. It is urgent that Brunei addresses these gaps and implement policies that promote

flexible work arrangements, financial assistance, and childcare support. This initiative is crucial to improving the well-being of working mothers, fostering gender equality in the workforce, and fostering the holistic development of families and communities.

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The Empirical Relationship Between Financial Knowledge and Financial Behaviour in Brunei Darussalam¹⁰

Redhuan Rajak

Abstract

This paper examines the relationship between financial knowledge and financial behaviour in Brunei Darussalam, using first a linear regression model to analyse financial behaviour as a whole and then a logit model for a deeper dive into the individual components of financial behaviour. Contemporary empirical research has found that individuals with higher levels of financial knowledge are more likely to engage in desirable financial behaviours, such as maintaining spending budgets, making sufficient savings, and using debt appropriately. Despite the extensive literature on financial knowledge and financial behaviour, there is little variation in the economic, social, and policy environments in which the relationship was studied. Brunei Darussalam is an interesting context to investigate the financial knowledge-behaviour relationship. It is a welfare-based economy where the government provides many life essentials to its citizens. As such, it can be hypothesised that households may not feel the need to practice sound financial behaviour regardless of their level of financial knowledge. This paper finds empirical evidence to support this hypothesis, though financial knowledge is still found to be a significant determinant of financial behaviour, and recommends a different policy response to what has been advocated by existing studies as well as what has been implemented by policymakers in Brunei Darussalam.

Keywords: *financial literacy, financial behaviour, financial knowledge, savings.*

¹⁰ CSPS acknowledges the Brunei Darussalam Central Bank (BDCB) as the commissioning authority and custodian of the 2022 Financial Literacy Survey data. The analysis and interpretations presented in this paper are solely those of the author and do not necessarily reflect the official views of BDCB or the National Financial Literacy Council (NFLC).

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1.0 Introduction

The relationship between financial knowledge and financial behaviour is well documented. Empirical research has found that individuals with higher levels of financial knowledge are more likely to engage in desirable financial behaviours, such as maintaining spending budgets, making sufficient savings, and using debt appropriately (Panjaitan et al., 2022; Singh et al., 2019). Meanwhile, theoretical research posits financial knowledge or literacy as a form of human capital investment that allows individuals access to more sophisticated financial assets with higher returns (Lusardi & Mitchell, 2014). Essentially, financial knowledge is considered an enabler that provides households with the capacity to practice better financial behaviours.

Financial behaviour is also linked to various demographic and socioeconomic factors. Studies have shown that factors such as gender, race, ethnicity, family influences, experiences, and economic socialization can impact financial behaviours (Alsemgeest, 2015; Robb & Woodyard, 2011). As much as possible, these factors need to be controlled for when studying the relationship between financial knowledge and financial behaviour. There are also differences in how objective and subjective financial knowledge impact financial behaviours where subjective financial knowledge is typically defined as one's confidence in the amount of financial knowledge they possess. It has been shown to be a strong correlate to various financial behaviours such as credit card usage and savings, often times stronger than objective measures of financial knowledge (Allgood & Walstad, 2013; Anderson et al., 2017; Lind et al., 2020).

Despite the extensive literature on financial knowledge and financial behaviour, there is little variation in the economic, social, and policy environments in which the relationship was studied. Most, if not all, previous studies based their analysis and findings on data from the US or similar western, market-based, and highly educated economies. This is likely because granular data on financial knowledge and financial behaviour are more readily available for these advanced countries. However, it is plausible that the relationship between financial knowledge and financial behaviours is context dependent.

Brunei Darussalam is an interesting context to investigate the financial knowledge-behaviour relationship. It is a welfare-based economy where the government provides a number of welfare benefits such as free healthcare, heavily subsidised housing, electricity, and fuel, and had previously provided a generous retirement scheme before making necessary reforms. Given that the government provides many life essentials to its citizens, it can be hypothesised that households may not feel the need to practice sound financial behaviour regardless of their level of financial knowledge. More specifically, because the government provides an implicit insurance to its citizens, it may inadvertently create moral hazard with respect to financial behaviours (Sandmo, 1995; Söderström, 1997).

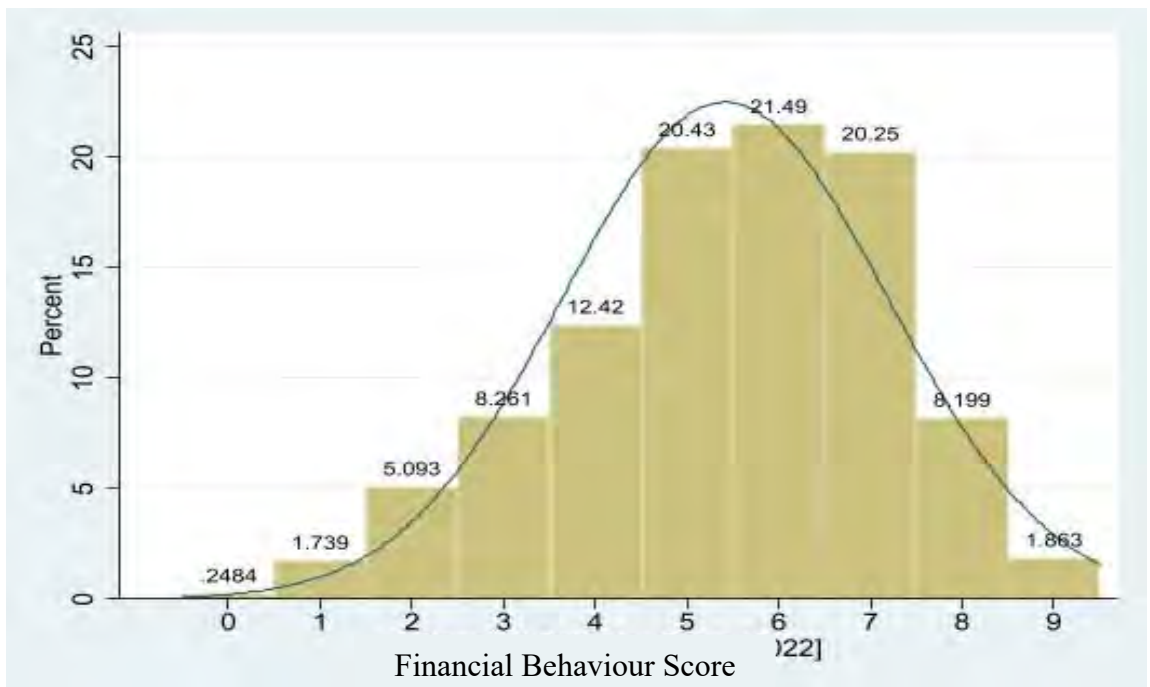
As such, while this paper expects the relationship between financial knowledge and behaviour to be significant, it hypothesises that there is still a large amount of variation in financial behaviour that financial knowledge cannot account for. This would necessitate different policy responses to what have been advocated by western-based studies.

2.0 Data Collection and Description

A nationally representative survey consisting of 1,610 respondents was conducted between September and October 2022 to measure the level of financial literacy of local adults in Brunei Darussalam. A specially designed questionnaire was formulated for the survey based on the 2022 OECD/International Network on Financial Education (OECD/INFE) Toolkit. In addition to financial literacy, the questionnaire also collected data on objective and subjective financial knowledge as well as a wide range of specific financial behaviours. A multistage stratified random sampling technique was used for the survey. The sample was firstly stratified by district but the two smallest districts (i.e. Tutong and Temburong) were oversampled to improve the precision of data from the two respective districts. A total of 100 clusters of neighbourhoods were selected for the sample. From each cluster, 16 households were randomly selected, and one adult was interviewed from each household. The 2022 OECD/INFE Toolkit measures the Financial Behaviour Index (FBI) as an aggregate measure of positive financial behaviours. It is computed as the total count of “financial savvy” behaviours including: (1) budgeting, (2) active saving, (3) avoiding

borrowing to make ends meet, (4) choosing products, (5) keeping watch on financial affairs, (6) striving to achieve goals, (7) making considered purchases, and (8) paying bills on time. FBI scores range from 0 to 9. The distribution of scores as presented in Figure 1 shows that the distribution is skewed to the right and has a modal value of 6. Running the Shapiro-Wilk test produces a test statistic of 0.986 and rejects the null hypothesis that the distribution is normal.

Figure 1: Distribution of financial behaviour scores



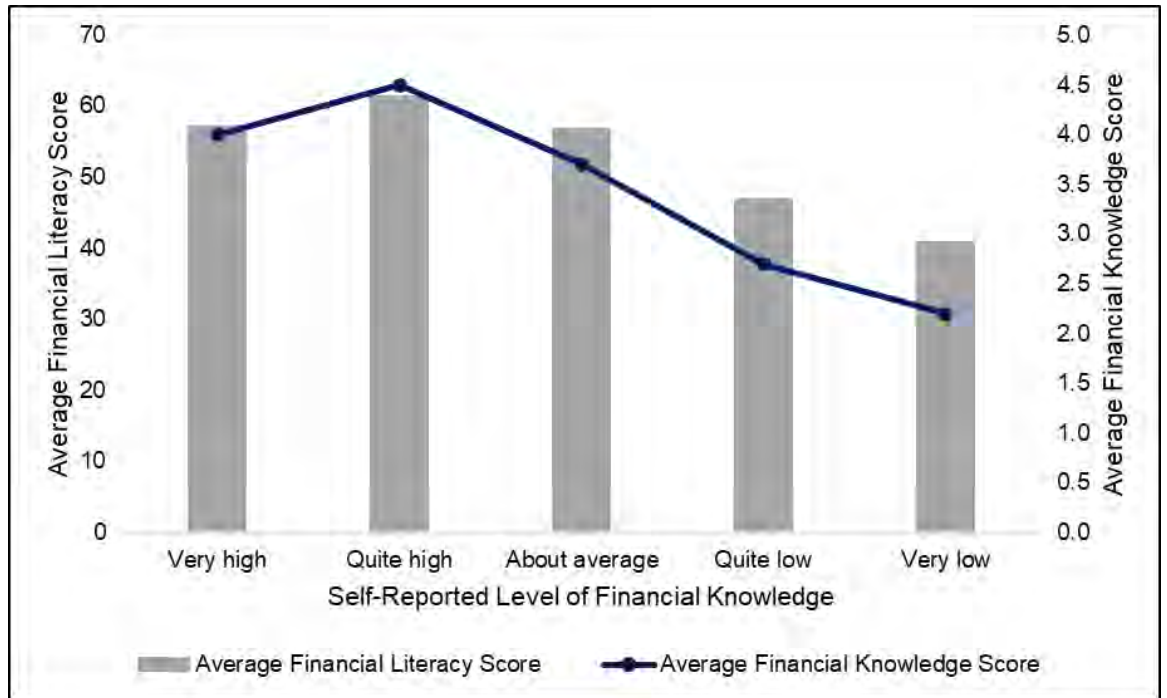
Objective financial knowledge on the other hand is measured by the Financial Knowledge Index (FKI). The FKI is determined by measuring the respondents' knowledge of seven basic financial concepts. These include: (1) the time value of money, (2) interest paid on a loan, (3) the calculation of interest, (4) compound interest, (5) risk and return, (6) the definition of inflation, and (7) risk diversification. A simple frequency count of correct answers to these questions yields the FKI score. The distribution of FKI scores is non-normally distributed as indicated by the Shapiro-Wilk test and has a modal value of 3.

Figure 2: Distribution of financial knowledge scores



Subjective financial knowledge was also captured in the survey by asking respondents to rate their level of financial knowledge on a 5-item scale ranging from very low to very high. Figure 3 plots the actual average financial literacy and knowledge scores for each level of self-reported financial knowledge. Those who rated themselves as having very high or quite high financial knowledge have similar financial literacy and knowledge scores as those that rate themselves about average. There are no statistically significant differences in their financial literacy or knowledge scores. On the other hand, those who rate their financial knowledge as quite low or very low have significantly lower financial literacy and knowledge scores. This suggests that, while respondents on the lower end can recognize when they are lacking in financial knowledge, respondents on the higher end have a tendency to overestimate their financial knowledge.

Figure 3: Self-reported level of financial knowledge vs actual financial literacy and knowledge scores



3.0 Methodology

This study investigates the relationship between financial behaviour and financial knowledge while controlling for demographic and socioeconomic variables that were found in the literature to be significant correlates to financial behaviour. For the analysis, the FBI will firstly be considered in its aggregate form (i.e. as an aggregated index). The analysis will then break down the FBI into 9 indicators to understand whether financial knowledge is more strongly related to certain types of desirable financial behaviours compared to others.

For the FBI in its aggregate form, a simple linear regression model will be utilised as follows:

$$FBI_i = \alpha + \beta_1 FKI_i + \sum_{j=1}^K \gamma_j control_{ji} + \epsilon_i$$

Where FKI_i is the financial knowledge index and $control_{ji}$ are the control variables. The control variables include gender, age, income, education, ethnicity, financial satisfaction, and financial attitude.

The analysis will use two slight variations of this linear regression model. The first variation replaces FKI, which is an objective measure of financial knowledge, with a subjective measure of financial knowledge. This is to differentiate the linkage between objective and subjective financial knowledge and financial behaviour. The second variation includes inserting both FKI and subjective financial knowledge into the regression model to see whether each is significant when controlling for the other variable. Subjective financial knowledge will be measured as a dummy variable equal to 1 for those who rate their financial knowledge as above average and 0 otherwise.

When analysing the 9 indicators of the FBI, a logit model will be used instead as each FBI indicator is a binary variable equal to 1 if the respondent exhibits a particular positive financial behaviour and 0 otherwise. The specification of the logit model will be similar to the linear regression model above.

4.0 Empirical Results:

	(1)	(2)	(3)	(4)	(5)
	FBI	FBI	FBI	FBI	FBI
FKI	0.298*** (13.268)		0.212*** (8.927)		0.167*** (6.885)
Above average financial knowledge		0.549*** (4.732)		0.287** (2.543)	0.170 (1.511)
Male			0.135 (1.534)	0.114 (1.284)	0.084 (0.959)
Age			-0.008** (-2.235)	*-0.009*** (-2.602)	-0.007* (-1.934)
Household income (\$600 - \$1200)			0.260 (1.607)	0.278* (1.785)	0.271* (1.736)
Household income (\$1201 - \$2000)			0.077 (0.462)	0.114 (0.693)	0.070 (0.427)
Household income (\$2001 - \$3000)			0.357** (2.124)	0.396** (2.336)	0.31* (1.846)
Household income (\$3001 - \$5000)			0.407** (2.408)	0.468*** (2.751)	0.335** (1.969)
Household income (More than \$5000)			0.235 (1.245)	0.338* (1.780)	0.143 (0.751)
Education level (VTE beyond secondary)			-0.106 (-0.879)	-0.109 (-0.874)	-0.085 (-0.694)
Education level (completed secondary)			-0.229* (-1.882)	-0.326*** (-2.610)	-0.247** (-1.992)
Education level (some secondary)			-0.118 (-0.733)	-0.062 (-0.396)	-0.005 (-0.033)
Education level (primary and below)			-0.626*** (-2.841)	-0.734*** (-3.166)	-0.533** (-2.348)
Ethnicity (Chinese)			-0.047 (0.293)	0.046 (0.270)	0.020 (0.119)
Ethnicity (other indigenous)			0.402 (1.161)	0.277 (0.844)	0.364 (1.085)
Ethnicity (others)			0.862*** (3.687)	0.614*** (2.734)	0.704*** (3.201)
Satisfied with finances			0.854*** (9.396)	0.872*** (9.479)	0.875*** (9.625)
Financial Attitude Index (FAI)			0.038 (0.730)	0.095* (1.821)	0.074 (1.426)
_cons	4.374*** (47.725)	5.474*** (111.341)	4.551*** (18.631)	5.314*** (23.843)	4.724*** (19.895)
Observations	1610	1423	1455	1311	1311
R-squared	0.102	0.011	0.175	0.124	0.155

T-statistics are in parentheses

*** $p < .01$, ** $p < .05$, * $p < .1$

Table 2: Variance inflation factor (VIF) of regressors

	Variance Inflation Factor
FKI	1.20
Above average financial knowledge	1.08
Male	1.04
Age	1.36
Household income	1.60
Education level	1.87
Ethnicity	1.09
Satisfied with finances	1.14
FAI	1.08

Table 3: Average marginal effects from logit regressions

	FKI (From Table A1)	Above average financial knowledge (From Table A2)	FKI (From Table A3)	Above average financial knowledge (Table A3)
Have household budget	0.047*** (7.292)	0.050 (1.247)	0.043*** (6.143)	0.018 (0.437)
Actively saves	0.038*** (7.100)	0.061*** (2.843)	0.031*** (5.696)	0.046* (1.896)
Does not borrow to make ends meet	0.010 (1.557)	0.000 (-0.008)	0.001 (0.147)	-0.001 (-0.027)
Chooses financial products after gathering information	0.028*** (4.983)	0.023 (0.669)	0.027*** (4.319)	0.007 (0.214)
Chooses financial products after using independent information	0.007 (0.999)	-0.081** (-1.997)	0.003 (0.371)	-0.083** (-2.036)
Keeps close watch on financial affairs	0.024*** (3.574)	0.122*** (3.778)	0.016** (2.278)	0.112*** (3.380)
Sets long term financial goals	0.039*** (5.763)	0.115*** (3.182)	0.032*** (4.577)	0.092** (2.442)
Makes considered purchases	0.029*** (4.419)	-0.026 (-0.697)	0.024*** (3.396)	-0.043 (-1.102)
Pays bills on time	0.016*** (2.585)	0.038 (1.048)	0.016** (2.411)	0.026 (0.701)
Control variables	YES	YES	YES	YES

Z-statistics are in parentheses

*** $p < .01$, ** $p < .05$, * $p < .1$

Table 1 presents the results from several linear regressions of FBI on objective and subjective financial knowledge. The first model regresses FBI on objective financial knowledge alone as measured by the FKI. The second model similarly regresses FBI on subjective financial knowledge only. The third model regresses FBI on objective financial knowledge and all control variables. Likewise, the fourth model regresses FBI on subjective financial knowledge and all control variables. The main purpose of the third and fourth model is to check whether there is omitted variable bias. Lastly, the fifth model regresses FBI on both objective and subjective financial knowledge as well as the control variables.

Considering the risk of autocorrelation, particularly for the fifth model which includes both objective and subjective financial knowledge, Table 2 reports the variance inflation factor (VIF) for each regressor. VIF values are less than two for all regressors, suggesting there is little correlation between the regressors and thus low risk of autocorrelation.

When regressing FBI on objective and subjective financial knowledge separately, both are positive and statistically significant at the 5% level even with the inclusion of the control variables. Looking at models 3 and 4, an increase in objective financial knowledge by 1 unit increases FBI by 0.212 units, whereas those who rate themselves as having above average financial knowledge score 0.287 points higher in their FBI compared to those who rate themselves as being average or below average. However, when both objective and subjective financial knowledge are included in the regression, only objective financial knowledge is statistically significant, implying that objective financial knowledge is what matters in determining good financial behaviour.

It should be noted that the linear regressions have low R-squared with the highest being 0.175 for model 3. Thus, there is still a lot of variation in financial behaviour that is still unexplained even with the control variables included. In addition, the coefficients on objective and subjective financial knowledge are quite small. Based on model 5, it appears that being more educated, earning a higher income, and having greater satisfaction with finances play a bigger role in driving good financial behaviour than financial knowledge. In the case of having greater satisfaction with one's finances, there may be a case of reverse causality where practicing better financial behaviour improves one's financial health and makes one feel more satisfied with their financial situation. Surprisingly, financial attitude is not significant in determining financial behaviour.

The overall results from the linear regressions suggest that objective financial knowledge plays a significant role in driving sound financial behaviour in Brunei Darussalam but it is likely not the most important determinant.

Table 2: **Variance inflation factor (VIF) of regressors**

	Variance Inflation Factor
FKI	1.20
Above average financial knowledge	1.08
Male	1.04
Age	1.36
Household income	1.60
Education level	1.87
Ethnicity	1.09
Satisfied with finances	1.14
FAI	1.08

Table 3 presents the average marginal effects for objective and subjective financial knowledge for all the logit regressions.

Objective financial knowledge is significant in predicting the likelihood of 7 out of the 9 desirable financial behaviours. These include having a household budget, actively saving, choosing a financial product after gathering information, keeping a close watch on financial affairs, setting long term financial goals, making considered purchases, and paying bills on time. The marginal effects are also positive, meaning that having greater objective financial knowledge increases the likelihood of observing these 7 desirable financial behaviours. The marginal effect of objective financial knowledge is largest for having a household budget, where a unit increase in objective financial knowledge increases the probability of having a household budget by 4.7 percentage points. Nevertheless, it is not significant in predicting the likelihood of not borrowing to make ends meet and choosing financial products after using independent information. In addition, the average marginal effects that are significant are not particularly large.

Subjective financial knowledge is significant in predicting 4 out of the 9 desirable financial behaviours. Those who rate themselves as having above average financial knowledge are more likely to be actively saving, to keep a close watch on their financial affairs, and to set long term financial goals. Interestingly, they are less likely to use independent information when choosing financial products, perhaps because they are confident in their financial knowledge and do not feel the need to use independent information when

making financial decisions. The largest average marginal effect is found for keeping a close eye on financial affairs and setting long term financial goals, where those who rate themselves as having above average financial knowledge have a 12.2 percentage point and 11.5 percentage point higher probability respectively of exhibiting these behaviours compared to those who rate themselves as average or below average.

When both objective and subjective financial knowledge are included in the logit regression, objective financial knowledge is able to significantly predict 7 out of the 9 desirable financial behaviours, as before, whereas subjective financial knowledge can only predict 4. On the one hand, only objective financial knowledge matters for the probability of having a household budget, gathering information when choosing a financial product, making considered purchases, and paying bills on time. On the other hand, only subjective financial knowledge matters for predicting whether someone uses independent information when choosing a financial product. Both matter in terms of actively saving, keeping a close watch on financial affairs and setting long-term financial goals.

The coefficients on the control variables also provide interesting insights. Males are significantly less likely to have a household budget and to be actively saving compared to females but are more likely to use independent information when choosing financial products. In terms of age, the older cohorts seem to exhibit worse financial behaviours as they are less likely to use independent information when choosing financial products and to set long term financial goals. Household income is also strongly correlated to several desirable financial behaviours.

Households in the highest income group (more than \$5000) are almost twice as likely to not have to borrow to make ends meet compared to households in the lowest income group (less than \$600). Interestingly, although not significant, households in the highest income group are much less likely to make considered purchases, perhaps because they can afford to be less careful in spending their money. Looking at educational levels also provides interesting insights. The least educated (having primary education or below) do not show many statistically significant differences in their financial behaviours compared to the most educated (having a university degree or above). The only statistically significant difference is the likelihood of paying bills on time where the least educated are 0.212 times less likely to pay their bills on time compared to the most educated. Having only completed secondary education is significantly but negatively correlated with the greatest number of desirable financial behaviours. Those who have only completed secondary education are less likely to have a household budget, choose financial products after gathering information, use independent information when selecting financial products, and pay their bills on time relative to the most educated even after controlling for their incomes.

With regards to ethnicity, Chinese respondents are less likely to have a household budget compared to Malays but are almost twice as likely to not borrow to make ends meet. Being satisfied with one's finances is one of the strongest correlates with several desirable financial behaviours with odd-ratios much higher than other variables considered, including financial knowledge. For example, those who are satisfied with their finances are 4.4 times more likely to keep a close watch on their financial affairs and are almost 3 times more likely to set long term financial goals and pay their bills on time compared to those who are not satisfied with their finances. However, as argued above, there may be a case of reverse causality. Lastly, in terms of financial attitudes, those who show better financial attitudes are more likely to gather information and use independent information when choosing a financial product as well as pay their bills on time.

5.0 Discussion

The empirical findings above provide strong statistical support for the assertion that financial knowledge influences financial behaviour. Those with higher objective and subjective financial knowledge have higher FBI scores and are more likely to practice desirable financial behaviours. However, the effects are small. An increase in the FKI score by 1 unit is only expected to increase the FBI score by 0.167 units (see model 5 in Table 1). For an individual in the lowest centile of FBI scores, it would not be enough to lift them into the next centile. As such, policies and programmes aimed at improving financial behaviour by improving financial knowledge should be rethought, especially given how intensive and time consuming these policies and programmes can be. Moreover, alternative channels to influence financial behaviour should be explored considering the weak, albeit significant, relationship between financial knowledge and financial behaviour. The empirical results also strongly suggest that objective financial knowledge matters more than subjective financial knowledge in determining sound financial behaviour. In the linear regression model (see Table 1), subjective financial knowledge becomes insignificant when regressed on FBI together with objective financial knowledge. Furthermore, subjective financial knowledge is only significant in predicting 4 out of 9 desirable financial behaviours, unlike objective financial knowledge, which is significant in predicting 7 desirable financial behaviours (see Table A3).

An important insight from the empirical analysis is that being satisfied with one's finances is strongly linked with sound financial behaviour. It has the largest coefficient in the linear regression model (see Table 1) and is the strongest predictor for various desirable financial behaviours (see Table A3). It can be argued that the causality is in reverse, but another potential explanation is that there is a virtuous cycle between being satisfied with one's finances and practicing good financial behaviour. It could be the case that having greater

satisfaction with one's finances encourages better financial behaviour, which further increases their satisfaction with their finances. The existence of such a virtuous cycle should be investigated further in future studies.

Another important insight from the empirical analysis is that having greater confidence in one's financial knowledge (i.e. having higher subjective financial knowledge) makes you significantly less likely to use independent information when choosing financial products. Whether this leads to better or worse financial outcomes is not touched on in this study. However, given that many studies in financial economics have found how overconfidence among financially sophisticated investors can lead to worse returns and riskier behaviours (Shiller, 2000), it is worth investigating whether overconfidence also undermines the financial outcomes of the typical household. In fact, understanding the factors that drive better financial outcomes among households is itself an important empirical exercise for further studies to consider. While a household may exhibit sound financial behaviour, this does not necessarily mean that they are optimizing their financial outcomes.

A final point regarding the empirical analysis is the amount of variation in financial behaviour that is still unexplained. Despite including a wide range of variables that were found to be significant in previous literature, the linear regressions used in the analysis produced a small R-squared and the area under the ROC curve (AUC) produced in the logit regressions was mostly below 0.7, the threshold typically used to identify whether a model is able to make predictions well. Even in the best performing models, roughly about 80% of the variation in financial behaviour is still left unexplained. This warrants further investigation. Given that financial knowledge can only explain a small fraction of financial behaviour, alternative channels should be explored to better understand how to influence and improve household's financial behaviours.

6.0 Conclusion

This study attempts to understand the relationship between financial knowledge and financial behaviour. While many prior studies have investigated this relationship, they predominantly took place in western, market-based, and highly-educated economies such as the US, where data is readily available. It is highly plausible that the financial knowledge-behaviour relationship is context dependent and an argument can be made that the findings from existing research are not externally valid.

To explore the relationship between financial knowledge and behaviour in a different context and to add to the existing knowledge base, this empirical analysis utilizes survey data from Brunei Darussalam – a small welfare-based, and resource-dependent economy.

The findings from this study suggest that the linkage between financial knowledge and behaviour is more tenuous than what has been found to be the case in western economies. While financial knowledge, both objective and subjective, is significant in predicting financial behaviour, the influence is small and there is still a large amount of variation in financial behaviour that is unexplained. This has important policy implications. If financial knowledge is not a strong channel through which to influence financial behaviour, education-based financial literacy programmes that aim to improve financial behaviour by improving financial knowledge need to be reconsidered. Policy makers could consider ways to strengthen the financial knowledge-financial behaviour relationship by providing education-based financial literacy programmes that have more practical and tangible outcomes. Policy makers could also consider influencing financial behaviour more directly. Behavioural nudges such as opt-out savings policies and auto-enrolment have been found to be powerful in influencing savings and good financial behaviour, though policy makers should be mindful of their unique context, particularly in Brunei Darussalam.

Further empirical studies should try to identify different and possibly stronger channels that can influence financial behaviour for welfare-based economies such as Brunei Darussalam. Theoretical models should be made flexible enough to take into account different economic and social structures in determining financial behaviour and to identify new channels that could be empirically tested. Future research should also try to understand the factors that influence actual financial outcomes and not just behaviour. In addition, given that the financial literacy survey is conducted every three years, later surveys should check whether the findings in this paper still hold and use actual financial behaviour where possible as opposed to self-reported financial behaviour.

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Appendix:

Table A1: Odds ratios from logit regression of nine desirable financial behaviours on objective financial knowledge with robust standard errors

Vars	FKI	Male	Age	Household income (\$600-\$1200)	Household income (\$1201-2000)	Household income (\$2001-\$3000)	Household income (\$3001-\$5000)	Household income (More than \$5000)	Education level (VTE beyond secondary)	Education level (completed secondary)	Education level (some secondary)	Education level (primary and below)	Ethnicity (Chinese)	Ethnicity (other indigenous)	Ethnicity (others)	Satisfied with finances	FAI	_cons	AUC
Have household budget	1.243*** (6.866)	0.776** (-2.176)	0.994 (-1.193)	1.139 (0.670)	1.304 (1.342)	1.471* (1.787)	1.611** (2.136)	1.266 (0.980)	0.732* (-1.820)	0.702** (-2.126)	0.548*** (-2.809)	0.560** (-2.051)	0.631** (-2.201)	1.003 (0.006)	1.948 (1.082)	1.387*** (2.645)	0.931 (-0.991)	1.211 (0.598)	0.676
Actively saves	1.390*** (6.941)	0.791 (-1.464)	0.990 (-1.568)	1.072 (0.285)	1.343 (1.115)	1.246 (0.777)	1.291 (0.873)	1.639 (1.405)	1.332 (1.191)	1.645** (2.086)	1.330 (1.015)	1.271 (0.693)	1.064 (0.201)	1.456 (0.800)	2.811 (0.883)	1.099 (0.567)	0.993 (-0.077)	2.443** (2.117)	0.696
Does not borrow to make ends meet	1.053 (1.556)	1.038 (0.303)	1.013*** (2.758)	1.303 (1.281)	1.624** (2.295)	1.334 (1.275)	1.588* (1.940)	1.979** (2.555)	0.898 (-0.590)	0.744 (-1.639)	1.027 (0.110)	0.499** (-2.316)	1.620* (1.826)	2.712* (1.920)	2.951 (1.493)	2.917*** (7.463)	1.040 (0.512)	0.570* (-1.718)	0.676
Chooses financial products after gathering information	1.203*** (4.926)	1.279* (1.715)	0.997 (-0.545)	0.870 (-0.510)	0.876 (-0.501)	1.155 (0.535)	1.236 (0.801)	1.443 (1.310)	0.742 (-1.598)	0.601*** (-2.653)	0.471*** (-2.615)	0.578 (-1.411)	0.854 (-0.604)	0.584 (-0.876)	0.326 (-1.019)	0.687** (-2.411)	1.177* (1.848)	0.141*** (-5.063)	0.685
Chooses financial products after using independent information	1.031 (0.998)	1.509*** (3.621)	0.985*** (-3.524)	1.194 (0.898)	1.064 (0.311)	1.200 (0.862)	1.360 (1.412)	1.179 (0.709)	0.674** (-2.479)	0.663*** (-2.617)	1.009 (0.043)	0.702 (-1.250)	0.916 (-0.422)	2.710*** (2.616)	4.085** (2.362)	0.889 (-0.990)	1.192** (2.472)	0.892 (-0.374)	0.632
Keeps close watch of financial affairs	1.133*** (3.506)	1.181 (1.353)	0.996 (-0.891)	1.104 (0.462)	0.674* (-1.863)	1.056 (0.232)	0.848 (-0.677)	0.638* (-1.732)	1.293 (1.381)	0.999 (-0.007)	1.295 (1.108)	1.115 (0.360)	1.558* (1.714)	1.138 (0.304)	1.017 (0.026)	4.298*** (9.516)	0.977 (-0.306)	1.150 (0.407)	0.702
Sets long term financial goals	1.199*** (5.534)	1.107 (0.870)	0.987*** (-2.748)	1.121 (0.574)	0.755 (-1.375)	1.542** (1.961)	1.174 (0.691)	1.112 (0.427)	0.997 (-0.018)	0.946 (-0.325)	0.879 (-0.592)	1.389 (1.118)	0.916 (-0.412)	0.490* (-1.824)	0.589 (-0.959)	2.671*** (7.408)	0.997 (-0.044)	1.032 (0.097)	0.688
Makes considered purchases	1.165*** (4.306)	1.170 (1.276)	1.000 (0.030)	0.872 (-0.643)	1.041 (0.181)	0.951 (-0.210)	0.941 (-0.254)	0.676 (-1.512)	1.372* (1.766)	1.398* (1.882)	1.584** (1.967)	1.059 (0.199)	0.794 (-1.090)	1.143 (0.309)	1.456 (0.585)	0.910 (-0.725)	0.883* (-1.737)	1.724* (1.678)	0.604
Pays bills on time	1.091** (2.575)	1.015 (0.116)	1.006 (1.154)	1.839*** (3.015)	1.403* (1.649)	1.768** (2.502)	1.786** (2.471)	1.682** (1.998)	0.811 (-1.108)	0.693** (-2.029)	0.610** (-2.136)	0.236*** (-4.628)	1.018 (0.071)	1.430 (0.853)	1.693 (0.655)	2.598*** (6.787)	1.274*** (3.026)	0.569* (-1.661)	0.699

Z-statistics are in parentheses

*** $p < .01$, ** $p < .05$, * $p < .1$

Table A2: Odds ratios from logit regression of nine desirable financial behaviours on subjective financial knowledge with robust standard errors

Vars	Above average financial knowledge	Male	Age	Household income (\$600-\$1200)	Household income (\$1201-2000)	Household income (\$2001-\$3000)	Household income (\$3001-\$5000)	Household income (More than \$5000)	Education level (VITE beyond secondary)	Education level (completed secondary)	Education level (some secondary)	Education level (primary and below)	Ethnicity (Chinese)	Ethnicity (other indigenous)	Ethnicity (others)	Satisfied with finances	FAI	_cons	AUC
Have household budget	1.260 (1.217)	0.801* (-1.818)	0.992* (-1.689)	1.120 (0.546)	1.353 (1.429)	1.653** (2.197)	1.770** (2.398)	1.417 (1.405)	0.672** (-2.242)	0.602*** (-2.917)	0.526*** (-2.842)	0.496** (-2.264)	0.609** (-2.174)	0.656 (-1.045)	1.505 (0.723)	1.450*** (2.856)	0.910 (-1.236)	3.102*** (3.557)	0.638
Actively saves	2.047** (2.269)	0.724* (-1.752)	0.987* (-1.832)	1.382 (1.164)	2.008** (2.300)	1.596 (1.487)	1.683* (1.659)	2.327** (2.283)	1.306 (1.037)	1.432 (1.387)	1.474 (1.206)	0.953 (-0.122)	1.351 (0.836)	1.578 (0.736)	1.939 (0.614)	1.017 (0.091)	1.096 (0.875)	6.038*** (4.182)	0.622
Does not borrow to make ends meet	0.998 (-0.008)	1.052 (0.380)	1.013** (2.424)	1.496* (1.736)	1.830** (2.557)	1.298 (1.058)	1.465 (1.470)	2.006** (2.443)	0.900 (-0.547)	0.764 (-1.379)	1.187 (0.634)	0.519* (-1.950)	1.972** (2.202)	2.244 (1.404)	2.562 (1.300)	3.130*** (7.070)	1.036 (0.429)	0.711 (-1.025)	0.681
Chooses financial products after gathering information	1.148 (0.686)	1.270 (1.640)	0.995 (-0.959)	0.736 (-1.067)	0.854 (-0.573)	1.157 (0.526)	1.354 (1.098)	1.588 (1.619)	0.724* (-1.701)	0.567*** (-2.856)	0.479** (-2.515)	0.618 (-1.243)	0.965 (-0.137)	0.580 (-0.886)	0.298 (-1.128)	0.695** (-2.273)	1.231** (2.334)	0.296*** (-3.291)	0.661
Chooses financial products after using independent information	0.704* (-1.951)	1.484*** (3.301)	0.987*** (-2.817)	1.087 (0.390)	1.004 (0.017)	1.124 (0.517)	1.261 (1.002)	1.136 (0.528)	0.684** (-2.285)	0.590*** (-3.153)	1.001 (0.005)	0.795 (-0.765)	1.039 (0.175)	2.500** (2.218)	3.707** (2.292)	0.908 (-0.765)	1.243*** (2.944)	0.969 (-0.102)	0.630
Keeps close watch of financial affairs	2.115*** (3.290)	1.122 (0.863)	0.993 (-1.277)	1.204 (0.770)	0.666* (-1.747)	1.134 (0.495)	0.908 (-0.369)	0.662 (-1.496)	1.396* (1.675)	1.066 (0.346)	1.515 (1.618)	1.077 (0.221)	1.691* (1.746)	1.100 (0.202)	0.866 (-0.237)	4.359*** (8.757)	1.032 (0.376)	1.690 (1.501)	0.703
Sets long term financial goals	1.769*** (2.970)	1.080 (0.618)	0.986*** (-2.795)	1.099 (0.432)	0.724 (-1.472)	1.592* (1.955)	1.420 (1.415)	1.294 (0.990)	1.065 (0.349)	0.896 (-0.609)	0.884 (-0.533)	0.961 (-0.123)	0.928 (-0.316)	0.499* (-1.682)	0.532 (-1.170)	2.568*** (6.683)	1.074 (0.943)	1.698 (1.643)	0.674
Makes considered purchases	0.869 (-0.714)	1.168 (1.162)	0.999 (-0.118)	0.886 (-0.494)	1.097 (0.369)	0.993 (-0.027)	0.978 (-0.083)	0.747 (-1.057)	1.410* (1.803)	1.334 (1.513)	1.670* (1.955)	1.107 (0.303)	0.885 (-0.513)	1.296 (0.491)	1.152 (0.212)	1.024 (0.166)	0.920 (-1.077)	2.923*** (3.129)	0.587
Pays bills on time	1.237 (1.016)	1.045 (0.326)	1.006 (1.078)	1.732** (2.463)	1.374 (1.403)	1.623** (1.989)	1.670** (2.044)	1.660* (1.847)	0.732 (-1.588)	0.615** (-2.562)	0.583** (-2.171)	0.193*** (-4.823)	1.030 (0.105)	1.685 (1.130)	1.601 (0.565)	2.865*** (6.857)	1.368*** (3.683)	0.721 (-0.957)	0.700

Z-statistics are in parentheses

*** $p < .01$, ** $p < .05$, * $p < .1$

Table A3: Likelihood ratios from logit regression of nine desirable financial behaviours on objective and subjective financial knowledge with robust standard errors

Vars	FKI	Above average financial knowledge	Male	Age	Household income (\$600-\$1200)	Household income (\$1201-2000)	Household income (\$2001-\$3000)	Household income (\$3001-\$5000)	Household income (More than \$5000)	Education level (VTE beyond secondary)	Education level (completed secondary)	Education level (some secondary)	Education level (primary and below)	Ethnicity (Chinese)	Ethnicity (other indigenous)	Ethnicity (others)	Satisfied with finances	FAI	_cons	AUC
Have household budget	1.224*** (5.867)	1.088 (0.434)	0.762** (-2.190)	0.994 (-1.101)	1.115 (0.515)	1.295 (1.200)	1.518* (1.783)	1.543* (1.777)	1.122 (0.453)	0.685** (-2.085)	0.653** (-2.382)	0.552*** (-2.577)	0.619 (-1.530)	0.580** (-2.404)	0.723 (-0.780)	1.750 (0.915)	1.481*** (2.962)	0.881 (-1.636)	1.578 (1.322)	0.667
Actively saves	1.363*** (5.689)	1.686 (1.626)	0.659** (-2.235)	0.992 (-1.110)	1.420 (1.232)	1.968** (2.192)	1.438 (1.134)	1.423 (1.081)	1.675 (1.354)	1.365 (1.186)	1.682* (1.916)	1.667 (1.558)	1.376 (0.769)	1.276 (0.652)	1.811 (0.960)	2.357 (0.737)	1.035 (0.180)	1.039 (0.362)	2.184 (1.623)	0.692
Does not borrow to make ends meet	1.005 (0.147)	0.994 (-0.027)	1.051 (0.369)	1.013** (2.431)	1.495* (1.735)	1.828** (2.548)	1.295 (1.046)	1.459 (1.437)	1.994** (2.402)	0.901 (-0.543)	0.766 (-1.364)	1.189 (0.640)	0.522* (-1.912)	1.970** (2.196)	2.250 (1.407)	2.570 (1.299)	3.130*** (7.067)	1.035 (0.419)	0.698 (-1.019)	0.681
Chooses financial products after gathering information	1.186*** (4.271)	1.044 (0.215)	1.243 (1.476)	0.997 (-0.603)	0.730 (-1.085)	0.817 (-0.733)	1.059 (0.205)	1.186 (0.618)	1.313 (0.947)	0.734 (-1.615)	0.610** (-2.465)	0.502** (-2.322)	0.759 (-0.713)	0.928 (-0.276)	0.623 (-0.760)	0.313 (-1.053)	0.691** (-2.296)	1.210** (2.108)	0.160*** (-4.556)	0.678
Chooses financial products after using independent information	1.012 (0.371)	0.698** (-1.987)	1.481*** (3.276)	0.987*** (-2.769)	1.086 (0.387)	1.001 (0.004)	1.117 (0.488)	1.249 (0.956)	1.121 (0.465)	0.686** (-2.273)	0.594*** (-3.105)	1.005 (0.024)	0.807 (-0.710)	1.037 (0.165)	2.517** (2.224)	3.728** (2.306)	0.908 (-0.763)	1.241*** (2.916)	0.929 (-0.224)	0.630
Keeps close watch of financial affairs	1.092** (2.255)	1.991*** (2.991)	1.099 (0.707)	0.994 (-1.076)	1.203 (0.767)	0.653* (-1.822)	1.093 (0.351)	0.846 (-0.628)	0.598* (-1.838)	1.416* (1.744)	1.111 (0.562)	1.571* (1.756)	1.207 (0.550)	1.656* (1.695)	1.137 (0.273)	0.907 (-0.154)	4.392*** (8.759)	1.019 (0.219)	1.249 (0.602)	0.707
Sets long term financial goals	1.168*** (4.447)	1.581** (2.325)	1.044 (0.344)	0.988** (-2.367)	1.095 (0.412)	0.691* (-1.667)	1.492* (1.673)	1.260 (0.915)	1.079 (0.289)	1.093 (0.486)	0.961 (-0.220)	0.928 (-0.319)	1.160 (0.456)	0.897 (-0.465)	0.535 (-1.507)	0.572 (-1.010)	2.626*** (6.742)	1.049 (0.630)	0.998 (-0.007)	0.687
Makes considered purchases	1.141*** (3.340)	0.794 (-1.144)	1.143 (0.998)	1.001 (0.211)	0.878 (-0.525)	1.060 (0.230)	0.925 (-0.293)	0.880 (-0.473)	0.636 (-1.583)	1.440* (1.899)	1.427* (1.829)	1.751** (2.126)	1.295 (0.759)	0.860 (-0.641)	1.369 (0.589)	1.225 (0.309)	1.028 (0.188)	0.901 (-1.324)	1.869* (1.738)	0.604
Pays bills on time	1.092** (2.399)	1.155 (0.687)	1.022 (0.164)	1.007 (1.312)	1.735** (2.456)	1.349 (1.318)	1.567* (1.828)	1.560* (1.751)	1.509 (1.481)	0.739 (-1.534)	0.636** (-2.349)	0.598** (-2.039)	0.212*** (-4.470)	1.017 (0.059)	1.763 (1.218)	1.700 (0.652)	2.882*** (6.853)	1.354*** (3.541)	0.527* (-1.749)	0.704

Z-statistics are in parentheses

*** $p < .01$, ** $p < .05$, * $p < .1$

Older Adult Workforce Participation and Population Ageing in Brunei Darussalam

Kartini Rahman & Sufrizul Husseini

Abstract

Brunei Darussalam is on track to becoming a super-aged society, with 21 percent of its population projected to be over 65 by 2050, posing socio-economic challenges such as rising healthcare demands, financial insecurity among retirees, and increasing living costs. This study examines the potential of raising the retirement age, based on data from the CSPS Brunei Barometer Survey 2023 and other empirical sources. The findings suggest that increasing the retirement age can enhance the financial independence of older adults, reduce reliance on family support, and lower long-term healthcare costs. Policy options include a phased retirement age increase, sector-specific flexibility, targeted reskilling initiatives, and structured re-employment programmes to keep older adults engaged in the workforce and adaptable to changing job market demands.

Keywords: *Retirement age, ageing population, financial security, labour productivity.*

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1.0 Introduction

Brunei Darussalam is poised to face a demographic transformation, with projections indicating that 21 percent of its population will be 65 or older by 2050, making it one of the fastest-ageing nations in Southeast Asia (OECD, 2020a; United Nations, 2022). This demographic shift poses socio-economic challenges, including increased dependency ratios, financial insecurity among older adults, and rising healthcare costs. These challenges may strain public resources, reduce economic productivity, and affect the quality of life for both older and working-age populations. As the country aspires to achieve the goals set out in *Wawasan Brunei 2035*, namely a high quality of life, a sustainable economy, and a skilled and accomplished populace, it is important to examine the potential repercussions of an ageing society.

Raising the retirement age has emerged as a policy strategy globally to manage the socio-economic impacts of population ageing. In Brunei, the retirement age was raised from 55 to 60 in 2012, but no subsequent plans have been formalised to further increase it in response to the accelerating pace of demographic change. Various countries have adopted incremental retirement age increases, complemented by re-employment policies, to improve financial independence for older adults, enhance labour force participation, and reduce fiscal pressure on public pensions and healthcare systems. Moreover, studies indicate that employing older workers can drive national productivity by leveraging their accumulated experience and expertise, while having little to no adverse impact on youth employment. By enabling older adults to remain active in the workforce, Brunei can reduce the economic dependency of its ageing population, alleviate the burden on public resources, and foster a more resilient and sustainable socio-economic framework.

This paper explores the potential socio-economic benefits of increasing Brunei's retirement age and presents options for a phased and contextually appropriate approach to implementation. Drawing on data from the CSPA Brunei Barometer Survey 2023 and other empirical studies, this research examines the impact of ageing on quality of life, cost of living, healthcare expenditure, labour productivity, and intergenerational dynamics. Policy

options highlight key areas of intervention, including reskilling and upskilling programmes, sector-specific retirement policies, and structured re-employment initiatives.

This paper aims to contribute to the policy discourse on population ageing in Brunei. The paper proceeds as follows: section two reviews the literature on ageing, section three presents the methodology used in this paper. Section four explains the analysis and findings based on the Barometer survey data and other empirical sources. Section five explains the policy options and concludes the paper.

2.0 Literature Review

The global shift towards ageing populations is one of the most significant demographic trends of the 21st century. According to the World Health Organization (WHO), by 2030, one in six people globally will be aged 60 or older, and the number of individuals aged 80 and above is expected to triple between 2020 and 2050. This demographic transition presents significant economic and social challenges, including increased dependency ratios, growing healthcare demands, and heightened fiscal pressure on pension systems (WHO, 2024). For Brunei Darussalam, the anticipated transition to a super-aged society by 2050 amplifies these concerns. The management of these demographic realities will have implications for the nation's aspirations for sustainable economic growth and a high quality of life, as outlined in *Wawasan Brunei 2035*.

The following sections detail a literature review of the primary facets of an ageing population and its policy responses: the relationship between demographic structures and productivity, raising retirement age as a policy response, the impact on youth unemployment and productivity, and case studies and international experience.

2.1 Demographics and Productivity

The Organisation for Economic Co-operation and Development's (OECD, 2020c) report on workforce composition, productivity, and pay examines how workforce demographics influences productivity and wage inequality across OECD countries, highlighting that demographic differences can explain productivity gaps across countries. The report further

highlights that low productivity growth coincides with rising inequality (ibid). Additionally, OECD's report on "promoting an age-inclusive workforce" (2020b) found evidence that older workers enhance team performance, showing productivity benefits of specific age groups. This demographic structure has been linked to productivity divergence and convergence across periods and geographic regions.

In a subsequent study, demographic ageing was shown to affect labour supply and GDP per capita (OECD, 2024a). The findings suggest that age composition shifts influence productivity and have implications for economic growth, particularly in nations experiencing rapid ageing. A study by Maestas et al. (2023) found that population ageing negatively impacts GDP per capita primarily due to reduced labour productivity and employment growth. Specifically, their findings indicate that a 10 percent increase in the proportion of the population aged 60 and older leads to a 5.5 percent decrease in GDP per capita growth, with two-thirds attributed to decreased labour productivity and one-third to lower employment rates.

2.2 Raising the Retirement Age as a Policy Response

Raising the retirement age has been widely regarded as an effective policy response to the economic challenges posed by an ageing population. It addresses two primary concerns: sustaining public pension systems and mitigating the fiscal burden of increasing healthcare and social security costs. According to the International Monetary Fund (IMF), delaying retirement can prolong workforce participation, enabling older adults to continue contributing economically while reducing the strain on public resources (Amaglobeli et al., 2020).

Pilipiec et al. (2021) conducted a systematic review examining the effects of increasing the retirement age and found that it generally enhances labour force participation among older adults while improving their financial security. However, the study also highlighted that the policy's impact on health and well-being can vary based on job types and the availability of supportive work environments. Similarly, Ardito (2021) explored the unequal effects of raising the retirement age and revealed that while such reforms often lead to higher

employment rates among older workers, they may also result in programme substitution, where individuals transition to other social programmes. This finding highlights the importance of a comprehensive approach to retirement age reforms to ensure that unintended consequences do not offset fiscal benefits.

The Organisation for Economic Co-operation and Development (2024b) also support raising the retirement age as an effective policy. In their working paper, the OECD emphasised that such reforms positively influence the employment rates of older individuals. They argue that aligning retirement age with increasing life expectancy can improve labour force participation and economic sustainability.

For Brunei, where retirement age reforms have been relatively limited since the increase from 55 to 60 in 2012, further incremental changes could be considered to align with international best practices while addressing local challenges. As highlighted by the OECD (2024b) and others, careful design and implementation of such reforms will be critical to maximizing their economic benefits while safeguarding the well-being of older workers.

2.3 Impact of Increasing Retirement Age on Youth Employment and Productivity

One of the most debated aspects of raising the retirement age is its potential impact on youth employment. Critics often argue that extending the working lives of older adults may limit job opportunities for younger workers. However, empirical evidence suggests otherwise. Bertoni & Brunello's (2021) study analyses the impact of pension reforms in Italy, finding that raising the retirement age led to a short-term decline in youth employment but had no significant long-term effects. Similarly, Chen & Desiderios' (2024) research finds that older workers do not crowd out younger workers in the long run. The evidence indicates that a policy to raise the retirement age should be implemented in conjunction with protective measures for the short-term effects of youth unemployment.

Brunei may face a dual challenge of improving labour productivity and managing talent shortages. A skills mismatch between employers' requirements and job seekers'

expectations has been identified as a critical factor in unemployment in CSPS research (CSPS, 2021). This is further emphasised in a study by Musa and Idris (2022), which underscores the talent shortages that the job market in the country is meeting with, as well as young people's lack of awareness of critical employability skills. The inclusion of older workers in the workforce can offer a strategic advantage.

Jasmin and Rahman (2021) examine whether the employment of older workers negatively impacts job opportunities for younger individuals. Contrary to the widespread belief that older and younger workers compete for the same jobs, their analysis indicates that elderly employment tends to have either no effect or a slightly positive effect on youth employment. They highlight international evidence showing complementary relationships due to differing skill sets and argue that supporting elderly employment through flexible working conditions and skill development policies benefits both age groups and enhances overall economic productivity.

A study by Mohnen (2025) examines the effects of a slowdown in retirements on the U.S. youth labour market between 1980 and 2017. By analysing variations in age composition across commuting zones, the research finds that areas with fewer retirements experience a decline in youth wages, reduced job mobility, and a shift of younger workers from high-skill to low-skill positions. These findings suggest that delayed retirements may hinder early-career development for younger workers, highlighting the need for policies that address generational labour market dynamics.

In summary, while concerns about the impact of raising the retirement age on youth employment persist, much of the empirical evidence suggests that extending the working lives of older adults does not necessarily limit opportunities for younger workers. Moreover, retaining older employees can enhance organisational productivity through effective knowledge transfer and mentorship. For Brunei, policies that encourage the participation of older workers could be instrumental in addressing labour market challenges.

2.4 Case studies and international experience

Countries worldwide are adopting diverse strategies to address the challenges posed by ageing populations. These strategies often involve reforms to retirement systems, workforce policies, and social protection frameworks, with the aim of mitigating fiscal pressures, sustaining economic growth, and promoting workforce inclusivity. Examining the experience of other countries provides valuable insights for Brunei as it navigates its own demographic transition.

China is set to implement its first retirement age reform in over four decades, incrementally raising the retirement age starting in 2025. This policy aims to address the growing old-age dependency ratio, which has been exacerbated by decades of the one-child policy and ensure a sustainable workforce. The reforms are projected to reduce fiscal pressure on the state pension system while encouraging older individuals to stay economically active (Financial Times, 2024). However, research by Cai and Cheng (2022) warns that such policies must be paired with complementary measures, such as skills retraining and workplace adaptation, to ensure that older workers can continue contributing effectively.

Spain has undergone extensive pension reforms, including raising the statutory retirement age to 67 by 2027. These reforms are part of a broader strategy to reduce fiscal pressures stemming from a rapidly ageing population.

Japan, one of the most aged societies globally, has implemented comprehensive measures to increase workforce participation among older adults. These include raising the retirement age, offering flexible work arrangements, and providing subsidies to companies that hire older workers. According to Kajitani (2025) report the number of employed individuals aged 65 and over grew by 160,000 in 2024, pushing their employment rate up to 25.7%. This reflects Japan's continued emphasis on integrating older workers into the labour force. The Japanese approach underscores the importance of fostering an age-inclusive workplace culture to maximise the benefits of extending working lives.

Within ASEAN, countries such as Singapore and Malaysia have also taken proactive measures to address the challenges of ageing populations. Singapore has implemented a re-employment framework that allows workers to remain in the workforce beyond the statutory retirement age under flexible terms. As part of this policy, employers are required to offer re-employment contracts to eligible employees up to the age of 68. Studies by Tan and Cher (2021) highlight the effectiveness of this framework in promoting financial independence and workplace inclusivity among older workers. Additionally, Singapore's Active Aging Programmes encourage lifelong learning and health maintenance, further enabling older adults to remain economically and socially engaged.

Malaysia has gradually raised its retirement age from 55 to 60 over the past decade and is considering further increases. According to Hamid et al. (2020), these reforms have been instrumental in extending workforce participation while easing fiscal pressures on the Employees Provident Fund (EPF). However, challenges such as inadequate retirement savings and unequal access to opportunities for older workers remain areas for improvement.

These international experiences offer insights for Brunei to address its ageing population. Adopting incremental increases in the retirement age, as seen in China and Spain, could provide a pathway for Brunei to align its social protection framework with demographic changes. Additionally, re-employment policies, like those in Singapore, could promote financial security and inclusivity for older workers while addressing labour shortages.

Tailoring these practices to Brunei's unique socio-economic context will be critical. For instance, policies could focus on ensuring workplace adaptability, promoting lifelong learning, and addressing potential inequalities in access to re-employment opportunities. By drawing on the successes and challenges of other nations, as well as incorporating research on ageing and retirement, Brunei can develop a comprehensive strategy to foster sustainable development while addressing the needs of its ageing population.

3.0 Methods

3.1 Study's approach and design

This study employs a mixed methods approach to analyse the socio-economic implications of raising the retirement age in Brunei Darussalam. The analysis is grounded in data from the CSPS Brunei Barometer Survey 2023, complemented by insights from international empirical studies and policy literature. The objective is to provide evidence-based recommendations tailored to Brunei's socio-economic context and aligned with the aspirations of Wawasan Brunei 2035.

The CSPS Brunei Barometer Survey 2023 serves as the primary data source for this study. Conducted between May and July 2023, the survey collected responses from 1,582 Brunei citizens and permanent residents, achieving a 98 percent confidence level and a 2.9 percent margin of error. Post-stratification weighting was applied to ensure that the results reflect the national population distribution. The resulting data set is utilised to examine key themes related to quality of life, cost of living, healthcare expenditure, labour productivity, and intergenerational dynamics, with a specific focus on respondents aged 55 and older (22.9% of the sample).

3.2 Key areas of analysis

The study examines the following critical dimensions, identified through the survey and policy literature. The findings are also reported in section 4 under the identified dimensions:

- 1) *Quality of life and financial security*: Assesses financial challenges faced by older adults, including cost-of-living pressures and retirement savings adequacy.
- 2) *Healthcare expenditure*: Analyses the fiscal implications of an aging population on healthcare costs and explores the potential benefits of extended workforce participation for reducing healthcare demand.

- 3) *Youth employment and labour market dynamics*: Evaluates the impact of retaining older workers on youth employment opportunities, leveraging international empirical evidence to address common concerns.
- 4) *Labour productivity and skills*: Investigates the contributions of older workers to economic productivity and assesses gaps in future-ready skills among the older population.

3.3 Secondary data and empirical studies

To complement the survey findings, the study incorporates secondary data from international organisations such as the World Health Organization (WHO), Organisation for Economic Co-operation and Development (OECD), and United Nations Population Division. Empirical studies on retirement age reforms from countries like Japan, Singapore, and Spain were reviewed to contextualise Brunei's challenges and identify best practices.

3.4 Analytical framework

The analysis employs a socio-economic resilience framework, focusing on:

- Enhancing financial independence and security among older adults.
- Balancing intergenerational equity in the labour market.
- Leveraging the productivity of older workers through targeted reskilling initiatives and inclusive employment policies.
- Addressing fiscal sustainability challenges posed by healthcare and pension systems.

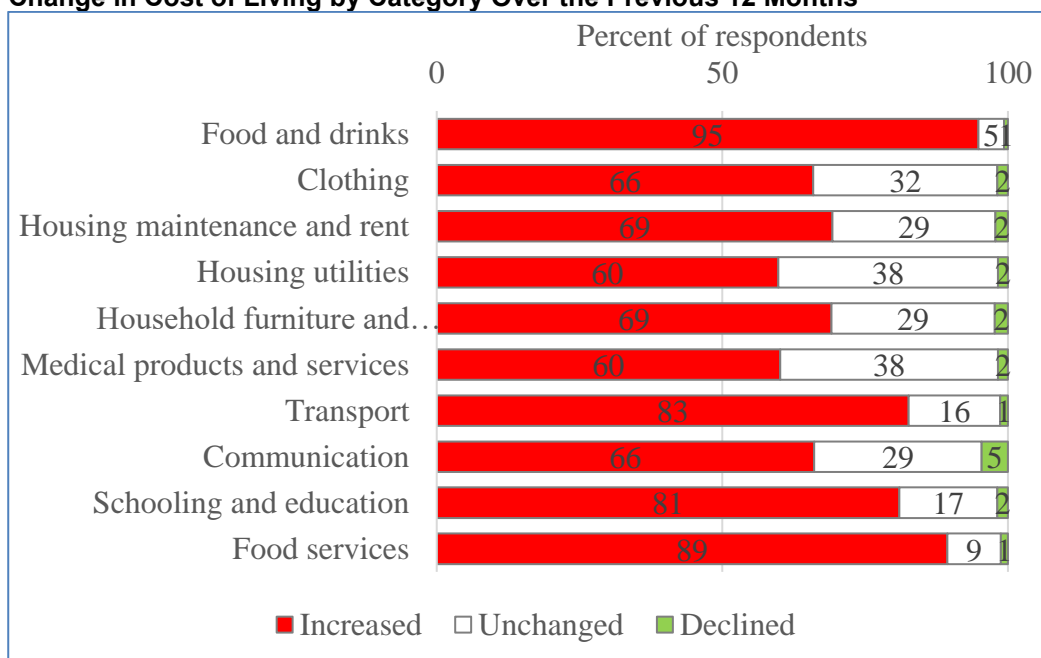
By integrating quantitative data with qualitative insights from the survey and global policy literature, the methodology ensures a holistic understanding of the implications of raising Brunei's retirement age. This approach provides a robust foundation for formulating policy recommendations.

4.0 Findings

4.1 Quality of life and rising costs of living

The findings from the Brunei Barometer Survey 2023 (henceforth known as the “Barometer 2023”) highlight significant financial and social challenges faced by the elderly population in Brunei. Older respondents, particularly those aged 60 and above, are disproportionately impacted by the rising cost of living. One in six respondents in this age group reported difficulty covering their daily expenses, compared to one in fourteen younger respondents under the age of 30. The financial insecurity of older adults is further exacerbated by their representation in the lowest income quintiles, with the majority earning less than BND 1,000 per month. This underscores the inadequacy of personal income to sustain a high quality of life, compounded by inflation and increased costs of essential goods and services, as shown in Figure 1.

Figure 1
Change in Cost of Living by Category Over the Previous 12 Months



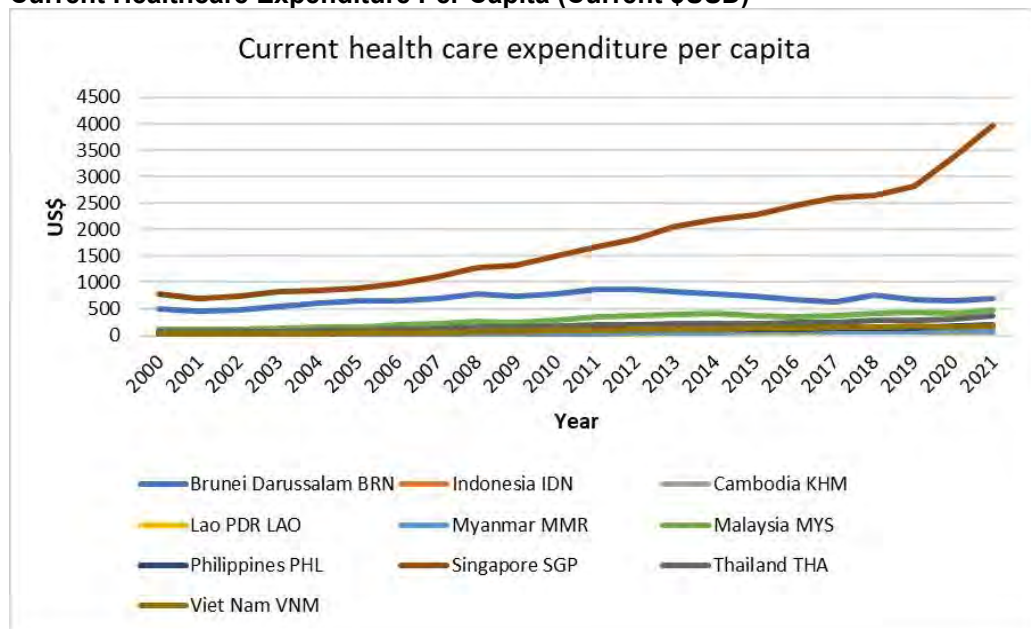
Source: CSPS Brunei Barometer Survey 2023

Furthermore, the Barometer 2023 findings show that consumer confidence declines with age, as older adults are less likely to make significant financial investments or save for the future. Additionally, more than half of Bruneians (55%) do not save for retirement, signalling widespread financial insecurity and a reliance on extended employment to manage living costs post-retirement. The inadequacy of household income to support the elderly population further highlights the vulnerability of informal care systems, which are often inconsistent and voluntary in nature.

4.2 Increasing healthcare expenditure

An ageing population contributes significantly to healthcare expenditure growth. This is a concern as Brunei has one of the highest per capita healthcare expenditures in ASEAN, a trend likely to continue as the older population grows. Ageing-related healthcare demands, such as long-term care services, acute care, and general medical needs, present a fiscal sustainability challenge. Figure 2 shows the current health care expenditure per capita from the World Health Organisation (WHO).

Figure 2
Current Healthcare Expenditure Per Capita (Current \$USD)



Source: World Health Organization Global Health Expenditure database (2024).

To overcome these challenges, evidence from international studies indicates that older adults benefit physically and mentally from extended working lives, potentially reducing long-term healthcare costs (Pilipiec et al., 2021; Sewdas et al., 2020). For instance, research has shown that working longer correlates with improved health outcomes, including regular physical activity and mental well-being (Pilipiec et al., 2021). Promoting healthy ageing through re-employment initiatives could mitigate healthcare costs while enabling older adults to contribute actively to the economy.

4.3 Impact on youth employment

A common concern with raising the retirement age is its potential to reduce youth employment opportunities. However, empirical evidence contradicts this perception. Studies indicate that retaining older workers does not crowd out younger workers; rather, economies that employ more older adults tend to exhibit higher youth employment rates. In Malaysia, for example, the employment of older adults aged 55–64 has had a positive or neutral effect on the employment rate of younger workers (Yasmin & Abdur Rahman, 2021).

In Brunei, based on the Barometer 2023 data, public opinion supports reduction of income inequality and promote equitable opportunities. Reform options that increase the retirement age, complemented by targeted re-employment programs, could align with these sentiments by fostering an inclusive labour market.

4.4 Labour productivity and future-ready skills

Older adults in Brunei represent an underutilised economic resource. Rahman and Husseini (2024) found that individuals in Brunei aged 50–59 positively impact productivity while younger cohorts aged 30–49 have a negative impact. The authors have suggested that this could be due to the accumulation of experience and expertise, and differences in the types of jobs and industries which contribute to the economy. Thus, increasing the retirement age can help leverage this "silver dividend," where the experience and skills of older workers

enhance economic output. This added productivity from older workers can be utilised for Brunei's economy and national development.

However, the findings from the Barometer 2023 survey data also indicate a gap in future-ready skills among Brunei's older population. Respondents over 60 scored significantly lower on metrics related to lifelong learning, digital literacy, and adaptability. These results do not negate the high productivity of older adults; rather they emphasise the absence of opportunities or access to pursue additional education and skills rooted in the internet, digitalisation, technology, and automation. Addressing these deficiencies through targeted reskilling and upskilling initiatives is critical to ensuring that older adults remain competitive in a rapidly evolving labour market. Structured re-employment programmes, combined with a focus on digital inclusion, can enable older workers to contribute meaningfully to the economy.

The findings reported in this section emphasise the option of raising Brunei's retirement age and supporting older adults through re-employment strategies, reskilling programmes, and healthcare initiatives. By addressing financial insecurity, healthcare costs, intergenerational equity, and productivity gaps, Brunei could manage the socio-economic impacts of an ageing population while fostering a sustainable and resilient economy.

5.0 Policy Options

The analyses show that addressing the socio-economic challenges of an ageing population requires a multifaceted approach. Based on the findings, the following potential pathways are developed:

5.1 Enhancing financial independence and security

Older adults in Brunei who face financial insecurity, struggle to meet living expenses and lack sufficient retirement savings. To address this, policies can focus on increasing the retirement age gradually and promoting re-employment opportunities for older adults. Extending working lives not only alleviates the financial burden on families but also enables older individuals to maintain their economic independence. Targeted programmes

to provide flexible part-time or contractual work arrangements can help balance financial security with personal choice and work-life flexibility.

5.2 Leveraging an experienced and productive workforce

The ageing population represents a valuable resource, particularly individuals aged 50–59, who significantly contribute to productivity due to their experience and expertise. Investment in automation and technology can complement older workers' strengths by mitigating physical and cognitive limitations and maximising their contributions.

5.3 Fostering intergenerational equity and youth employment

Evidence suggests that economies with higher employment rates among older workers also exhibit stronger job markets for younger cohorts. Reforms may focus on creating a balanced labour market where both older and younger workers have equitable opportunities. Initiatives such as mentorship programmes can facilitate knowledge transfer and foster collaboration between generations, enriching workforce development.

5.4 Promoting healthy ageing through extended workforce participation

Continued workforce participation has been linked to improved physical and mental health outcomes for older adults. Policies to support healthy ageing can prioritise health promotion, workplace mobility enhancements, and mental health support for older workers. Encouraging older adults to remain active in the workforce reduces long-term healthcare costs and fosters community participation.

5.5 Building future-ready skills and lifelong learning opportunities

The evolving nature of work, driven by digitalisation, necessitates reskilling and upskilling initiatives for older workers. Programmes providing access to lifelong learning opportunities, particularly in digital skills can be strengthened, to ensure that older adults remain competitive in a dynamic labour market. Partnerships with private sector

organisations can further facilitate training opportunities and digital inclusion for this demographic.

5.6 Sector-specific flexibility

A one-size-fits-all approach may not be suitable for Brunei's diverse workforce. Sector-specific flexibility, with more lenient retirement policies for physically demanding roles (e.g., construction, healthcare) and extended working options for less physically intensive fields (e.g., education, administration) can be an option.

5.7 Structured re-employment and phased retirement

An option for re-employment programmes is to formalise opportunities for retirees to re-enter the workforce under flexible conditions. Such programmes can include part-time advisory roles, consulting, and community engagement activities. Phased retirement policies, where employees reduce their working hours gradually as they approach retirement, can provide older workers with a smoother transition while continuing to contribute their expertise within organisations.

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ISSN: 2079-8660