Policy Paper

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The Links between Elite Conflict, Education Policies and Economic Complexity:

Analysis of the (Similar, yet Different) Developmental Trajectories of Mauritius & Singapore[1] [2]

By Nassim Hajouji

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Using education and elite configurations as the main variables of analysis, this Policy Paper aims to show how higher levels of popular sector incorporation[3] during elite conflicts, namely in the process of formulating and implementing policies related to education reforms, can negatively affect the economic complexity of developing countries. To do so, it analyzes the experiences of Mauritius and Singapore and links foundational political economy theories, particularly developmental state theory, Waldner's elite conflict paradigm (1999), and state-led innovation (Lee and Yoo, 2007), to economic complexity as an outcome. It essentially argues that popular sector incorporation and mobilization during elite conflict impedes on state-academia-industry coordination, which is a necessity for late developers to develop efficient networks of productive knowledge, conducive to achieving higher levels of economic complexity. [1] [2] [3]

1. This Policy Paper is based on a Master's dissertation originally submitted by the author to King's College London in 2021

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3. This concept was coined by Waldner (1999) to describe how competing visions over the state relations to the economy would thereby cause a situation where the elite, who could mobilize popular support would use this "social base," to align opposition accordingly to their stance. Waldner argues then that for economic development, elite conflict should be solved via compromise as opposed to by incorporating popular sector mobilization (hence the term 'popular sector incorporation'). Moreover, Waldner argues that popular incorporation should not precede economic institutions' policies but should come after its implementation. A more contemporary way to understand this term is to understand the practice as a form of populism (Rubin, 2003).

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POLICY PAPER

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I. INTRODUCTION

Starting with the notion that many developing countries in Africa face the challenge of overcoming the middle-income trap, it was observed that Mauritius is an outlier, being the only non-microstate within Africa to graduate to high-income status[4]. On the other hand, in Asia, and prior to Mauritius' achievement, the East Asian Tigers were the first set of developing countries to graduate to high-income status thanks to a process of 'compressed development' (Gill and Kharas, 2007; Whittaker et al, 2010). These East Asian economies are mostly islands, demonstrated in the literature as being developmental states with high levels of economic complexity (Evans, 1995; Haggard, 2018; The Growth Lab at Harvard University, 2019).

Within the East Asian Tiger cluster, Singapore is the most similar to Mauritius. Both share geographic, historical, economic, and political commonalities. They are high-income small island states with no abundance of natural resources, implying that they were subject to the same economic constraints that this configuration entailed during their respective growth paths (Auty, 2017: 264; Gani and Tan, 1998: 419). They also share similar historical trajectories, gaining independence from the United Kingdom in the late 1960s (Singapore in 1965; Mauritius in 1968). And politically, they both inherited Westminster-style parliamentary democracies at the outset of independence (Winstedt et al, 2021; Bowman, 2021).

Beyond high income status however, Mauritius has low economic complexity in terms of export content, whereas Singapore's is among the highest in the world—this indicator being a paramount measure of a country's productive knowledge and of growth prospects in the new globalization era. In this respect, and with the attributes of the developmental state in mind, it was predicted that the state's role in enhancing human capital would be a major variable related to capability accumulation conducive to greater aggregate productive know-how of the labor force and economic complexity, in accordance also with Gershenkron's (1962) seminal argument that the more 'backwards' a country is, the more state intervention is needed to catch up. To measure this, quantitative trends, and descriptive statistics regarding education expenditures were collected, coupled with a comparative historical analysis of education reforms through the prism of Waldner's framework. The results indicate that greater popular incorporation during elite conflict impedes state-academia-industry coordination, which in turn makes it less likely economic complexity will be achieved, though it is considered a developmental necessity[5] for late developers with no abundance of natural resources in an ever more globalized and competitive environment.

1.1. Brief Overview of the Literature

This paper uses, as its basis, numerous theories and concepts from political economy and development literature, namely developmental state theory (Johnson 1982; Haggard, 2018), economic complexity (Hausmann and Hidalgo, 2009), and tri-lateral networks of dirigiste states conducive to state-led innovation (Lee and Yoo, 2007).

The concept of the Developmental State, for instance, was formulated by Chalmers Johnson in 1982 from observations of how state intervention in Japan led to economic success, contradicting therewith the assumptions of the liberal free market model. Stephen Haggard (2018) developed this concept by looking at countries such as Singapore, while others such as Whittaker et al (2010)

4. The first and only African country to graduate to high income, prior to Mauritius, was Seychelles, a small island microstate with a population of approximately 100,000 (Worldometers, 2022) with services (mainly tourism) accounting for 70% average of the economy (O'Neil, 2021).

5. The term 'necessity' is used here as the authors of the concept Hausmann and Hidalgo found a positive correlation between income levels and economic complexity, and on this basis, predictions can be made about the future growth of a country by looking at the available capabilities at a given point of time relative to the growth aspired to (2009: 5).

developed ideas such as the 'adaptive state', the 'flexible developmental state' and 'compressed development', referring to industrial policies and the role of the state for 'late late developers' embedded in global production networks. A key recurring theme across successful cases of developmental states is the role of a politically insulated bureaucracy able to allocate resources to the improvement of human capital, and with the capacity for efficient coordination and execution of industrial policies.

The developmental-state concept can be situated within the state intervention versus free market debate, to which Waldner (1999) made a seminal contribution. In Institutional Origins & Economic Outcomes, Waldner addressed the question of why state-building and state intervention sometimes leads to economic development, whereas in other instances, it "derails it" (p.2). With state institutions as independent variables and economic outcomes as dependent variables, Waldner compares the economic trajectory of Syria and Turkey to Korea and Taiwan (p.1). In doing so, Waldner argued that the way elites aligned interests with goals differed for the analyzed cases, with elites in Turkey and Syria using popular sector incorporation and mobilization amid elite conflicts to resolve contentious political issues, whereas elites in Korea and Taiwan were relatively more cohesive and excluded popular sector mobilization from their decision-making amid collective action dilemmas (p.2). In other words, Waldner demonstrated that during collective action issues in Turkey and Syria, elite conflict with popular sector mobilization led to coalition-forming that was counterproductive for upgrading economic performance[6], unlike Korea's and Taiwan's more dynamic coalition strategies, which paved the way for creation of the developmental state. In other words, and as described, popular incorporation came after development of economic institutions and related policies, as Korea and Taiwan were not 'indebted' to the people amid the transformation process (p.2).[7]

The middle-income trap and the developmental state theory converge in the fact that the country cases that have been identified as developmental states in the literature (Johnson, 1982; Evans, 1992; Haggard, 2018) happen to also be those identified as having escaped the middle-income trap relatively early and having transitioned to high-income status, according to Gill and Kharas (2006). Since for Gill and Kharas escaping the middle-income trap requires transitioning to higher value-added products to avoid stagnation, a useful indicator of the productive capabilities of a state, which would enable this said transition, is the Economic Complexity Index (ECI). The link between this concept and those described above can be made through the observation that many former middle-income countries that transitioned to high income did so thanks to the greater complexity of their products. This allowed them to avoid the trap because continued technology upgrades, enhanced with strong capability networks, prevented them from experiencing the stagnation faced by many countries that capitalized on low-wage comparative advantages. While Hidalgo and Haussmann's (2009) contribution, in the 'Building Blocks of Economic Complexity', is substantial, the authors acknowledged the limitation of their work in relation to understanding the capability accumulation process (p.14), which is what this paper aims to do.

Finally, on the related topic of Varieties of Capitalism, which splits markets between coordinated market economies and liberal market economies (Hall and Soskice, 2011), Lee & Yoo (2007) contributed to the literature on one of its variants, Dirigiste States, particularly through a comparison of the policies and trajectories of South Korea and France vis-à-vis their relation to radical innovation, which is an important and relevant indicator to this paper, as it can be linked to greater economic complexity. This literature brings out a tripartite alliance, or coordination, between the state, academia, and firms of the analyzed dirigiste states. For example, France has

6. In his work, Waldner refers to the outcome for Turkey and Syria as a *"precocious Keynesian state"* to be precise.

7. As Waldner notes, popular sector mobilization did not occur in Taiwan where elite-conflict was "manageable", while in Korea, the elites would adhere to General Park Chung Hee's orientations regarding state relations with the economy (1999, p. 4).

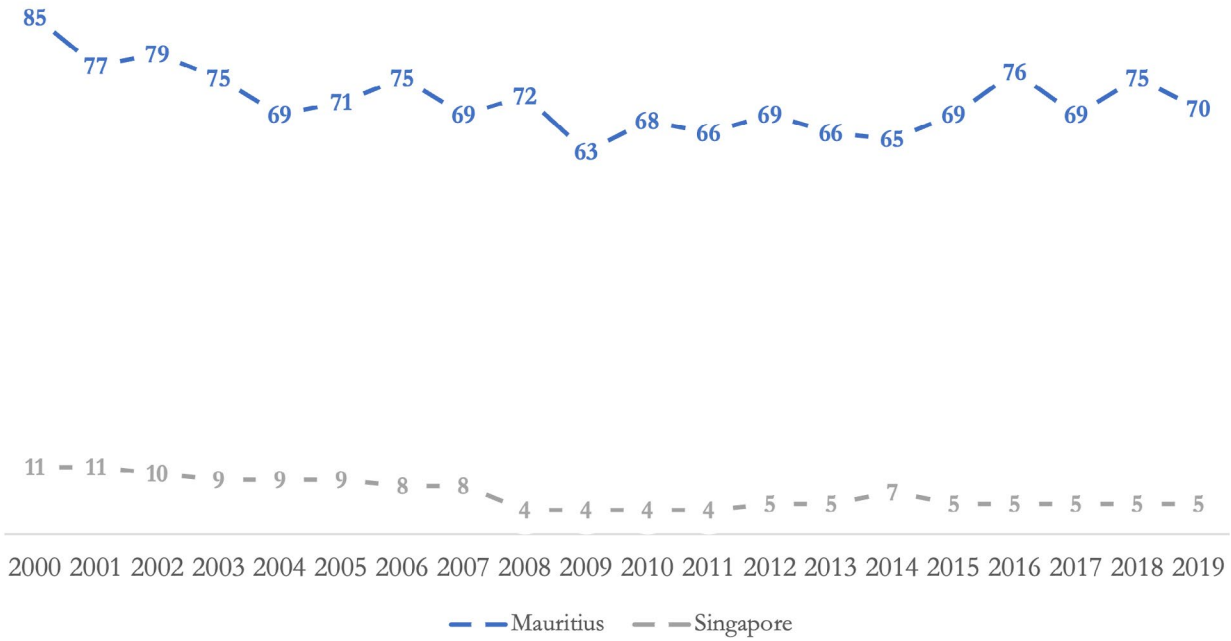
a significant number of agreements between laboratories, national centers for scientific research, and commercial firms, which increased tenfold from 1984 to 1996 (Lee and Yoo, 2007: 455). Thus, the contradictions where one system demands marked oriented institutional changes, whereas the other is for state initiatives, leads to the trilateral networks between state, academia, and industry (ibid). This trilateral alliance and coordination between universities, public research centers, and the government has made France a leader in life sciences, nuclear energy, and space, ranking fourth after the United States, Japan, and Germany (ibid: 457). In terms of economic complexity rankings, France ranks 19th (2019), compared to South Korea in 4th place in the same year (The Growth Lab at Harvard University, 2019).

Thus, the East Asian Tigers tend to recur as success stories in developmental state theory, middle income trap theory, and economic complexity theory. Where does Africa fit in? Countries including Nigeria and South Africa have large economies (with South Africa part of the emerging BRICS group of Brazil, Russia, India, China, and South Africa), but Mauritius has surpassed them by becoming the first non-microstate in Africa to transition to high-income status according to World Bank criteria. Yet, Mauritius appears to be much behind the tigers in terms of economic complexity.

II. ECONOMIC COMPLEXITY OF MAURITIUS & SINGAPORE

Figure 1:

Economic Complexity Rankings of Mauritius and Singapore



Source: The Growth Lab at Harvard University (2019).

Figure 1 shows the rankings of both countries over time in the Harvard Atlas ECI, from 2000 to 2019. The full index is comprised of 133 countries, placing Mauritius in the middle, alongside upper middle-income Dominican Republic (69th), lower middle-income Moldova (68th), and lower middle-income Egypt (67th) in 2019. Singapore, on the other hand, is alongside fellow East Asian Tigers South Korea (4th) and Japan (1st), and other advanced high-income countries including Austria (7th) and Germany (3rd).

Moreover, between 1980 and 1998, both countries had close numbers with respect to exported manufactures at around 14.8% for Mauritius and 15.4% for Singapore (Wignaraja, 2002: 93), an indicator of the export-oriented industrial model they both adopted. But recent data shows great technological developments for Singapore in complexity of exports, whereas most of Mauritius' exports score relatively lower in product complexity. In fact, 1998 data from the Harvard ECI shows that, for Mauritius, garments (e.g., sweaters, men's suits and pants, t-shirts, shirts, etc.) accounted for almost one third of exports, and sugarcane accounted for 14%, both being low-complexity products (The Growth Lab at Harvard University, 2019). On the other hand, the same year data shows that for Singapore, 17% of exports were from computers manufactured, 9% from electronic integrated sectors (high-complexity products), whereas textiles accounted for less than 1%.

The Growth Lab at Harvard (2019) also gives different products ranks and product complexity indices (Table 1). This classification, covering 1224 types of products, may be used to convey the productive knowledge required to make a product by assessing, among other factors, the number of countries able to produce a given product. For instance, optical products are ranked high and have a high index score, implying they are high-complexity non-ubiquitous products, whereas wearing apparel is ranked much lower, implying it can easily be manufactured in a greater number of countries due to low productive knowledge required in its production.

Table 1:

Insights from the Product Complexity Index

SECTOR/PRODUCT	RANK	INDEX	COMPLEXITY LEVELS
Food	431	0.513	Medium Complexity
Textile/Fabrics	420	0.544	Medium Complexity
Wearing Apparel	790	-0.357	Low Complexity
Leather Products & Footwear	402	0.584	Medium Complexity
Wood and paper products	248	0.886	Medium Complexity
Optical goods	109	1.25	High Complexity
Electronic watches & clocks	414	0.554	Medium Complexity
Electric and electronic products	62	1.5	High Complexity

Source : https://atlas.cid.harvard.edu/rankings/product/2018

This paper intuitively uses the ranking and index to codify the complexity level of each product. As such, those with an index above 1 are high complexity; those between 0.5-1.0 are medium complexity; and less than 0.5 is low complexity based on the sample.

Taking into consideration the figures in appendices 1 to 5, which look at employment levels by product category for both countries, it is clear that Singapore has more aggregate know-how than Mauritius, as shown by employment by product category, based on the coding in Table 1. These findings are complementary to the ECI and confirm its robustness by cross checking with government primary data and by revealing that Mauritius does indeed have higher levels of employment in low and medium-complexity products (e.g., wearing apparel and textiles – appendices 1 to 3), whereas Singapore has significantly higher numbers in high complexity products including computers, electronics, and optical products (appendices 4 and 5).

III. PUBLIC INVESTMENTS IN HUMAN CAPITAL

Considering the above, and under the presumption that both Mauritius and Singapore are developmental states, a series of steering questions emerges: to what extent do state policies and investment in human capital via tertiary education and vocational training expenditures contribute to greater economic complexity? What types of education reforms are conducive to economic complexity? And finally, to what extent does stronger state coordination contribute to economic complexity?

Our research shows that Singapore invested more than Mauritius in human capital throughout the assessed period (1999-2015), both in terms of share of expenditures going to education at large and even more pronounced for the share of education expenditures going to the tertiary sector. In fact, the share of total public expenditures going to the Ministry of Education was on average 13.34% for Mauritius against 24.17% for Singapore from 2000 to 2013 (appendix 6). For tertiary education, the average for Mauritius was 10.15% disbursed to tertiary education, whereas for Singapore it was three times this figure, with 32.87% from 2000 to 2015 (appendix 7). This was on par with the prediction of this paper since complex manufacturing activities with high economic complexity (e.g., biotechnologies, semiconductors, etc.) require a certain extent of know-how that can be acquired through technical training and tertiary-level education, and the state can play a facilitating role by allocating resources to relevant sectors accordingly to achieve this goal.

In addition, we predicted that technical and vocational training would also be of great importance to achieve a complex aggregate productive know-how network and suggested that Singapore would have greater investments in this regard, since it historically encouraged technical subjects (Gani and Tan, 1998). Indeed, despite being correct with Mauritius having a 2.82% average against a 3.12% average for Singapore in shares of public education expenditures allocated to technical and vocational training (appendix 8), this represents a much smaller margin of difference than the tertiary-sector difference. As such, investment in tertiary education may have a more significant impact in inducing greater aggregate know-how.

Nevertheless, in the 'Secrets of Economic Growth' presentation by Ricardo Haussmann at the World Economic Forum in 2015, the trajectories of Ghana and Thailand are compared by looking at investments in education starting from 1962. Ghana had greater expenditures, but by 2010, it had diversified only slightly whereas Thailand completely transformed its export content (producing electronics, cars, trucks, chemicals, etc.) and overall economic complexity, making it four and a half times richer than Ghana (World Economic Forum, 2015). As such, what these quantitative trends indicate is that while Singapore does invest more in education, this indicator is seldom sufficient for implying causal inference. We therefore explored education reforms and the process through which they are implemented and formulated, to provide a more analytical and robust account.

IV. COMPARATIVE OVERVIEW OF EDUCATION REFORMS & POPULAR SECTOR INCORPORATION DURING ELITE CONFLICTS

In analyzing education reforms and the process through which policies were formulated, it was concluded that greater popular support incorporation during elite conflict, in accordance with Waldner (1999), prevented Mauritius from becoming a developmental state with high economic complexity. In other words, elite conflict impeded the state-academia-industry coordination capacity of Mauritius, leading to a skills mismatch, whereas Singapore displays high levels of efficient coordination thanks to its single-party cohesive developmental state and meritocratic bureaucracies, which efficiently formulate and execute education reforms.

Indeed, Waldner's argument is that popular sector incorporation to resolve collective action dilemmas and conflicts between political elites, leads to counterproductive economic outcomes (p. 4). The rationale is that economic policies become the result of ideology and politics when they should rather be technocratic in nature to be efficient in the development phase. We argue that this premise can additionally be applied to education reforms. Further, in relation to the findings of Lee and Yoo (2007) on the role of trilateral coordination in state-led innovation, is the idea that the capacity to coordinate may be hindered by elite conflict. As such, analyzing the role of the state is important to since one of the premises of this paper, and in accordance with Gerschenkron (1962) and Whittaker et al (2010), is that for late developers, greater state level intervention and coordination in the economy is essential for positive economic outcomes. And beyond the transition to high-income status, levels of economic complexity are also an indicator of growth potential, particularly in the age of globalization.

4.1. The Three Reforms

Here, we briefly outline three major reforms to the Mauritius and Singapore education systems, their objectives, and the outcomes achieved.

Pivotal reforms of both countries can be separated into three for both cases. For Mauritius, there was: (1) the 1984 Asian language introduction; (2) the 1990 Master Plan; and (3) the 1997 White Paper on Pre-Primary, Primary and Secondary Education (WPPSE) (Bunwaree et al, 2007: 161-163). On the other hand, Singapore's major reforms included: (1) post-independence survival; (2) the 'efficiency stage'; and (3) the Thinking Schools, Learning Nation (TSLN) stage (Tan, 2008).

For Mauritius, the first attempted reform started in 1984, when the introduction of Asian languages was proposed. This was highly popular for Mauritians of Indian and Chinese descent, as it would allow them to learn a language with cultural significance (Bunwaree et al, 2007: 161). In this respect, Parliamentary committee hearings were held publicly, and a civic network participatory process was initiated (ibid: 158-161). This reform, however, did not amount to a concrete policy implementation because of political contention related to language use and was postponed to the 1990s. On the other hand, the first major educational reform in Singapore was one described as "post-independence survival" by Tan (2008), whereby 'moral education' was coupled with technical and vocational education (p. 114). This reform was not linked to obtaining the votes of certain ethnic constituencies, but rather to Singapore's recognition of the priority of investing in human capital, because of the smallness of the state and lack of abundant natural resources, while simultaneously maintaining social stability through moral education.[8] The survival phase for Singapore lasted from 1958 to 1978 (ibid). In this context, and under the leadership of Goh Keng Swee, knowhow became a national priority linked to the economic needs of the nation and was therefore pursued via education and industrial policies (Gani and Tan, 1998: 419). For example, in 1969, a two-year course with academic and technical subjects was introduced in secondary school education. Additionally, the National Technical Institute was created in 1970, and the student enrolment ratio between academic and technical education was reduced from 6:1 in 1968 to 2:1 in 1972. Furthermore, the Ministry of Science & Technology was created in 1968 to pioneer and coordinate these initiatives (ibid).

The second reforms were the 1990s Master Plan in Mauritius and the 'efficiency stage' in Singapore starting in 1979 (Bunwaree et al, 2007; Tan, 2009).[9] For Mauritius, the Master Plan aimed to address

8. Noteworthy at this level is that Mauritius was also aware of this need as mentioned above but pursued it through industrial policies rather than education reforms.

9. Noteworthy is the lag in the reform dates for both countries.

the large dropout rates, language use in schools, and number of years of schooling (Bunwaree et al, 2007: 162). A highlight from this period was how the coalition led by the Militant Socialist Movement (MSM) at the time attempted to "rally the Hindu community behind it by decreeing that oriental languages would be included and refusing to consult the public in any way about the issue" (ibid). However, this policy was subsequently nullified when the 1995 elections were won by the Mauritius Labor Party (MLP) coalition led by Navin Ramgoolam in partnership with Mauritius Militant Movement,[10] ending the 13-year rule of the preceding government. This is exemplary of popular sector mobilization during elite conflict, with the leading party appealing to Hindu constituents prior to elections with less regard for the long-term efficiency of the reform itself. In Singapore, on the other hand, during the 'efficiency stage' that lasted from 1979 to 1996, "the government projected the manpower demands in various sectors of the economy and trained people to fit into jobs in those sectors" (Tan, 2009: 114). At this point, strong levels of responsiveness to global market signals could be noted. Moreover, strong tripartite coordination similar to dirigiste states with strong state-led innovation, as described by Lee and Yoo (2007), was also observed. For example, within Singapore's public policies, there is a 'multi-dimensional approach' in which human resource needs are formulated by the Ministry of Trade & Industry, and then transferred to the Economic Development Board to define specific skills targets. Thereafter the Council for Professional and Technical Education translates this into education systems (Gani and Tan: 1998, 420). Finally, with respect to language in education, Singapore quickly embraced its prior attractiveness to British colonizers, which was its location, and therefore decided to remain an attractive trading post by maintaining English as the primary language in education and adding a second optional language to address student multi-ethnic needs. The second language could be Malay, Chinese or Tamil in a context in which there was a Chinese majority population and many Malay-Muslim communities (Gopinathan, 2007: pp. 58-9).

The third education reforms were the 1997 WPPSE and TSLN reforms of Mauritius and Singapore, respectively. For Mauritius, after the failure of the Master Plan, came the WPPSE succeeded by an Action Plan in 1998 (Bunwaree et al, 2007: 163), which aimed to remedy the failures of the previous initiatives. However, during this process, a special committee within the Ministry of Education, charged with devising the new reforms, did not consult the Government Teachers' Union (GTU) in over three years (Bunwaree et al, 2007: 163), leading to calls for the resignation of a permanent secretary within the Ministry. Furthermore, private sector entities claimed that the Ministry did not consult them in the process (ibid). This showed, once again, the persistent lack of coordination within Mauritius. On the other hand, for Singapore, the third phase, the TSLN education reforms, focused on inducing creative thinking and innovation to compete with knowledge economies in services, IT, and innovative sectors. The 'Desired Outcomes of Education' that complemented the TSLN initiatives are indicative of this (Gopinathan, 2007: 60), as they explicitly link academia to skills needed at the economic and industrial level. An additional key framework in this regard was the Ability Driven Education act introduced in 1999, which aimed to identify competencies of students at an early age and maximize them under the auspices of the Ministry of Education (Tan, 2009: 114-115). During these processes, it was noted that principals from schools and universities as well as the state, being the main entrepreneur in the economy, were repeatedly consulted (Gopinathan, 2007: 60; Chen, 1975: 24).

10. Unlike the others, the MMM appealed to ethnic minorities including the Creoles, Muslims, and non-Hindi-speaking Indian communities of Mauritius and who were notorious for being a radical social democratic party gaining momentum thanks to strikes and links to unions and 'disgruntled youth' (ibid: 34; Srebrnik, 2002: 279).

4.2. Discussion: Impact of Popular Sector Incorporation Amid Elite Conflicts During Education Reforms

Overall, during education reforms, the Mauritian political climate has left policymakers stuck in a counterproductive cycle, in which attempts to start participatory processes are made but the inputs from various actors are then neglected when contention is high. For instance, a civic network participatory process was initiated in the first reform, but there was no inclusive or concrete policy reform thereafter because of elevated levels of contention (Bunwaree et al, 2005, 158). Furthermore, even within the two following reforms, governments tended to avoid consultations with business and academia representatives, particularly on issues like languages and in more substantive stages of policy formulation (ibid). Finally, reforms would often be victims of stalemates or nullifications when coalitions led by the opposition won elections, as discussed above. Ultimately, the volatility of inter-party politics, characterized by prominent levels of defections, party indiscipline, and 'fire and fury' within Mauritius (Srebrnik, 2002: 279) led to education reforms and policies that were not responsive to market signals, but rather to electoral incentives and civil society mobilization during elite conflicts, which impeded state coordination capacity and thereafter development of economic complexity. The rationale is that capability accumulation in relevant sectors requires strong coordination between state, academia, and industry. Hausmann (2015) noted that the ability of countries to achieve high economic complexity is related to their capacity to create linked networks of productive knowledge and "flying monkeys" of companies which produce similar products and move on to upgrade to more non-ubiquitous products (World Economic Forum, 2015). For late developers, achieving this in a highly competitive globalized economy requires state coordination, such as in Singapore, as it requires the capacity to decisively adjust skills creation in education and training, and to coordinate with academia and industry in a competitive globalized climate (see Compressed Development by Whittaker et al, 2010).[11]

Furthermore, these education reforms, haunted by elite conflict and lack of coordination, are rendered less efficient as shown in the skills mismatch in Mauritius. For instance, Wignaraja (2002) developed a technological tool to measure know-how and human capital investment, and their effects on export performance, through a sample of 40 Mauritian firms (p. 94). The author argued that focusing on imported technology is not sufficient for broad technological development but must be complemented with investments in research and development (R&D), and training, in order to maintain "continuous domestic technological development" (ibid: 89). It is thus discerned that despite efficient reforms to the trade regime in Mauritius, these have not been "matched by improvements to the education system and technology support to industry" (ibid: 92). Wignaraja further asserted that whereas the primary and secondary enrolment ratio in Mauritius was good relative to sub–Saharan African standards, "there were severe shortages of tertiary-level educated manpower", which is essential for complex manufacturing activities (ibid). Crucially, university enrolment in technical subjects was 0.04% in Mauritius compared to 0.56% in Singapore in 1991 (ibid: 92-93). It is also argued that university research has little to do with the competitive needs of manufacturing (ibid: 93). For instance, Roopchund and Ramlowat (2019) demonstrated that even with high rates of graduates, skills mismatches persist, leading to greater unemployment.

On the other hand, Singapore managed to continue being responsive to global economic trends, without adhering to liberalization in the Western orthodox sense or promoting democracy and individual rights. It continued on its path of meritocracy and authoritarianism 'unfettered,' and it successfully adapted to the information age, despite earlier projections that its state paternalistic

11. Another example occurred following the 1980s debt crisis when Singapore's government instituted a rule requiring 20% of cohort enroll in technical education at the Institute of Technical Education, 40% at polytechnic education and 20% university education as a reactionary measure to remain competitive (Tan, 2009: 114).

tendencies would not be sustainable in such a context (Williams, 1996: 176). As argued by Gopinathan (2007): "Education reform in Singapore is primarily a way of retooling the productive capacity of the system, one that the state has taken at periodic intervals" (p. 59). In sum, Singapore's long-time rulers, aware of the need to develop human capital due to the smallness of the state, globalization, and lack of abundance of natural resources (Tan, 2008: 112; Gani & Tan, 1998: 419), decisively and unilaterally insulated popular sector mobilization in decision-making, and created an elite structure of bureaucrats insulated from electoral survival as incentive, but based on meritocracy (Williams, 1996: 169; Chen, 1975: 24).
Singapore's system is described as a "liberal autocracy" (as coined by Fareed Zakaria), which may be an efficient configuration in terms of enhancing state-academia-industry coordination to improve human capital. In other words, and as discussed by Haggard (2018), a common attribute of the East Asian Tigers is the presence of authoritarian systems, such as in Singapore, since it is easier to "overcome collective action problems inside and outside the government that hinder the formulation of coherent policy, override both rent-seeking and populist pressures, and thus push the economy onto a more efficient growth path" (2018: 35-36). On a similar note, Haggard alludes to Richard Doner's work on the effects of political variables on industrial outcomes in Thailand as an intermediary state per Evans' framework (p. 43). Indeed, when looking at the Auto industry particularly, Doner illustrates that due to liberalization and the transition from authoritarian rule to a party system, state-business coordination was weakened and a 'backward linkages lag' was observed (ibid: 44). Since strong state intervention may be a necessity for economic development in accordance with Gerschenkron (1962) and Whittaker et al (2010), then a state that is hindered by popular sector mobilization in its authority to implement education reforms and economic policies, will likely have less coordination capacity.

In conclusion, and against this backdrop, the relevant capability accumulation process becomes more efficient for Singapore and more difficult for Mauritius, since for the latter, the skills created in tertiary education and secondary institutes are not what industry demands but are driven by political motivations related to serving a constituency in a climate driven by "communal politics" (Srebrnik, 2002, p. 279), rather than one in which education policies are technically motivated.

V. CONCLUSION

This paper should not be perceived as a critique of Mauritian politics, considering the economic miracle that this small island state has achieved, but rather as an in-depth analysis that aims to provide insights for policy practitioners on what countries in similar predicaments can do in seeking to improve economic complexity, a robust indicator of growth potential, particularly in today's competitive globalized context.

The paper looked at the role of the state in inducing aggregate productive know-how associated with economic complexity, by looking at investments in education and education reforms historically. It finds that Singapore has significantly higher expenditure rates on education, and even more so for share of expenditure going to the tertiary sector. This is indicative of the state's role in allocating resources towards enhancing human capital, but these trends are not enough to provide a robust inference with economic complexity. Thus, the paper went deeper by analyzing the process through which education reforms and related expenditures are decided by looking at policymaking dynamics. In doing so, it uses the theories of Waldner (1999) on elite conflicts and Lee and Yoo (2007) on dirigiste states and state-academia-industry coordination. The results suggest that for late and late-late developers, state-academia-industry coordination is a necessity to create skills and greater levels of aggregate productive know-how to remain competitive globally, and to achieve higher levels of economic complexity. Doing so requires a strong decisive state able to identify the skills needed in the economy and translate them within the education system. In this

context, increased degrees of elite conflict will be an impediment to the state's capacity to do so. And while Waldner mainly argued that lower levels of elite conflict with respect to economic policies are essential for economic growth, this piece aimed to also contribute to this literature by arguing that similar to economic policies, elite conflict using popular mobilization is counterproductive during education reform policies.

Like any evidence-based policy paper, further research could be done to identify and explore other pertinent variables that may contribute to greater economic complexity. For instance, more work could be done on the international context surrounding developmental projects for both countries, colonial legacy, institutional quality (extractive or inclusive), trans-national commercial networks connecting both countries, and so forth. R&D expenditure and its relationship to greater absorptive capacity as a variable conducive to economic complexity is an additional area of interest. Finally, and linked to decisiveness, is veto player theory, which can be relevant in explaining why achieving a "winset" in terms of education policy is easier with fewer veto actors (Tsebilis, 2002), complementing Haggard's (2018) observation on the recurrence of authoritarian installments and 'strong executives' (p. 4) within developmental states, particularly during the rapid growth phase.

REFERENCES

- Auty, R.M., (2017). Natural Resources and Small Island Economies: Mauritius and Trinidad and Tobago, The Journal of Development Studies, 53:2, 264-277, DOI: 10.1080/00220388.2016.1160063
- Bellows, T. J. (2009). Meritocracy and the Singapore Political System. Asian Journal of Political Science, 17(1), 24–44. https://doi.org/10.1080/02185370902767581
- Bowman, L. Wells (2021, March 12). Mauritius. Encyclopedia Britannica. https://www.britannica.com/place/Mauritius
- Bräutigam, D. (1997). Institutions, Economic Reform, and Democratic Consolidation in Mauritius. Comparative Politics, 30(1), 45-62. doi:10.2307/422192
- Bunwaree, S. (2014). The Fading Developmental State: Growing inequality in Mauritius. Development, 57(3-4), 578–590. https://doi.org/10.1057/dev.2015.40
- Bunwaree, S., Carroll, B. W., & Carroll, T. (2007). Popular Participation in Contentious Policy Areas: Education Policy in Mauritius. Journal of Comparative Policy Analysis: Research and Practice, 7(2), 155–176. https://doi.org/ https://doi.org/10.1080/13876980500116220
- Central Statistics Office, Joomun, T., & Fanor, R., Archive Publications Export Oriented Enterprises (2021). Port Louis; Central Statistics Office. https://statsmauritius.govmu.org/Pages/Statistics/By_Subject/Manufacturing/Arch_EOE.aspx.
- Chen, P. S. (1975). Elites and National Development in Singapore. Asian Journal of Social Science, 3(1), 17–25. https://doi.org/10.1163/080382475x00021
- Department of Statistics Singapore, & Ministry of Education, Education, Language Spoken and Literacy - Government Expenditure on Education (2021). https://www.singstat.gov.sg/find-data/search-by-theme/population/education-language-spoken-and-literacy/latest-data.
- Economic Development Board, singstat.gov.sg (2021). M354871 - Workers in Manufacturing by Industry, Annual. Singapore Government. https://www.tablebuilder.singstat.gov.sg/publicfacing/createDataTable.action?refId=12376.
- Evans, P. (1992). The State as Problem and Solution: Predation, Embedded Autonomy, and Structural Change. In: S. Haggard & R. Kaufman (eds.), The Politics of economic adjustment: international constraints, distributive conflicts, and the state. Princeton, N.J.: Princeton University Press, pp. 139-181.
- Fetzer, J. S. (2008). Election Strategy and Ethnic Politics in Singapore. Taiwan Journal of Democracy, 4(1), 135–153. http://www.tfd.org.tw/opencms/english/publication/journal/.
- Ganeshan Wignaraja (2002). Firm Size, Technological Capabilities and Market–oriented Policies in Mauritius. Oxford Development Studies, 30:1, pp. 87-104. DOI: 10.1080/136008101200114912
- Gerschenkron, A. (1962). Chapter 1: Economic Backwardness in Historical Perspective, from Economic Backwardness in Historical Perspective: A Book of Essays. Cambridge, Mass.: Belknap Press of Harvard University Press, pp.5-30.
- Gill, I. S., & Kharas, H. (2015, August). The Middle-Income Trap Turns Ten | Policy Research Working Paper 7403. http://documents1.worldbank.org/curated/en/291521468179640202/pdf/WPS7403.pdf

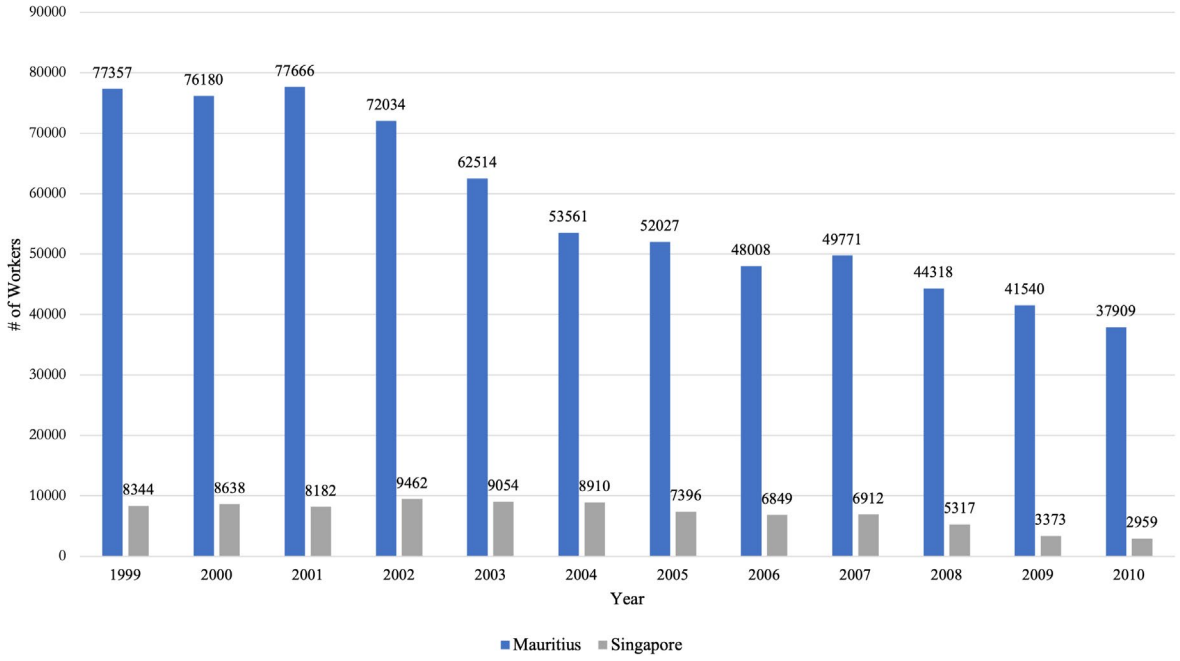
- Gopinathan, S. (2007). Globalisation, the Singapore developmental state and education policy: a thesis revisited. Globalisation, Societies and Education, 5(1), 53–70. https://doi.org/10.1080/14767720601133405
- Gulhati, R., & Nallari, R. (1990). Successful Stabilization and Recovery in Mauritius. EDI Development Policy Case Series (World Bank). Analytical Case Studies, 5. http://documents1.worldbank.org/curated/en/604951468757475877/pdf/multi-page.pdf
- Hall, P. A., & Soskice, D. (2001). An Introduction to Varieties of Capitalism. Varieties of Capitalism, 1–68. https://doi.org/10.1093/0199247757.003.0001
- Hausmann, R., & Hidalgo, C.A., (2009). "The Building Blocks of Economic Complexity," CID Working Papers 186, Center for International Development at Harvard University.
- Hee Lee, S., & Yoo, T. (2010). Government policy and trajectories of radical Innovation in Dirigiste States: A comparative analysis of national Innovation systems in France and Korea. Technology Analysis & Strategic Management, 19(4), 451–470. https://doi.org/10.1080/09537320701403383
- Johnson, C., (1982). MITI and the Japanese miracle: The growth of industrial policy, 1925-1975. Stanford, Calif: Stanford University Press.
- Lindsay, C. (2017, November 7). Revisiting the developmental State 7: Understanding the Mauritius 'miracle'. Sheffield Political Economy Research Institute (SPERI). http://speri.dept.shef.ac.uk/2017/11/07/revisiting-the-developmental-state-7-understanding-the-mauritius-miracle/.
- Mathur, R. (2012). Party cooperation and the electoral system in Mauritius. Electoral Systems in Divided Societies: The Fiji Constitution. https://doi.org/10.22459/esds.12.2012.05
- Meisenhelder, T. (1997). The Developmental State in Mauritius. The Journal of Modern African Studies, 35(2), 279-297. Retrieved March 7, 2021, from http://www.jstor.org/stable/161682
- Ministry of Education, Tertiary Education, Science and Technology, Koussa, F., Chandydyal, G., & Oodally, Z., Economic and Social Indicators - Education Statistics (1999-2019) (2021). https://statsmauritius.govmu.org/Pages/Statistics/By_Subject/Education/Arch-Education.aspx.
- Nguyen, C. P., Schinckus, C., & Su, T. D. (2020). The drivers of economic complexity: International evidence from financial development and patents. International Economics, 164, 140–150. https://doi.org/10.1016/j.inteco.2020.09.004
- O'Neill, A. (2021, July 23). Seychelles - share of economic sectors in gross domestic product 2020. Statista. Retrieved February 10, 2022, from https://www.statista.com/statistics/730945/share-of-economic-sectors-in-the-gdp-in-seychelles/
- Osman-Gani, A. M., & Tan, W.-L. (1998). Human resource development: the key to sustainable growth and competitiveness of Singapore. Human Resource Development International, 1(4), 417–432. https://doi.org/10.1080/13678869800000053
- Ramtohul, R. (2016). Globalisation, Internationalisation and Higher Education in Mauritius: The Compromise of Quality. Africa Development / Afrique Et Développement, 41(3), 117-138. Retrieved March 13, 2021, from http://www.jstor.org/stable/90013882
- Roopchund, R., & Ramlowat, D. (2019). Adapting the Mauritian higher education system for effective workforce development. Industry and Higher Education, 33(6), 414–424. https://doi.org/10.1177/0950422219878384
- Rubin, Z. O. B. (2003). Turkish economy in crisis; Critical Perspectives on the 2000-1 crises. Routledge.

- Rothman, S. (2005, August 9). Mauritius: Selected Issues and Statistical Appendix | Country Report No. 05/280. Retrieved February 25, 2021, from https://www.imf.org/en/Publications/CR/Issues/2016/12/31/Mauritius-Selected-Issues-and-Statistical-Appendix-18475
- Sanjeev K. Sobhee (2009) The economic success of Mauritius: lessons and policy options for Africa, Journal of Economic Policy Reform, 12:1, 29-42, DOI: 10.1080/17487870902739186
- Serajuddin, U., & Hamadeh, N. (2020, July 1). New world bank country classifications by income level: 2020-2021. Retrieved March 15, 2021, from https://blogs.worldbank.org/opendata/new-world-bank-country-classifications-income-level-2020-2021
- Srebrnik, H. (2002). 'Full of Sound and Fury': Three Decades of Parliamentary Politics in Mauritius. Journal of Southern African Studies, 28(2), 277-289. Retrieved April 5, 2021, from http://www.jstor.org/stable/823385
- Tan, C. (2008). Globalisation, the Singapore state and educational reforms: towards performativity. Education, Knowledge & Economy, 2(2), 111–120. https://doi.org/10.1080/17496890802223619
- The Editors of Encyclopaedia Britannica. (n.d.). History of Singapore. In Britannica. https://www.britannica.com/place/Singapore/History.
- The Growth Lab at Harvard University. (2019). "Growth Projections and Complexity Rankings, V2" [Data set]. https://doi.org/10.7910/dvn/xtaqmc
- The Growth Lab at Harvard University. (n.d.). What did Mauritius export in 1998? The Atlas of Economic Complexity. https://atlas.cid.harvard.edu/explore?country=151&product=undefined&year=1998&productClass=HS&target=Product&partner=undefined&startYear=undefined.
- The Growth Lab at Harvard University. (n.d.). What did Singapore export in 1998? The Atlas of Economic Complexity. https://atlas.cid.harvard.edu/explore?country=192&product=undefined&year=1998&productClass=HS&target=Product&partner=undefined&startYear=undefined.
- Tsebelis, G. (2009). VETO PLAYERS THEORY. In Veto players: How political institutions work. Princeton, NJ: Princeton University Press.
- Waldner, D. (1999). Chapter 1: Institutional Origins and Economic Outcomes, from State building and late development. Ithaca, N.Y.: Cornell University Press, pp.1-18.
- Whittaker, D.H., Zhu, T., Sturgeon, T. et al. (2010). Compressed Development. St Comp Int Dev 45, 439–467 https://doi.org/10.1007/s12116-010-9074-8
- Wignaraja, G. (2002). Firm Size, Technological Capabilities and Market-oriented Policies in Mauritius, Oxford Development Studies, 30:1, pp. 87-104, DOI: 10.1080/136008101200114912
- Winstedt, R. Olof, Leinbach, Thomas R., Ho, Robert and Kennard, Annajane (2021, March 10). Singapore. Encyclopedia Britannica. https://www.britannica.com/place/Singapore
- World Economic Forum. (2015). Secrets of Economic Growth. https://www.youtube.com/watch?v=2FeugaLv5Bo
- YouTube. (2015). Understanding Economic Complexity - Cesar Hidalgo. Serious Science. https://www.youtube.com/watch?v=RuM-AtDjuxg.
- Yeung, Henry Wai-chung. Strategic Coupling: East Asian Industrial Transformation in the New Global Economy, Cornell University Press, 2016. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/kcl/detail.action?docID=4526406.

Appendices

Appendix 1.

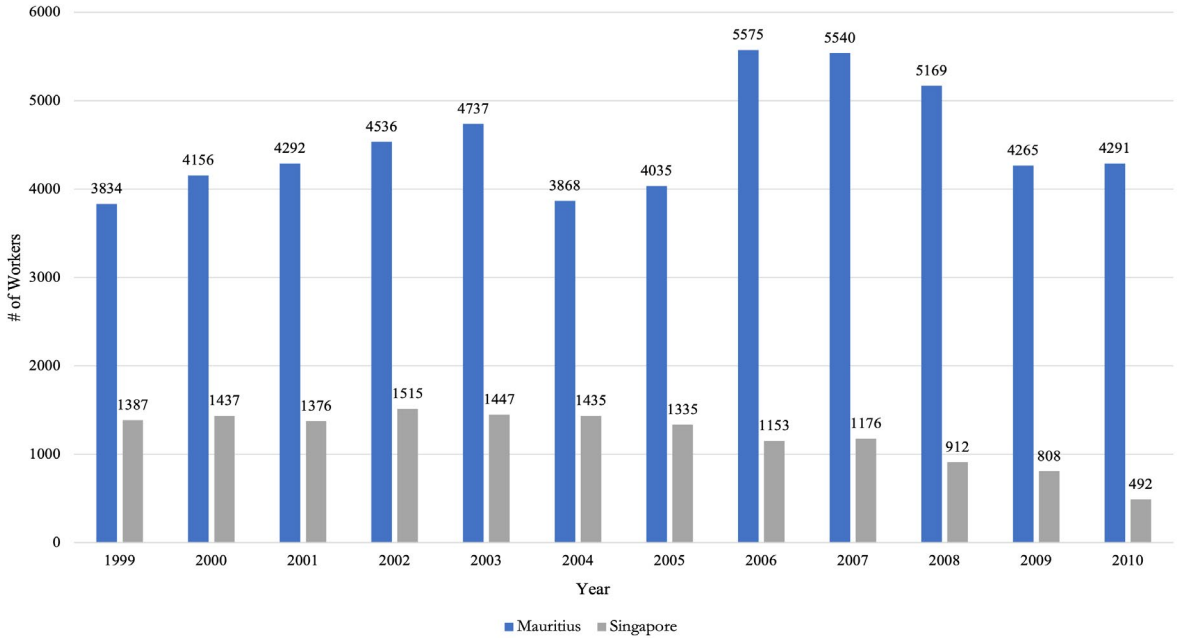
Number of Workers in Wearing Apparel Industry (Low Complexity)



Source: (1) Economic Development Board, singstat.gov.sg (2021). M354871 - Workers in Manufacturing by Industry, Annual. (2) Central Statistics Office, Joomun, T., & Fanor, R., Archive Publications Export Oriented Enterprises (2021).

Appendix 2.

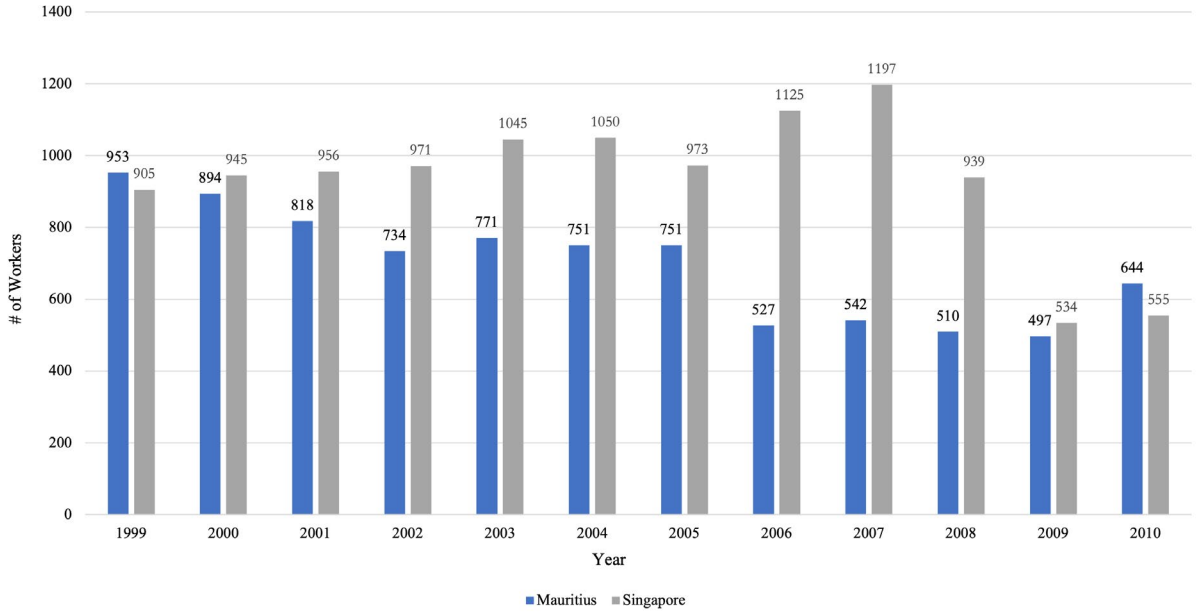
Number of Workers in Textiles & Textile Manufactures (Medium Complexity)



Source: (1) Economic Development Board, singstat.gov.sg (2021). M354871 - Workers in Manufacturing by Industry, Annual. (2) Central Statistics Office, Joomun, T., & Fanor, R., Archive Publications Export Oriented Enterprises (2021).

Appendix 3.

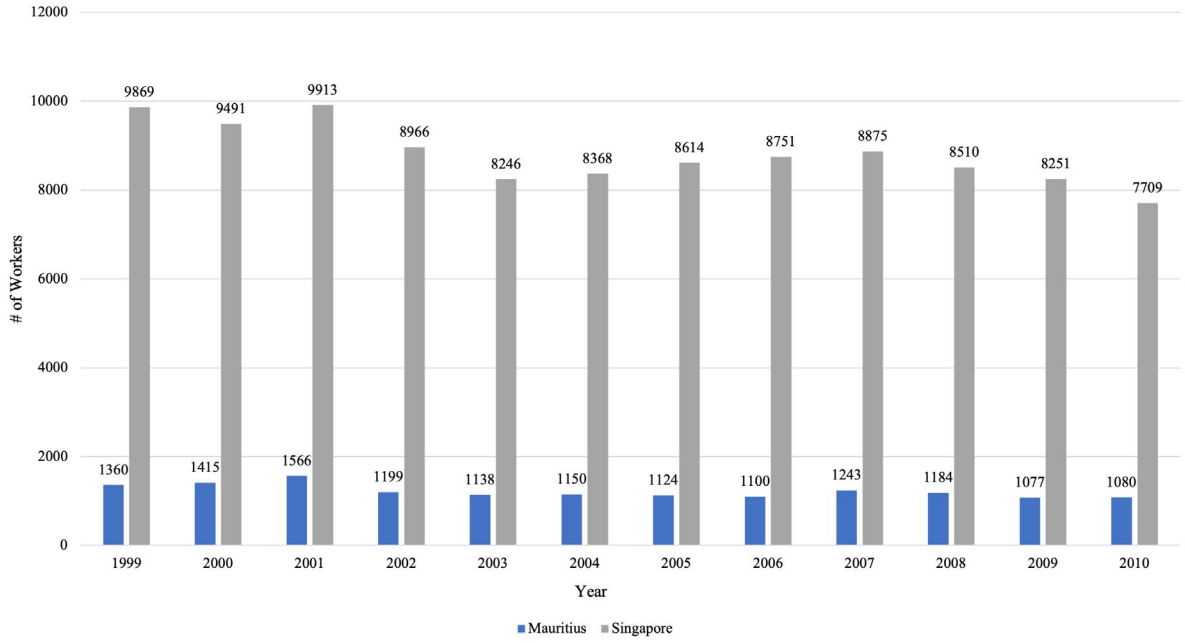
Number of Workers in Leather, Leather Products & Footwear Industry (Medium Complexity)



Source: (1) Economic Development Board, singstat.gov.sg (2021). M354871 - Workers in Manufacturing by Industry, Annual. (2) Central Statistics Office, Joomun, T., & Fanor, R., Archive Publications Export Oriented Enterprises (2021).

Appendix 4.

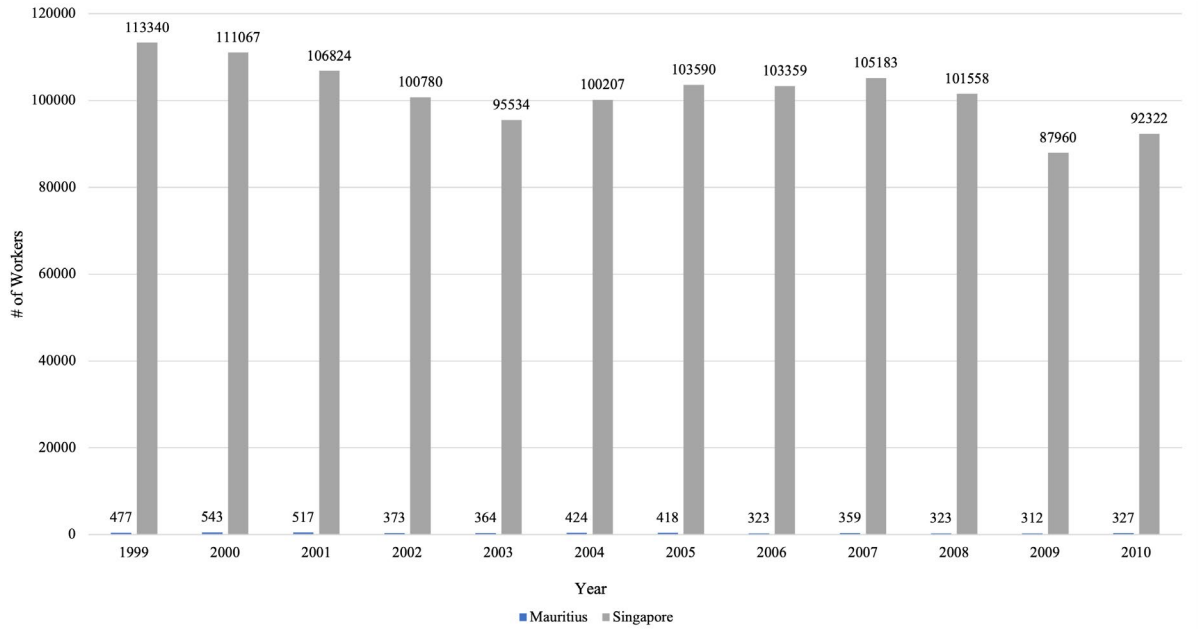
Number of Workers in Electrical Equipment Industry (High Complexity)



Source: (1) Economic Development Board, singstat.gov.sg (2021). M354871 - Workers in Manufacturing by Industry, Annual. (2) Central Statistics Office, Joomun, T., & Fanor, R., Archive Publications Export Oriented Enterprises (2021).

Appendix 5.

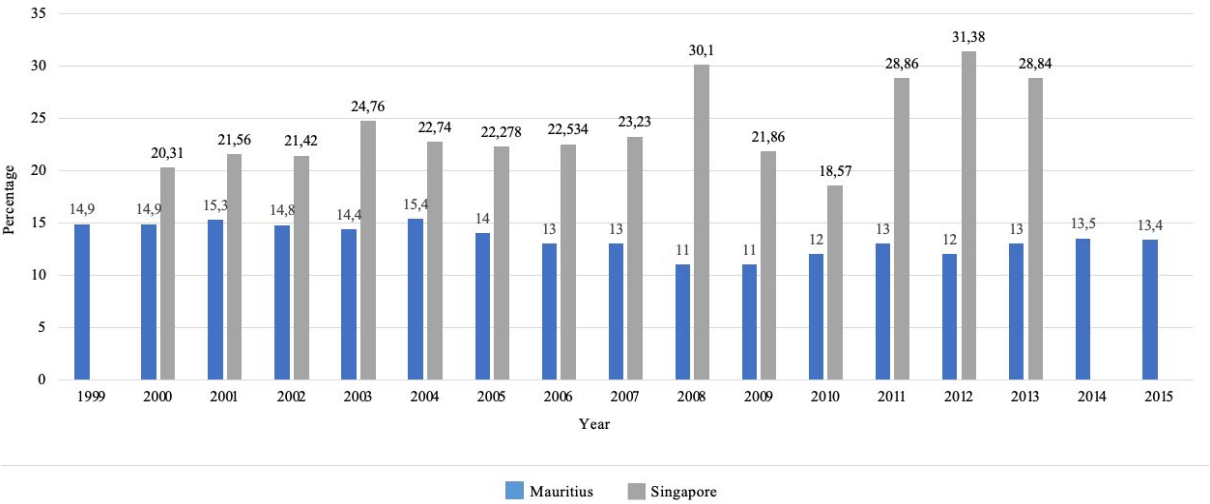
Number of Workers in Computer, Electronic & Optical Products (High Complexity)



Source: (1) Economic Development Board, singstat.gov.sg (2021). M354871 - Workers in Manufacturing by Industry, Annual. (2) Central Statistics Office, Joomun, T., & Fanor, R., Archive Publications Export Oriented Enterprises (2021).

Appendix 6.

Share of total government expenditures (%) disbursed to Ministry of Education[12]

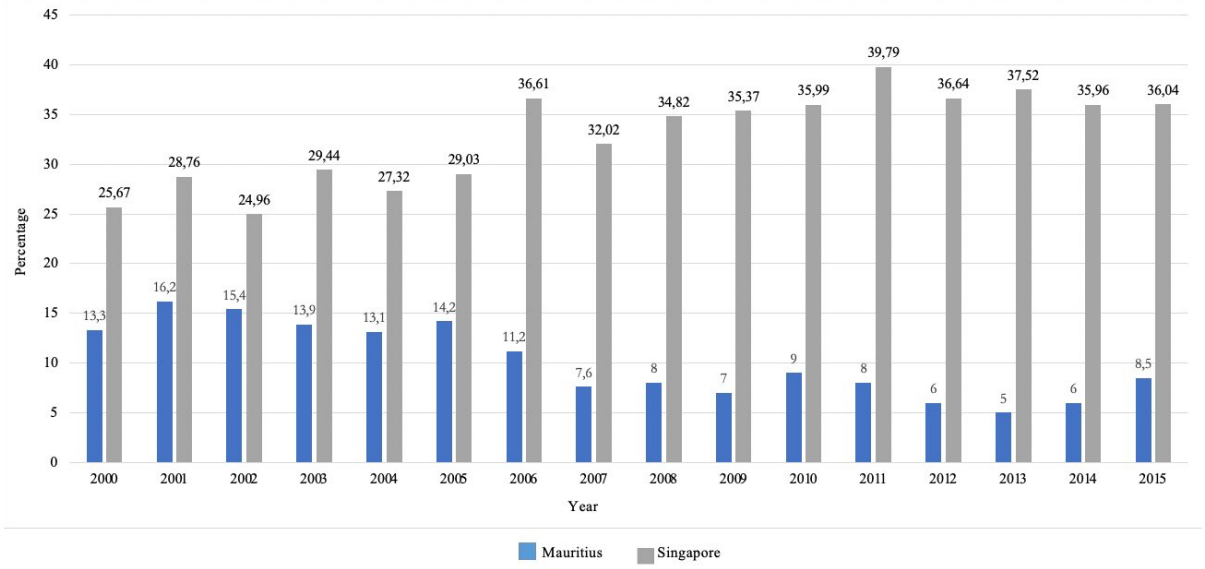


Source: (1) Ministry of Education, Tertiary Education, Science and Technology, Koussa, F., Chandydyal, G., & Oodally, Z., Economic and Social Indicators - Education Statistics (1999-2019); (2) Department of Statistics Singapore, & Ministry of Education, Education, Language Spoken and Literacy - Government Expenditure on Education (2021).

12. For the years 1999, 2014, and 2015, there's no available data from the Singaporean government.

Appendix 7.

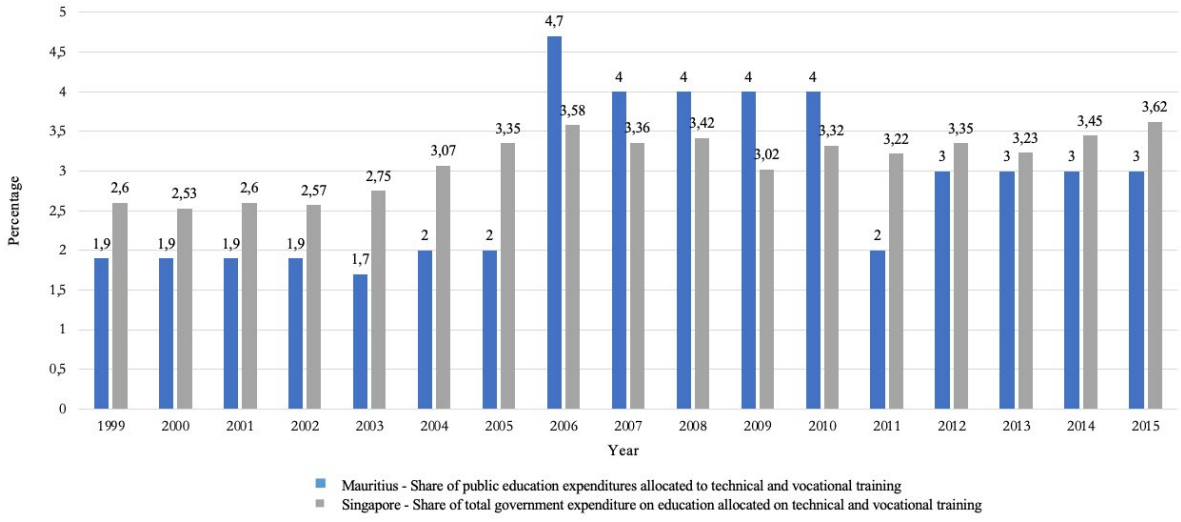
Share of public expenditures on education disbursed to tertiary and post-secondary sector



Source: (1) Ministry of Education, Tertiary Education, Science and Technology, Koussa, F., Chandydyal, G., & Oodally, Z., Economic and Social Indicators - Education Statistics (1999-2019); (2) Department of Statistics Singapore, & Ministry of Education, Education, Language Spoken and Literacy - Government Expenditure on Education (2021).

Appendix 8.

Share of public expenditures allocated to vocational and training institutes



Source: Author's calculations based on data from: (1) Ministry of Education, Tertiary Education, Science and Technology, Koussa, F., Chandydyal, G., & Oodally, Z., Economic and Social Indicators - Education Statistics (1999-2019); (2) Department of Statistics Singapore, & Ministry of Education, Education, Language Spoken and Literacy Government Expenditure on Education (2021).

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