Readiness To Adopt Virtual Team: A Study of Selected Medium-Sized Companies

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Abstract – In Malaysia, most organizations face many challenges to manage virtual team especially in the current hybrid working environment. Moreover, studies on virtual team have been lacking and majority of them have been focusing more on large companies. Using foresight tools, drivers, readiness and future trends of virtual team adoption among medium sized company in Malaysia was explored. A total of 31 medium sized companies located in Johor Malaysia participated in this study. STEEPV analysis was used to identify the key drivers of virtual team adoption. These identified drivers were used in the impact-uncertainty analysis. Four future scenarios were generated by top two drivers which are ‘connectivity between interpersonal relationships’ and ‘High rapid economic development’. Data from Technology Readiness Index (TRI) indicated that majority of respondents were in favor of virtual teams’ adoption which support the likelihood of future scenario number one.

Keywords: Virtual Team, Medium sized company, Malaysia

1. Introduction

A research done by Aripin, Mustafa, & Hussein (2010) found that virtual team working environment is lacking in Malaysia and they are more likely to be adopted by multinational companies that have employees from different countries and time zones collaborate. However, this stance has significantly changed since the post pandemic as virtual team is seen to leverage performance despite being remote. However, to what extent this trend is impacting the small and medium-sized companies is unknown.

Moreover, a literature scan that was conducted on 5rd June 2021 (Table 1) indicates the growing number of literatures on virtual teams but limited applications in the context of Malaysia and medium-sized companies.
Table 1: The Number of Hits based on Literature Scan

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Databases</th>
<th>Number of Hits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtual team</td>
<td>Scopus</td>
<td>1441</td>
</tr>
<tr>
<td></td>
<td>Science Direct</td>
<td>2272</td>
</tr>
<tr>
<td></td>
<td>Elsevier</td>
<td>170</td>
</tr>
<tr>
<td>Virtual team and Malaysia</td>
<td>Scopus</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Science Direct</td>
<td>91</td>
</tr>
<tr>
<td></td>
<td>Elsevier</td>
<td>139</td>
</tr>
<tr>
<td>Virtual team and medium-sized companies</td>
<td>Scopus</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Science Direct</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Elsevier</td>
<td>116</td>
</tr>
</tbody>
</table>

Medium-sized companies are the crucial roles in the innovation system and the economy of a country. Classification of medium sized in manufacturing sector is based on sales turnover (from RM15 million to not over RM50 million) or the number of employees (from 75 to not exceeding 200) while those in service and other sectors must have sales turnover RM3 million to not over RM20 million or the number of employees from 30 to not exceeding 75 (Wong, 2013). Despite their size limits, they bring about a lot of creativity into the products and services they offer through research and development (Ebrahim, Ahmed, & Taha, 2009a). One very important trend to enable new knowledge creation and transfer in and to medium-sized companies’ is the development of collaborative environments and networks to increase their innovation capabilities as a single unit but also the capabilities of the network as a whole through collective learning (Ebrahim et al., 2009a). Despite medium-sized companies’ size limits, their competitiveness and innovation are comparable with some huge and international industries. Moreover, medium-sized companies which mostly have limited resources may also face challenges to adopt virtual team as their management teams’ threshold of administrative or managerial acumen is limited (Orser, 2000).

Thus, this study is undertaken to explore drivers, future scenarios and level of readiness of medium-sized companies to adopt virtual teams.
2. Literature Review

According to Saunders, Lewis, & Thornhill (2012), literature review is to instruct oneself in the topic area and to comprehend the literature before shaping an argument or justification. In this section, definition of virtual team, virtual team platform, types of virtual team, advantages and disadvantages of virtual team, virtual team in different sector and readiness of to adopt virtual team are discussed.

2.1 Virtual team

A virtual team (VT) refers to a ‘cross-functional workgroup brought together to tackle a project for a finite period through a combination of technologies’ (Aripin, Mustafa, & Hussein, 2010). It can be formed across the geographic, time zone, culture and maybe languages. It has the ability to bring the best talents together, no matter where the team members are, without them leaving home, even able to saves cost and time (Jimenez, Boehe, Taras, & Caprar, 2017). According to Maynard & Gilson (2021), virtual teams are initially touted as a means to increase workforce efficiency as there should be no time lost to social norms such as chatting, or the need to exchange pleasantries, and small talk. Therefore, more companies are developing virtual teams for more effective task accomplishment.

Various definitions of virtual team tend to highlight its characteristics in terms of location and proximity. According to Ebrahim, Ahmed, & Taha, (2009a), virtual teams are comprised of members who are located in more than one physical location. While Robinson (2015) emphasized flexibility as main feature of virtual team that can render competitive advantage to adapt and respond to changing market demands. In another aspect, a research related to topic of virtual sales teams, what it defining is virtual team is a group of geographically dispersed individuals that work collaboratively to sell and provide service to customers with the aim of further cultivating business relationships (Rapp & Rapp, 2020).

2.1.1 Virtual team platforms

There have various platform available which processing its own function which like video conferencing, file saving, project management, messengers dropping and more (Martin, 2020). Thus, choice of virtual team platform depends on the needs of the virtual team or enterprise. According to The Malaysian Reserve, the most popular video conferencing platforms adopted by Malaysian is Zoom and Microsoft team and the author mentioned that Skype was becoming less popular as the traditional telecommunication apps (Birruntha, 2020). According to News Strait Times (2020), WhatsApp and Zoom are the most popularly adopted platforms by companies and entrepreneurs. WhatApps is the most widely used for virtual team followed by Microsoft teams and also Skype. However, in terms of advanced functions and capability, Zoom and Microsoft team provide better visual and sound qualities during processes meeting and even as a file storages.

2.1.2 Different types of virtual team.

There are many types of virtual team based on the lifespan, objective, goals and roles of the team members (Lopez, 2020). In essence, virtual teams can be classified into eight types of
virtual teams (Juneja, n.d.; Lopez, 2020; Lumencadela, 2017). All of these teams’ characteristic and functions are shown in Table 2.

Table 2: Different types of virtual teams.

<table>
<thead>
<tr>
<th>Types of virtual teams</th>
<th>Characteristic</th>
<th>Function</th>
</tr>
</thead>
</table>
| Networked Teams        | • Geographically dispersed.  
                        | • Inconstant memberships  
                        | • Allow members from outside the organization  
                        | • Cross-functional teams. | Formed to address a short-term objective |
| Parallel Teams         | • Constant membership  
                        | • Members from the same organization. | Formed to review a process or a problem. |
| Project or Product Development Teams | • Members are subject matter experts from different parts of the globe.  
                        | • Inconstant memberships | Formed to innovate new products, deliver a new technology system, or redesign operational processes. |
| Work, Production or Functional Teams | • Geographically dispersed  
                        | • Members from different role coming together  
                        | • Every members have own role. | Formed to perform regular or ongoing tasks |
| Service Teams          | • 24 hours, 7 days.  
                        | • Members from difference time zones and geographic. | Formed to perform work in continuation. |
| Action teams           | • A very short duration of time. | Formed to provide immediate response to a problem. |
| Offshore ISD Teams     | • Subcontract portions of work  
                        | • Used for software development | Formed to work in conjunction with an onshore team. |
| Management Teams       | • Members are managers from the same organization.  
                        | • Applicable to the organizations which has more than one offices in different location. | Formed to discuss corporate-level strategies. |

2.2 Advantages of virtual team.
Virtual team has great potential when it is correctly and appropriately used. Firstly, it can reduce the travel cost and time (Ahmed, Taha, & Ebrahim, 2009; Bergiel & Bergiel, 2016). It also helps companies overcome the problem of limited space that traditional working team faced (Ebrahim, Ahmed, & Taha, 2009b). Besides, flexibility and fast-response were among the biggest advantages for companies and employees (Yusof, 2006). Virtual team could be flexible in terms of work hours but also include job design (Arnison & Miller, 2002). Other than that, sharing knowledge, expertise and experiences each other would be better (Clear & Macdonell, 2011; Furst-holloway, Reeves, Rosen, & Blackburn, 2004). Through the processes of knowledge sharing, virtual team can be more effective and efficient while reducing implementation errors (Rosen & Blackburn, 2007).

2.3 Disadvantages of virtual team.

The first disadvantages of virtual team adoption is complex technological applications requirement (Badrinarayanan & Arnett, 2014; Bergiel, Bergiel, & Balsmeier, 2008). Some of the complex application require a very high cost facilities and not every members could operate them. Thus, it will be a time-waste process for training members and waste on technical issues. Besides, lack of personal and human contact is a glaring issue (Morley, Cormican, & Folan, 2014). A person who work alone will generate the feeling of isolation and will start missing that human interaction in a workplace. Moreover, lack of trust among team members is another issue that need to be addressed (Rosen & Blackburn, 2007). It is hard to build a trust in a teams dispersed at different geographic and conduct few face to face meeting (Dangmei, 2016). It is impossible to run-in a teams never face physically to familiar as conventional teams.

2.4 Virtual team in organization.

The use of virtual team in business are spillover effect from the virtual schooling which have started in mid 1990s. The benefits bring by virtual schooling are growing educational access, supporting high-quality learning opportunities, improving student outcomes and skills, allowing for educational choice, and achieving administrative efficiency (Barbour & Reeves, 2009). Furthermore, virtual training has helped most of institutions in cost saving and provide insight into the different types of virtual training available to corporate environment at the same time (Reid, 2019).

2.5 Future drivers of virtual team using STEEPV analysis

The future drivers of change identified from various sources such as journals, government-related articles, the internet sharing information and non-governmental organizations report that related to virtual teams and classify into social, technological, environmental, economy, political, and values. In this section, all drivers from the STEEPV analysis were used to identify the key drivers of virtual teams in Malaysia.

2.5.1 Social

A formal socialization and communication in virtual team working became worrisome point considered by companies. Thus, Wojahn, Taylor, & Blicharz, (2010) proposed that formal and direct interaction to be taken placed by an informal interaction. While working and communicating in virtual team, an informal communication environmental will make the
members and collaborators feel more comfortable to express themselves like frustrations, personal information, or humour. Adoption the informal communication and interaction between team members will improve relationship and familiarity with each other. Maynard & Gilson (2021) claimed that the absence of personal know-how about team member would not hinder team collaboration as familiarity and task performance supersedes that factor. However, prolonged lack of physical interaction will cause team members feeling socially isolated and abandoned (Juneja, 2020). Hence, managers should be proactive in ensuring the social components characteristic of working in traditional workplaces that keep individuals socially satisfied and committed to the organization.

2.5.2 Technology
Technology is indispensable in a formal virtual team formation. The focus of virtual team technology is on video conference platforms, instant messaging tools, social media platforms and more (Norman, 2019). However, despite the advanced in collaborative technology, members of virtual team like to challenge the immersive and interactive experiences of ‘being there’ and ‘see’ each other (Montoya, Mitzi & Massey, Anne & Lockwood, 2011). A new and emerging technology which is three dimension collaborative virtual environmental (3DVEs) that existed in the era of earlier technologies could be used (Gilson, Maynard, Jones Young, Vartiainen, & Hakonen, 2015). According Sallnäs (2005), this systems allow few members share the same 3D digital space even if they are in their own virtual physical locations. This technology allow members having realistic behaviours through 3D avatars, socialization with multi-channel communication, engaging in realistic experience by interacting with 3DVE from Topu & Goktas (2019) and also high-perception in object and human. Despite it is being unsuitable to be implemented earlier due to the poor earlier technology, innovation and integration of 3DVEs with other technologies like immersive virtual reality is expected.

2.5.3 Economic
One of the drivers that encourage to virtual team adoption is often economics (Zemliansky & St.Amant, 2008). Lazarova (2020) found that more and more individuals are choosing self-employment or flexible working time and work-life balance regime due to the economic downturn during the 2019 to 2020. The use of virtual team has encouraged this trend as it enable remote team to earn income from oversea and boosting the local economics. According to the research from Ozimek (2020), nearly 20 to 25% of professional is likely to change to working remotely in the next five years and around 61% remote workers agree that productivity had increased compared to physical work.

2.5.4 Environmental
Crow & Millot (2020) found that demand for diesel was decreased more than 6 million barrels a day and the usage of gasoline dropped more than 9 million, during lockdown on April of 2020. According to the U.S. Employee Workforce Report, 3.9 million of part time remote workers was contributing to improved air quality worth 83 million lbs. per year (Mai, 2021). Moreover, Jozwiak (2016), found that that virtual team had reduced overall greenhouse gas emissions from transport about 66% when they meet virtually. These studies
provide substantial evidence that remote working or virtual team was make a positive environmental impact.

2.5.5 Politic
Virtual team consisted of talented person from different countries, and this undoubtedly would have some legal and political implications. ‘One implication is that the creation and operation of virtual teams can lead executives to unwittingly violate laws.’(Plump & Ketchen, Jr., 2013). If any careless happen, it may be will claimed by the government like the issues of work and labour related issues, such as wages and work hours, financial issues, such as income and tax laws (William Allen, 2014). Moreover, some of the countries does not have copyright protection law toward IP. In these cases, all of the parties involved in the virtual team should coordinate and deliberate the detail in a contract to avoid the problem of IP occur (Chan, 2001).

2.5.6 Values
The presence of virtual team is undoubtedly would reduce personal interaction and thus assimilation of values might be limited. However, Bergiel et al. (2008) claimed that virtual team discourage age and race discrimination. It is because the important requirement of joining a virtual team more focus on personal productivity and talent and it greatly reduce the problem of racism. Eddleston & Mulki (2017) also proposed that remote work may self-scheduling their working time and have more time for their family.

2.6 Summary of Issue and Drivers
This research has identified major issues, challenge and trends for future drivers of virtual teams. All merged issues, challenges and trends are shown in Table 3

<table>
<thead>
<tr>
<th>No</th>
<th>Issues, challenge and Trends</th>
<th>Drivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Informal interaction, Build relationship, Good collaboration, Social bonding, Reduce loneliness, Coordinate socialization, Interactive, More time for family, Participant coordinating contract, Sign working contract.</td>
<td>Connectivity between interpersonal relationship</td>
</tr>
<tr>
<td>2</td>
<td>Higher income, Boosting local economic, Increase productivity, Increase hiring rate, Boosting global economic, Increase Self-employed, Attract expert.</td>
<td>High rapid economic development.</td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>Potential Impact</td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------------------------------------------------</td>
<td>-------------------------------------------------------</td>
</tr>
<tr>
<td>3</td>
<td>Realistic, Immersive, Interactive, 3D digital space, High-tech of environment, 3D avatar, Innovation and integration.</td>
<td>High stimulate toward innovation in virtual team tools.</td>
</tr>
<tr>
<td>4</td>
<td>Reduce expenses companies, Reduce commute cost, Reduce usage of diesel, Reduce usage of gasoline.</td>
<td>Greatly potential to reduce company’s expenditure.</td>
</tr>
<tr>
<td>5</td>
<td>Higher income, Reduce waste production, Reduce water pollution, Improve air quality, Reduce unnecessary time, Reduce energy wasting, More time for family, Balance work and life, Less stress facing.</td>
<td>Great potential to increase life quality.</td>
</tr>
<tr>
<td>7</td>
<td>Increase the abilities, Improve working performance, Increase productivity, Expressiveness, Good collaboration, Social bonding, Balance work and life.</td>
<td>Improve personal ability.</td>
</tr>
<tr>
<td>8</td>
<td>Reduce usage of diesel, Reduce usage of gasoline, Reduce CO₂ emission, Improve air quality, Reduce greenhouse gas emission, Reduce waste production, Reduce water pollution.</td>
<td>Improve quality of environment.</td>
</tr>
<tr>
<td>9</td>
<td>Increase residential electric, Increase household consumption, More time for family.</td>
<td>Additively household consumption.</td>
</tr>
<tr>
<td>10</td>
<td>Unwritten laws, Different laws in countries, Financial law.</td>
<td>Uncertainty of law due to hidden law</td>
</tr>
</tbody>
</table>
3. Methodology of study

Research methodology is a systematic approach and one of the path through which these researchers formulate problem and objective and present the result from the data obtained during the study period (Sileyew, 2016). This study used exploratory research design utilized the foresight methods. The foresight methods including STEEPV analysis, Impact-Uncertainty analysis and scenario building.

STEEPV analysis refers to Social, Technologic, Economic, Environment, Politic and Values to identify the drivers for adoption virtual team in medium-sized companies. Drivers identified provide a starting point for the strategic discussions about the foresight study. The timeframe of research paper used in this study was from 2001 to 2021. The STEEPV analysis would be used to develop the drivers. These drivers would be used in the descriptive questionnaires indicating the impact and uncertainty of each driver. Drivers with highest mean impact and uncertainty would be mapped in scenario building in order to study the future trends.

The major instrument used to collect data is a descriptive questionnaire. The questionnaire has four parts which is, Section A, Section B, Section C, and Section D. Section A is used to obtain demographical background information of each respondent which includes gender, age, monthly income, race, and education level. Section B include impact of factors and drivers towards adoption virtual team among medium-sized companies in Malaysia. In section C, uncertainty of drivers towards adoption virtual team were measured. At the last part which is section D, the readiness of drivers towards adoption virtual team were gauged using a 5-likert scales of “5=strongly agree” to “1=strongly disagree”. The items for virtual team adoption readiness were adopted from Parasuraman’s Technology Readiness Index (2000). All of the collected data were analyzde by Microsoft Excel.

Impact uncertainly analysis will be conducted as an evaluation biases in the result of quantitative analysis data. Impact means the extent that each driver will influence the adoption of virtual team in the future, while, uncertainty means the ambiguous evolution of driver in virtual team adoption. The drivers with greatest impact and most uncertainty would be shown and the highest believed to be the key driver Finally, four of potential future scenarios using 2 X 2 matrix approach were developed and discussed.

4. Results

This section would present the finding in several sub sections as follows;
4.1 Demographic Analysis
There were 31 respondents from medium sized companies participated in this study. Majority of respondents is female which consists 19 people (61.3%) and while the balance is (n=12, 38.7%) is male. Most of the respondent’s age is below 30 which is 14 (45.2%). The highest academic qualification was STPM/ Matriculation/ Diploma/ Foundation (n=16, 51.6%). 32.3% of respondents (n=10) had less than 5 years’ experience followed by 10.3% (5-10 years’ experience). It is noted that more than half of the respondent (61.3%) was from manufacturing working sector while the rest are from service sector (47.8%).

4.2 Impact-Uncertainty Analysis
Mean scores of drivers were listed in Table 4. The mean scores were plotted in the impact and uncertainty table as shown in Figure 1. It is found that D1 (4.16129, 4.129032) and D2 (4.129032, 4.129032) which have been highlighted in red was the top two drivers. D1 with highest impact mean score and uncertainty mean score which represented connectivity between interpersonal relationships while D2 with the highest uncertainty mean score which represented high rapid economic development. Connectivity between interpersonal relationships was a broad category which included cognitive aspects of relationships, behavioural aspects of relationships and affective aspects of relationships thereby easily affect the performances (Zimmermann, 2011). Virtual team is very common in competitive market that helps a business more responsiveness with lower cost for thereby achieve rapid economic development (Ebrahim, Ahmed, & Taha, 2009c).

<table>
<thead>
<tr>
<th>Code</th>
<th>Drivers</th>
<th>Impact</th>
<th>Uncertainty</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1</td>
<td>Connectivity between interpersonal relationships</td>
<td>4.16129</td>
<td>4.129032</td>
</tr>
<tr>
<td>D2</td>
<td>High rapid economic development.</td>
<td>4.129032</td>
<td>4.129032</td>
</tr>
<tr>
<td>D3</td>
<td>High stimulatin toward innovation in virtual team tools.</td>
<td>3.967742</td>
<td>3.870968</td>
</tr>
<tr>
<td>D4</td>
<td>Greatly potential to reduce company’s expenditure.</td>
<td>3.741935</td>
<td>3.648387</td>
</tr>
<tr>
<td>D5</td>
<td>Great potential to increase life quality.</td>
<td>3.935484</td>
<td>3.935484</td>
</tr>
<tr>
<td>D6</td>
<td>Protected by laws and fair environments.</td>
<td>3.774194</td>
<td>3.741935</td>
</tr>
<tr>
<td>D7</td>
<td>Improve personal ability.</td>
<td>3.903226</td>
<td>3.967742</td>
</tr>
<tr>
<td>D8</td>
<td>Improve quality of environment.</td>
<td>4.064516</td>
<td>4.064516</td>
</tr>
<tr>
<td>D9</td>
<td>Improve household consumption.</td>
<td>3.967742</td>
<td>3.870968</td>
</tr>
<tr>
<td>D10</td>
<td>Uncertainty of law due to hidden law and difference countries law.</td>
<td>4.032258</td>
<td>3.903226</td>
</tr>
</tbody>
</table>
4.3 Technology Readiness Index (TRI) Analysis

Table 5: Overall Technology Readiness Index (TRI) of adoption virtual team

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Mean</th>
<th>Central of Tendency Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimism</td>
<td>4.11</td>
<td>High</td>
</tr>
<tr>
<td>Innovativeness</td>
<td>4.08</td>
<td>High</td>
</tr>
<tr>
<td>Discomfort</td>
<td>3.91</td>
<td>High</td>
</tr>
<tr>
<td>Insecurity</td>
<td>4.01</td>
<td>High</td>
</tr>
<tr>
<td>Overall TRI</td>
<td>4.03</td>
<td>High</td>
</tr>
</tbody>
</table>

From Table 5, optimism had the highest mean score among 4 of attributes which contains 4.11. The second highest is innovativeness (4.08), followed by insecurity (4.01). And the lowest mean score is discomfort which only 3.91. All of these four attributes had high level of central tendency. Thus, the technology readiness of adoption virtual team was at the high level of central tendency among medium sized companies Malaysia.

The high level of technology readiness in adoption virtual team can be inferred as most of Malaysian medium size companies are well prepared to greet this emerging team. The expedition in digital adoption was expanded in these years and internet arrives to physical world through different embedded technologies (SA Technologies, 2017). Coupled with pandemic Covid-19 recently, findings result show in high level of technology readiness in adoption virtual team. Therefore, it became necessarily preparation for every companies for facing upcoming technology’s needs. In short, readiness to adopt virtual team was not only stand by developed countries, also in Malaysia.

5. Discussion
5.1 Scenario Building

<table>
<thead>
<tr>
<th>Low rapid economic development</th>
<th>Growing adoption (scenario 3)</th>
<th>Mature adoption (scenario 1)</th>
<th>High rapid economic development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance (scenario 2)</td>
<td>Preferred and success in conventional teams (scenario 4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of connectivity between interpersonal relationships</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 2: Impact-Uncertainty Analysis

Four possible scenarios were presented in Figure 2. These scenarios were derived from the impact-uncertainty analysis where top two selected drivers (connectivity between interpersonal relationships and high rapid economic development) were mapped into the four quadrants.

a. Scenario 1: Mature Adoption
The first scenario is an ideal scenario when high level of connectivity between interpersonal relationships is aligned with high rapid economic development. Basically, virtual team would be adopted by majority of companies to enable economic prosperity. When interpersonal relationships are positively connected, it will effectively promotes the responsiveness between the members especially for cross-nation, thereby achieve the contribution towards working (Zimmermann, 2011). According to Horwitz, Bravington, & Silvis (2006), interpersonal relationships is crucial factor for increasing productivity and for virtual team perform to successfully. Besides, Dave Nevogt (2020) said that productivity effective for stimulating economy indirectly. As Rendón (2014) explained, some companies such as BP, Nokia and Ogilvy and Mather had successfully adopted their virtual teams across borders.

b. Scenario 2: Resistance
In scenario 2, resistance to adopt occurs when there is lack of connectivity between interpersonal relationships and low economic development. Lack of connectivity between interpersonal relationships may lead to a lot of internal and external problems such as misunderstanding, conflict, isolation, and mistrust. According to Kaja Prystupa-Rządca (2014) and Nabila Jawadia, Mohamed Daassib (2013), one of the crucial factor that causes low connectivity between interpersonal relationships among members is leadership and
behaviour of leader. Effective behaviour of e-leader enables influences the trust between members and the quality of relationship both in work or relations. On the other hand, as noted by Bana and Benzell (2020), companies in countries of low economic development might have higher resistance to virtual team as their internet infrastructure is not well developed.

c. Scenario 3: Growing Adoption of virtual team
In the third scenario virtual team is growing even when there is low rapid economic development as the need for connectivity between interpersonal relationships override economic factor. This can be seen during the global pandemic crises where all countries regardless of their economic status need to use virtual team as there is no other alternative available for connectivity. According to Pathak (2015), virtual teams are used more in developing economies compared to developed countries for example in India (Shah, Russell, & Wilkinson, 2017). Moreover, Farrer (2020) claimed that virtual team should be able to help in economic growth through the way stop earn from ‘own’ and spend for ‘own’.

d. Scenario 4: Preferred and success in conventional teams
Scenario 4 implies the condition where there is high economic development but low connectivity between interpersonal relationships. This scenario happens when virtual team is regarded as non-substitutable to conventional teams. Regardless of the economic status, virtual team adoption will be low as conventional teams are regarded as superior in terms of motivation and team dynamics. According to Rienties, Tempelaar, Giesbers, & Segers (2008), conventional teams’ member are highly motivated by some extrinsic factors instead of intrinsic factors. Having good relationships among members classified as intrinsic factors might be outdated and rewards or incentives classified as extrinsic factors were more concerned. Moreover, Martin C. W. Walker (2020) claimed that conventional teams are generally more effective than virtual teams.

5.2 Technological Readiness of Virtual Team Adoption among Medium Sized companies

The results of this study indicate that medium sized companies in Malaysia has a high level of readiness to adopt virtual team (M=4.03). Both motivators (optimism & innovativeness) and inhibitors (discomfort & insecurity) are high level in TRI analysis. In Malaysia, infrastructures for the use of virtual teams are accessible and thus SMEs should take the opportunities to explore potential (Ebrahim, Ahmed, & Taha, 2010).

As noted by Rojas-mendez (2018), the age and education level of respondents as demographic variables are crucial attribute in TRI assessment where higher-educated individuals and younger people shows more desire to adapt to technologies. Based on personal information data from respondents, concluded that around 95% of respondents had at least STPM/ Matriculation/ Diploma/ Foundation level in educational accomplishment. Besides, data computed also show that 45.2% of respondents are under age of 30. Hence, there is a positive correlation between age and education level with readiness of adopt a technology (Eze, Awa, Chinedu-eze, & Bello, 2021).
6. Conclusions and Recommendations

These research objectives were attained through STEEPV analysis, scenario building and technology readiness index (TRI). There are 10 key drivers generated through STEEPV analysis and based on the mean of impact and uncertainty, four difference future scenario of virtual team adoption among medium sized companies which is mature adoption, resistance, growing adoption, and preferred and success in conventional teams were generated. Readiness of virtual team adoption was also measured by using technology readiness index (TRI), which indicate high level of central tendency among medium sized companies Malaysia to adopt virtual teams. It is evident that although there is lack of studies focusing on dynamics of virtual team in Malaysia, the readiness of medium-sized companies is high and the future scenarios of virtual team is bright. This study also provide some insights on problems faced in adoption of virtual teams.

7. Limitations

The study faced two main limitations. The first limitation is the lack of previous research studies on virtual team adoption especially in Malaysia. Even though virtual teams are known as emerging way for managing teams, availability of studies on its implementation was very limited. Besides, most of the studies investigate in broad topics like challenge, leadership, factors influenced and impacts. Research on readiness of adoption is not many. The second limitations for this study is number and selection of sample. Companies were not willing to participate, coupled with the sample selection that was only focused in Johor. Hence, compared with other precious research, the collected data has a lower response rate.

8. Suggestions for Future Research

The research’s main aim is to identify future trend and readiness of virtual team adoption among medium sized companies in Malaysia. Based on our finding, although technological readiness to adopt is high, actual readiness to implement remain questionable. In TRI analysis case, there are still high levels of discomfort and insecurity response by respondents. Thus, there are several recommendations to cope those limitations facing. First and foremost, future researchers may implement the mixed methodology which conduct interview and form survey while collecting the data. This not only allows researchers to understand some detailed regarding virtual team, also may obtain quantitative data for later stage analysis. Besides, respondent’s background should be considered by researchers to ensure as a factor of influences the accuracy and maturity of analysis has been used in the study.

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