

**SOCIAL SCIENCES & HUMANITIES**Journal homepage: <http://www.pertanika.upm.edu.my/>**Critical Factors Influencing the Effectiveness of Research Teams among Academicians****Wan Mohamed, M. F.* , Omar, Z., Ahmad, A. and Juned, R.***Department of Professional Development and Continuing Education, Faculty of Educational Studies, Universiti Putra Malaysia, 43400 UPM, Serdang, Selangor, Malaysia***ABSTRACT**

Work team is one of the common methods of doing research nowadays. The concept of work teams is seen as a special application of groups in business, industry, government, as well as education and healthcare settings, which lies at the foundation of the modern organization. This method allows team members to save their energy, time and resources. There are a lot of models and theories discussed on the work team. However, little attention has been given to developing a model of research work team in academic setting. Looking into the academician career, there are some aspects which are different from those who work in industrial setting, particularly in terms of their needs, job load, resources and outcomes. This paper focuses on the factors needed for an effective research work team in the academic setting. Using semi-structured interviews, the author asked the following question, "Based on your experiences, what are the important factors needed for a research team to function effectively?" Three main themes emerged during the interviews, and these were leadership, team members and support. The discussion considers the experiences of the respondents when involving themselves in a research team. Further discussion shows how this issue can assist academicians to work better in a team and to get more satisfaction in the future.

Keywords: Work team, teamwork, research team, academician

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INTRODUCTION

There has been an increasing movement towards using teams in most organizations in the last twenty years. Working in team is believed to be the best way to get better results or outcomes because team members with variety skills can share the information they possess (Parris, 2003).

This approach is taken to compete against each other in inventing something new and useful to the society. The universities around the world are also using the same approach in conducting their research. Numerous numbers of research teams from various universities are now competing and struggling to be the world-class university and to be among the best by conducting research in various disciplines, which can hopefully be invested for the future.

As in Malaysia, universities have also started to have the same trend. Up to now, a huge amount of allocation has been invested by the government and private institutions to create new knowledge to contribute to the society. Besides that, the government has also conferred research university status on four local universities, namely, Universiti Kebangsaan Malaysia (UKM), Universiti Malaya (UM), Universiti Putra Malaysia (UPM) and Universiti Sains Malaysia (USM). These universities are designated under the Ninth Malaysia Plan to be the country's first full-fledged research universities with the aim to create a new higher education culture in the country (The Star, August 2007). Public universities in Malaysia, especially these four universities, have placed strong ongoing commitments to the development and support of a research culture in their respective universities.

With the emphasis of strong research culture in universities, more and more lecturers engaged themselves in team-based research projects and thereby increased their involvement in working as a team. More often, most of them are team leaders leading

a research team in collaboration with other lecturers or they become a team member to a research led by their colleagues. Currently, many lecturers in the universities are involved in more than one research teams at the same time. Thus, working in teams forms an integral part of academic work among the lecturers in order to achieve research excellence in universities (Bishop *et al.*, 2000).

PROBLEM STATEMENT

This paper was specifically written to identify the important factors needed to ensure the effectiveness of research team among the academicians based on the personal experiences of the lecturers involved. Several research has been done to identify the factors contributing to unsuccessful project teams such as lack of monitoring and feedback (Slevin, 1987), lack of team commitment, lack of support from key stakeholders, lack of skilled professionals, unshared vision, communication issues, conflicts, and unclear line of project authority (Youker, 1999), as well as resistance to change, lack of a team culture, and inability of team members to work with others outside of their area (Brown, 1999). In his research, Giegerich (2002) found the barriers to project management which include design problems, cash flows issues, capacity changes, unacceptable quality of work, lack of management involvement, lack of teamwork, as well as lack of effective communication and conflict.

However, there is no trace of past research which focuses on finding important factors contributing to research team's success in academic setting among the academicians (Fox & Mahopatra, 2007; Bayerlein, Johnson & Bayerlein, 1995). Furthermore, little research has examined how working within a team impacts an individual (Parris, 2003) in academic setting. Thus, the objective of this paper was to uncover the important factors of research teams involving academicians in the academic setting in Malaysia.

METHODOLOGY

The data were collected using the quantitative interviews, and interpreted on a surface value. The researcher asked the question, "Based on your experiences, what are the important factors needed for a research team to function effectively?" The face-to-face interview approach and interviews through telephone call were used in this study. These approaches allowed the author to have control over the line of questioning (Creswell, 2003). The data collected were analysed descriptively.

Study Setting

The interviews were conducted in four Research Universities in Malaysia, namely, Universiti Putra Malaysia (UPM), Universiti Kebangsaan Malaysia (UKM), Universiti Sains Malaysia (USM) and Universiti Malaya (UM). The author carried out the interviews with the respondents from UPM, while enumerators were assigned and

trained to perform the interviews with those from the other universities.

Sampling

A total of 40 lecturers were involved in this study who had been purposively selected based on their vast experiences in research team since this study was done to identify the contributing factors to their success, and this was done through quantitatively interviewing forty selected experienced researchers. All the respondents are experts in various areas such as agriculture, computer science, educational studies, engineering, food science and technology, forestry, industrial technology and medical. The respondents were selected from four Malaysia's Research Universities and they have experiences conducting research in teams, either as project leaders or as co-researchers or both.

Analysis

The issues given for considering a factor as important by the respondents was to first analyze using word frequency counts to identify words of potential interest. This was then coded and categorized based on themes drawn from the answers provided. Coding and categorization is an iterative process; the codes and categorization would be discussed and reviewed several times to establish accuracy and consistency. Codes were changed while new ones were also developed during this stage. When there were inconsistencies, the researchers discussed the data and jointly arrived at an

agreement as to whether the data should remain in the current category or be grouped into a different category.

FINDINGS AND DISCUSSION

- Explanation on what is going to be presented

As shown in Table 1, the respondents are from four Research Universities, Universiti Kebangsaan Malaysia (ten respondents), Universiti Malaya (eight respondents) Universiti Putra Malaysia (twelve respondents) and Universiti Sains Malaysia (ten respondents). In terms of their years of service, the respondents have had from one to 38 years, with an average year of service of 15 years. Meanwhile, 39 respondents (97.5%) have experienced working as a team leader and 37 of them have experienced working as a co-researcher (92.5%). Almost all of them (90%) have had

experiences working both as a team leader and a co-researcher.

Several important categories also emerged during the interviews, and these were grouped into three main themes, namely, leadership, team members and support.

Team Leadership

A large and growing body of literature has investigated on different aspects of leadership in work team (see for instance, Jong & Hartog, 2007; Bartram & Casimir, 2007; Taggar & Ellis, 2007; Sanders & Schyns, 2006; Harris, 2004; Merlo *et al.*, 2002; Cronshaw & Lord, 1987). During the interviews, ten respondents (25%) agreed that team leader plays an important role in a work team. They mentioned that team leader should be responsible in ensuring the effectiveness of the work team by

TABLE 1
Respondents' Background

Profile	Frequency	Percentage (%)
University		
Universiti Kebangsaan Malaysia	10	25.0
Universiti Malaya	8	20.0
Universiti Putra Malaysia	12	30.0
Universiti Sains Malaysia	10	25.0
Years of Service (x= 15.38, S.D.= 8.992)		
<10	15	37.5
11-20	15	37.5
21-30	9	22.5
>31	1	2.5
Has experience working as a team leader	39	97.5
Has experience working as a co-researcher	37	92.5
Has experience as a leader and a co-researcher	36	90.0

choosing the right team members to avoid unfair contribution and uncommitted team members; conducting continuous meeting so that the progress of the research project can be updated and monitored; discussing and overcoming any problems which arise among the team members as soon as possible to keep away from bigger problems later.

In their study, Jong and Hartog (2007) stated that leaders should influence their team members to do the best job as a team. According to them, there are several responsibilities of a leader in a team such as planning and organizing, problem solving, clarifying roles and objectives, informing, monitoring, motivating and inspiring, supporting, managing conflicts, etc. Beattie *et al.* (2005) emphasizes the idea of team leader conducting continuously project meeting. The team leader must ensure that the research team members are always given the latest information during the meetings to ensure that the focus is maintained throughout the project period and to keep the momentum.

Team members

In team members' theme, a lot of issues were brought up during the interview. All the respondents concurred that among the three, this particular theme is the most important to ensure the effectiveness of work team. The issues include receiving commitment, cooperation, cohesiveness, heterogeneity, time management, clear objectives and plan, mutual respect, communication, trustworthy and workload.

In their study, Larson and LaFasto (1989) described commitment as follows:

“...a sense of loyalty and dedication to the team. It is an unrestrained sense of excitement and enthusiasm about the team. It is a willingness to do anything that has to be done to help the team succeed. It is an intense identification with a group of people...” (pg. 63).

About 57.5% of the respondents said that commitment is the important issue in a work team which makes commitment the most crucial factor in this theme. This result has been proven by several researchers (e.g. Becker, 1992; Bishop & Scott, 1997; Bishop *et al.*, 1997) who found that the levels of an individual's commitment to the team and to the organizations are very crucial and related to many of the benefits associated with the teams. Furthermore, Becker and Billings (1993, as cited in Bishop, 2000) discovered in their research that team commitment is linked to extra-role behaviour and team performance (Scott & Townsend, 1994; Bishop & Scott, 1997; Bishop *et al.*, 1997). Commitment is much related to the time management issue. A team member who does not have a good time management will never have time to commit and focus in his or her work team.

The second mostly mentioned issue in this factor is cooperation among team members. This is important as 50% of the respondents brought up this particular issue during the interview. Cooperation

or collaboration is also known as working together. It is important that team members cooperate with each other to ensure that a project can be accomplished within the time given because good cooperation can reduce the amount of time spent on other activities. Moreover, cooperation will enhance both the motivation and effort of team members (Yeatts & Hyten, 1998). The respondents also believe that without cooperation within a work team, a lot of problems will surface and these cause the team members to struggle when doing their research project.

The next issue is related to cohesiveness, which includes the level of understanding and the chemistry or relationship between team members. Twelve respondents (30%) agreed that this issue should be considered as one of the important factors in ensuring the effectiveness of a work team. Past research revealed that a team with high level of cohesiveness has high level of trust among team members, good coordination, has less conflict and prefers supporting and collaborating with each other to achieve the team's objectives (Dobbins & Zaccaro, 1986; Mudrack, 1989). Dobbins and Zaccaro (1986) also stated that cohesiveness could create a positive impact on a work team; among other, active participation among team members creates a better interaction, decreases absenteeism among members and increases the feeling of self-respect among them. Verma (1997) mentioned in his book that team cohesiveness determines how strongly the team members feel bonded to each other.

Another issue arose from the interview is heterogeneity in team members' skills and experiences. Eleven respondents (27.5%) assumed that this particular issue is important in making sure the effectiveness of a work team. The research by Campion *et al.* (1993) indicated that heterogeneity has a positive effect on team performance because of the team members' various abilities and experiences which allow them to learn from each other. However, Pierce and Ravlin (1987) had a different point of view. They argued that homogeneity is better than heterogeneity because when a work team consists of members with the same skills and experiences, the team can function successfully and conflicts among them can be reduced. This finding, however, was disagreed by Jung and Sosik (1999) who claimed that even though conflict and dissatisfaction could possibly happen in a heterogeneity team, they assumed that the team would be more essential.

The other issue which is very common is the lack of time which has been a global phenomenon among researchers. Due to academicians' heavy workload and tight schedule, time management issue has been a phenomenon across the universities and it is often exaggerated by the published or perished phenomena some researchers are familiar with (Al-Jumaily & Stonyer, 2000). As discussed earlier, time management has a positive relationship with commitment. Without a good time management, a team member will never have time to commit and be focused in his or her work team. Eight

respondents (20%) were in agreement that time management is a crucial factor in a work team.

One of the issues that was discussed in this theme is receiving clear objectives and planning on what should be done and who should do it. Eight respondents (20%) thought that this particular factor is crucial in a work team. The respondents claimed that before starting a research work team, the team members should have a clear objective about their research project and then create a plan to achieve the objectives so that they could produce a quality research in the specific time given. Colenso (1997) suggests that the team objectives should be continuously reasserted, and this usually involves the processes of mission building, developing a shared vision and then resolving these into a set of strategic objectives.

Mutual respect and trustworthy are two issues that show level of bonding in a team. The only way to make people respectful or trustworthy is to respect and trust them. Trust, as in Yeatts and Hyten (1998), is a belief held by one team member about another. Verma (1997) concludes that an environment where team members are professionally satisfied, involved, motivated and have mutual trust should be created. In more specific, they should respect, trust and help each other to win. Seven respondents (17.5%) felt that mutual respect is important in a work team, while four respondents (10%) felt there must be trustworthiness. Trust does lead to open communication and hence help solve team problems, make

decisions and optimize team output. If there is a trust environment in a team, the members will voluntarily share their problems (Verma, 1997).

Lack of communication or ineffective communication between team members (even if they are really good) can cause failure in work team process and subsequent performance (Yeatts & Hyten, 1998). However, in this study, only six respondents (15%) realized the importance of communication. By communicating with other team members, they could share their ideas and feelings as this will contribute to increased team performance. So, without communication, a team will not function effectively (Ab Aziz, 2003). Ab Aziz (2003) also adds that an effective communication minimizes conflict, prejudice and misunderstanding problem which normally occur in a work team.

According to Beattie *et al.* (2005), avoiding participation in a lot of research or reducing academician workload can help the team to produce quality research outcomes because they can concentrate and focus on specific research project. In this way, the commitment of team member can be increased, apart from improving communications among members which will lead to exchanging ideas and cooperation. Beattie *et al.* (2005) also believe that communication and cohesiveness among team members can be built during the meeting. Besides that, workload sharing is another concern that was pointed out and discussed during the interviews. By sharing their workload, the effectiveness of a team

can be enhanced by avoiding social loafing (Campion *et al.*, 1993).

Support

The third theme which was highlighted during the interview is support. There are four issues in this theme, and these are support from department, material resources support, funding support and support from research assistants (RA/GRA/GRF). Nineteen respondents (47.5%) mentioned about the importance of support factors in ensuring the effectiveness of a work team. Several respondents complained that the procedures set by the University for researchers to use or to apply for research grant are too cumbersome which result in delaying of research progress. Besides that, the lack of material resources support will also cause a delay in a project.

Support from department or faculty (top management) is one of the issues which was mentioned by eight respondents (20%). In a study on knowledge workers, which included academicians, Campion *et al.* (1996) found a significant and high correlation between management support for teams and employees' judgments of team effectiveness. Higher performance was found in a team which is better connected with other parts of the organizations (Van Aken & Kleiner, 1997). The Dean or Head of Department should always show their concern over on-going research projects and should always help and support whenever the academicians need them regarding their research project. This kind of encouragement will increase the level of

motivation among the researchers as this will give them the confidence to perform more research in the future.

In the research done by Vinokur-Kaplan (1995), a positive relationship was found between material resources and collaboration and group interdependence. His study was investigation on the existence of confidential meeting rooms and the necessary equipment for the team to hold a productive and confidential meeting. The sufficiency of material resources is hypothesized to influence group effectiveness. This result is supported by a research by Hyatt and Ruddy (1997) who found that the overall success of a team critically relies on the team's access of necessary material resources. A study on team leaders by Doolen and Hacker (2002) also found that their respondents were very concern with getting resources needed by the team because to them it is very important to provide the necessary resources for their team to be successful. From the interviews, seven respondents (17.5%) had brought up the issue on research funding allocation. Besides funding support, support for material resources necessity was also mentioned by eight respondents (20%), especially for those who are working in the scientific field.

The resources discussed by the respondents included money, people, material, information and training (Doolen & Hacker, 2002). The uniqueness of this study is the findings in relation to the need of research assistants among academicians in conducting research. The research assistants in the academic setting are commonly

referred as Graduate Research Assistants and Graduate Research Fellowship which involve graduate students. Six respondents (15%) said that they needed research assistant to help them in accomplishing a research and a few of them stated that they would not take responsibility to conduct research if there was no research assistant provided for the particular research due to their heavy workload and busy schedule.

Table 2 shows the 15 issues that were mentioned during the interviews by the respondents. As stated earlier, the issues were grouped into three themes. The

'Yes' column shows the amount and the percentage of respondents who mentioned about the particular issue. On the contrary, the 'No' column illustrate the total number and percentage of the respondents who did not mention about the particular issue. Overall, it can be seen that commitment is the most important factor in the work team in the academic setting as mostly mentioned by the respondents.

Table 3 shows the number and percentage of the respondents' feedbacks on the issues that were gathered from the interviews according to the themes, namely

TABLE 2
Frequency table by issues/factors

Issues	Yes		No	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Leadership theme				
1. Team leadership	10	25.0%	30	75.0%
Team members' theme				
2. Commitment	23	57.5%	17	42.5%
3. Cooperation	20	50.0%	20	50.0%
4. Cohesiveness	12	30.0%	28	70.0%
5. Heterogeneity	11	27.5%	29	72.5%
6. Clear objective	8	20.0%	32	80.0%
7. Time management	8	20.0%	32	80.0%
8. Mutual respect	7	17.5%	33	82.5%
9. Communication	6	15.0%	34	85.0%
10. Trustworthy	4	10.0%	36	90.0%
11. Workload	1	2.5%	39	97.5%
Support theme				
12. Top management support	8	20.0%	32	80.0%
13. Material resources	8	20.0%	32	80.0%
14. Funding allocation	7	17.5%	33	82.5%
15. RA/ GRA/ GRF	6	15.0%	34	85.0%

TABLE 3
Frequency table by themes

Themes	Yes		No	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Team Leadership	10	25.0%	30	75.0%
Team Members	40	100.0%	0	.0%
Support	19	47.5%	21	52.5%

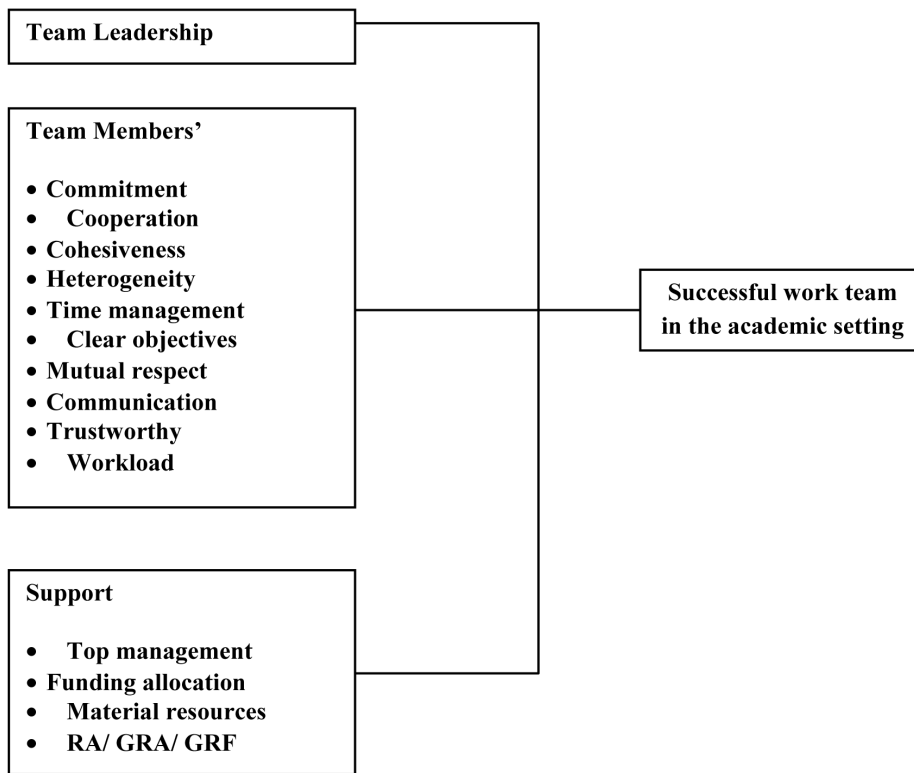


Fig.1: Research team success factors for academicians in Malaysia

leadership, team members and support. The table also reveals that all the respondents have mentioned about issues pertaining to team members which further confirm that team members' roles are very important in ensuring the effectiveness of a work team in the academic setting.

CONCLUSION

This paper discovers the important factors of research teams involving academicians in academic setting. The findings require a reconsideration of our understanding of work teams among academicians in the academic setting, particularly the experiences of the

individuals within these teams. The findings also showed that the issues in team members theme are the key in success factor in any academic research team. However, there are still a lot of limitations in every research project which the academicians should focus on so as to ensure that their projects can be accomplished without disappointment. Besides that, the top management or the faculty should also give particular attention to support so that every research team can produce quality outcomes which will hopefully contribute something useful to the society.

Based on the factors attained from the interviews and the review of literature on work team, the proposed model of research team success factor among academicians in the academic setting was developed. In short, the proposed model (see Figure 1) summarizes the factors which will create a successful work team among academicians in the academic setting. Nonetheless, this study is rather limited in terms of the number and scope of the respondents. Further investigations using with a larger number of respondents and various areas should be done to achieve better information.

From the findings of this study, the author hoped that this study could give some guidelines to the academicians on how they could work efficiently as a team. Furthermore, this study could hopefully extend the body of knowledge in work team, particularly for academicians in the academic setting.

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