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The Significance of Social Exchange Theory on the Internal Performance of the Malaysian Search and Rescue (SAR) Teams

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Abstract

The social exchange theory (SET) is a social form of exchange that includes tangible or intangible, material or nonmaterial goods between individuals with other individuals. The social exchange involves actions that relate to reward reactions from others. In short, social costs and rewards affect human decisions and behavior. In this paper, SET highlights the reciprocal relationship between the internal factors of Search and Rescue (SAR) team performance, which are team communication, team leadership, and team time management. The essential belief of SET is that individuals in the team enter into and maintain the relationship with the expectation to gain a net positive value. This study involved 209 SAR teams from Peninsular Malaysia. Data were collected using the survey method. Respondents' demographics and descriptive data such as percentages and frequencies were analyzed using the Statistical Package for Social Sciences (SPSS) Version 26 software for Windows. For deeper analysis and hypothesis testing, data were analyzed using the Structural Equation Modelling (SEM) technique using partial least square analysis by SmartPLS. Analysis revealed that only team communication and team time management were found to be significantly related to SAR team performance. Discussions are provided at the end of this paper to justify the finding.

Keyword: Social Exchange Theory, Team Performance, SAR teams, Malaysia.

Introduction

Search and rescue (SAR) team performance refers to the ability of SAR teams to complete its mission by using their skills, knowledge and experience within targeted time. SAR teams consist of a group of individuals with expertise, knowledge and experience in the SAR field who contribute to carry out SAR operations successfully (Griffith et al., 2003). SAR teams face various challenges including reducing the risk of loss of life and a demanding and unsafe working environment. SAR teams possess the necessary skills and knowledge to find persons in distress situations such as natural disasters and mountain or desert rescues (Zailan, Alsagoff, Awang, & Mohd, 2013). In Malaysia, the designated teams of the Fire and Rescue Department of Malaysia (FRDM) often carry out SAR missions. The FRDM has its own established SAR teams, which are designed to manage SAR operations on a large scale, finding and rescuing people missing and disaster management (Official Website: Jabatan Bomba dan Penyelamat Malaysia, 2020). In line with FRDM vision to be a high-performance fire and rescue organization, the SAR team plays an essential role in boosting the SAR team's performance. SAR team performance generally refers to the SAR team's efficiency and effectiveness in carrying out SAR operation to ensure the set goals can be achieved successfully (Idris et al., 2019).

The Role of Social Exchange Theory (SET) on Internal Team Performance of SAR Teams

SET is based on the premise that a person will act in accordance with the rewards and punishment that they are most likely to receive (Cook & Rice, 2006). In that context, rewarded habits would possibly cause repetitions and vice versa. Emerson (1976) claimed that an action would continue to flow only if it is contingent upon a valued return. SET was also built on the idea that, in performing behaviors, there are elements of reciprocity as an exchange rule (Cropanzano & Mitchell, 2005). In the context of team performance, this means that for any behavior performed by team members, they also hope to earn some sort of rewards in exchange. As such, social exchange is expected to occur when team members feel that they have received effective team inputs. For instance, team members will be more motivated to achieve performance when they feel that the other members provide better quality relationship for an exchange.

Besides, SET is the idea of reciprocation in a relationship where individual actions are based on a cost-benefit analysis, which explains the relationship between teams, leaders, and organizations. SET outlines that teams expect to be treated in a particular way by the organization and tailor their actions based upon this perception and act in accordance to promote the most beneficial outcome from the employee's perspective (Colquitt et al., 2013; Rhoades & Eisenberger, 2002). SET promotes a two-way relationship, which is a positive whereby action will lead to a high level of team performance. It will then directly provide benefits for the organization too. In addition, SET also clearly expresses a useful guideline to explain the relationship between leader and members. Hence, team performance is a combination of feeling good with positive action. Members who feel motivated will boost the spirit of the team to contribute positive feedback to the organization. In the context of SAR, teams that are motivated will willingly carry out SAR missions at their best (Qomariah et al., 2020).

The social exchange theory affects SAR team performance in a couple of ways. First, it projects that team internal factors will increase the team's outputs. For instance, social exchange assumes that team members' relationship with other members (or their leaders) will cause team motivation to increase. This is logical as a team's supportive relationship is pivotal to it's performance. Secondly, teams will repay what they have received. In this context, team communication and team leadership are bound to exchange within the SAR team as an obligation to their job responsibility. SAR teams will repay what they have received by doing their best in carrying out SAR missions. They will complete the SAR mission in any circumstances (Sharifah et al., 2012). Therefore, based on these assumptions, social exchange theory is seen as important to support the relationship between SAR team internal factors and SAR team performance. In the context of this paper, SAR team internal factors will include team communication, team leadership, and team time management.

Team Communication and SAR Team Performance

According to Liu et al (2020), team communication is the interaction between one individual with another individual in a team. Good team communication results in high team performance (Liu et al., 2020). When a SAR team can understand the instructions given by their leader, the SAR team can follow all the instructions. For instance, SAR teams must have a clear understanding of the information given by the team leaders. Examples of such information are the physical state of the victims, how long the victims have been missing and the possible routes that might have been taken by the victims, which increases the possibility of the SAR teams finding the victims. Teams build trust, loyalty, and mutual promise as long as the leader and members stand by the particular rules of an exchange. Hence, the members will decide to perform well for their organization. In this study, SET matches with team communication. If the team leader can transfer clear information to them, guide them, and support them, they will act their best in conducting SAR operations since a good leader will produce good followers (Gruman & Saks, 2011). When members of SAR teams expect their leader to communicate to them the vision and inspiration needed to perform, and they perceive team support from other team members, they will become motivated, which will increase their sense of trust towards the team.

Team Leadership and SAR Team Performance

Besides team communication, SET also affects SAR team performance through team leadership. In the context of SAR, team leadership is very important, as leaders are responsible to set the team's direction and goals.

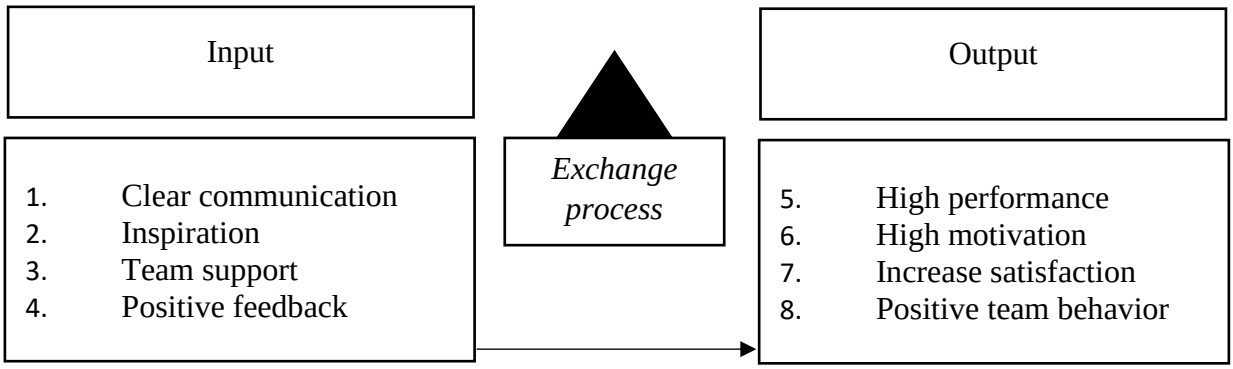

Figure 1. The input and output flow of SET

When the team leader can influence the team members by giving guidance and direction for team members to achieve the objectives, it leads to a rise in team performance. Therefore, SET can be used to support the leadership-performance relationship because good leadership will produce good team performance. Team members who are satisfied with the direction and support they receive from team leaders will feel motivated to work harder to achieve high team performance.

Based on Figure 1, the exchange process occurs when the SAR team received clear communication from the SAR team leader. For instance, the SAR team received clear communication from their leader. The SAR team leader was able to transfer a piece of clear information during SAR operation such as clear delegation of task. During a flood disaster, the delegation of tasks from the leader is very important. The leader should arrange various strategies such as a request for logistic assistance from other SAR teams in the nearest states, request assistance, launch a victim evacuation operation, and humanitarian assistance (Mustafa, 2020). Hence, when the SAR leader able to give a clear delegation of the task and clear instructions to SAR team members, SAR team members will alert and know their task during the operation. Therefore, the output is they will perform better in SAR operation.

Besides, another situation of the exchange process of SET is when there is an element of inspiration. SAR team leader should be someone that able to make a decision (Wang, et al., 2014). Decision-maker refers to an individual that able and has a responsibility in deciding terms of the individual decision or a group decision (Wang et al., 2014). Even though a SAR team leader has an authority of power in decision-making, but a SAR team leader needs to consider a variety of aspects such as theoretical, scientific, or practical from Section Chief or expert manpower and other members. The decision-making made by a SAR team leader is very important because it can give a few impacts such as safety, life, and cost, short-term and long-term of the SAR operation (Majlis Keselamatan Negara, 2019). Hence, when SAR team leader can consider an idea and opinion from team members, the outcome from this exchange process is team members will feel they have the right to voice out their opinion and directly SAR team member will feel motivated because the team leader appreciates their opinion.

Team Time Management and SAR Team Performance

Besides team communication and team leadership, team time management is one factor that affects SAR team performance. Team time management refers to the ability of the team to manage their time by prioritize and organize tasks that allow team to improve their time in completing the task and achieve their goals (Ma et al., 2020). It also supported by Rapp et al (2013), in which team time management reflects a group of behaviors toward an effective allocation of time in order to complete the task and achieve goal. Team that have effective time management skills able to manage time resources (such as tight schedule and urgent or emergency task) and goal progress successfully rather than those team with poor time-management (Hafner & Stock, 2010; Ma et al., 2020; Rapp et al., 2013). Besides, past studies also agree that team with effective time management skills can always allocate time successfully (Macan et al., 1990). They are experts in prioritizing the most urgent and important task and aimed to complete the task within a period of time (Ma et al., 2020; Rapp et al., 2013).

Moreover, a team with effective time management skills is likely to monitor their goal progress by differentiating between the primary and invasive tasks (Rapp et al., 2013). Therefore, team time management is about the team's ability to distinguish between their primary and supporting responsibilities about their tasks (Yener et al., 2020). Even though team members faced the same work or task, but the process in conducting the task are different and have different time management skills that may be contribute to different performance levels (Yener et al., 2020). These differences clarify by the differences in their problem-focused coping skills (Yener et al., 2020). For example, the team depends on their abilities and expertise to take action based on situation and purpose during the problem-coping process. This is because some team member might have expertise in that particular situation but others are not. Hence, the team will set priorities based on their primary and supporting responsibilities (Yener et al., 2020; Joyce, et al., 2019).

Methodology

The quantitative method was used to achieve the objectives of this study. This study was done on selected search and rescue teams in Malaysia, where data were collected from 850 rescue team members (209 team units). Only team members who are involved in rescue missions were selected for this study. The sample size is decided following the suggestions made by (Reinartz et al., 2009). Self-administered questionnaires were distributed to team leaders and their respective members in a non-fixed setting. This research used the purposive sampling technique. This technique was selected to focus on the target group, i.e., frontliners' teams that carry out SAR missions.

Aggregation of Data

After the measurement model has been analyzed for its reliability and validity, and before the structural model can be further examined, the data at the individual level had to be aggregated to the team level. This is in line with the suggestions made by (Jayasingam et al., 2013). For a multi-level research analysis, such as teams, it is a must to aggregate the data from individual respondents to team responses so that further analysis can be done (Jayasingam et al., 2013). The data aggregation is performed by combining team members' scores to represent the team's total score. Nonetheless, according to James et al (1984), before data can be aggregated, all individual data must be checked for their level of inter-rater agreement by using the multi-item estimator (also known as the r_(WG(J)) index). All 209 teams in the data sets of this study had a strong level of agreement for items in the questionnaire ranging from 0.9393 to 1.0883 (above 0.7).

Data Analysis

The data analysis, respondents' demographics, and descriptive data such as percentages and frequencies were analyzed using the Statistical Package for Social Sciences (SPSS) Version 26 software for Windows. For more in-depth analysis and hypothesis testing, data in this research was analyzed using the Structural Equation Modelling (SEM) technique using partial least square analysis by SmartPLS Version 3 (Ringle et al., 2005). The model's strength was also evaluated via R2 and Q2 statistics (Cohen, 1988; Chin, 1998).

Team Leaders' Profile

Most of the team leaders were 41 to 50 years old, representing 36.5% out of 85 team leaders. The team leaders were mostly male, amounting to up to 83 male leaders representing 97.6%.

In addition, 95.3% of team leaders were Malays, amounting to 81 leaders out of 85 team leaders. The rest were Indian. 82 out of 85 team leaders were married, representing 96.5%. Regarding their academic qualification, the majority of the team leaders were Sijil Pelajaran Malaysia (SPM) holders' equivalent to 56 leaders out of 85 team leaders (65.9%). Besides, most of the team leaders were Senior Fire Officer II to Leading Fire Officer (KB22-KB26), amounting to 61 team leaders representing 71.8%. Furthermore, most team leaders worked for 21-30 years, which is equivalent to 32 team leaders out of 85 team leaders (37.6%). 22 team leaders out of 85 team leaders stated that the size of their team was range from 11 to 15 members. Meanwhile, 32 out of 85 team leaders have SAR experience between 21-30 years.

Team Members' Profile

Most team members were between 20 to 30 years old, representing 33.3% out of 765 team members. Team members were primarily male, amounting to up to 743 male members representing 97.1%. 97.8% of the team members were Malays, amounting to up to 748 out of 765 team members. The rests were other races and Indians. 618 out of 765 team members are married, representing 80.8%. Regarding their academic qualification, the majority of the team members are SPM holders' equivalent to 592 members out of 765 team members (77.4%). Besides, most of the team members were Fire Officer to Auxiliary Fire Officer (KB19-PBB), amounting to up to 573 team members representing 74.9%. In addition, most team members have a working experience of 1-10 years for the length of service, which is equivalent to 295 team members out of 765 team members (38.6%). 227 team members out of 765 team members stated that the size of their team was between the range of 11 to 15 members. 295 out of 765 team members have SAR experience between 1-10 years.

Hypothesis Testing

The relationships between the independent variables (exogenous variables) and the dependent variables (endogenous variables) were examined. A nonparametric bootstrapping method was performed in order to analyze the path coefficients for significance. t-value was obtained, and Table I, Table II and Table III exhibit the results and decisions for each proved hypothesis.

Table 1
Path Coefficient for the Internal Team Factors and SAR Team Performance

Hypothesis	Relationship	Beta	SE	t-values	p-values
1 (supported)	Team communication -> SAR team performance	0.206**	0.059	3.511	0.000
2 (not supported)	Team leadership -> SAR team performance	0.067	0.082	0.816	0.415
3 (supported)	Team time management -> SAR team performance	0.293**	0.090	3.264	0.001

[a] Note: Beta and t values are computed via bootstrapping procedure with 209 cases and 850 samples; **p<.01 (2.33), *p<.05 (1.645).

Table 2
Predictive Relevancy

Endogenous variables	Q^2	R^2
SAR Team Performance	0.545	0.719

Table 3
The Goodness of Fit (GoF)

Variables	Communality	R^2	
Team communication	0.360		
Team leadership	0.823		
Team time management	0.691		
SAR team performance	0.730	0.719	
GoF			0.705

*Note: GoF = Square Root (AVE Communality * AVE R2)*

Disscusion and Conclusion

SET relates to SAR team performance in various ways. SET is the area of any social form of exchange that includes tangible or intangible, material or nonmaterial goods between individuals with other individuals. When team members received input from the team leader, the exchange process will take place and produce output. First, SET is the relationship between team leaders and team members. When team members have a clear understanding of team leaders' information, they will perform better (Gruman & Saks, 2011). Secondly, SET is the idea of reciprocation in a relationship where individual actions are based on a cost-benefit analysis, which explains the relationship between teams, leaders, and organizations. Hence, SET predicts team behaviors as members will expect to receive good rewards in return for the good behaviors they have shown to the team. As such, social exchange is expected to occur when team members feel that they have received effective team support. Although leadership was not directly linked to internal team performance, it is important to understand the nature of SAR missions. One potential reason for this insignificant relationship (β = 0.067,

P>0.01) links to the work environment of each SAR team during a rescue mission. In a rescue mission, the team leader is not in a fixed setting (Ismail et al., 2021). Any team member can become a leader, as one of them is appointed to lead the mission on the spot at the incident location, based on their skills to handle a particular mission or incident. In this context, future studies are encouraged to look at the effects of immediate leadership on SAR team performance.

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