

ความสัมพันธ์ของการปฏิบัติการจัดการคุณภาพโดยรวม (TQM) ต่อการส่งเสริม การพัฒนานวัตกรรมในอุตสาหกรรมอาหาร

The Relationship of Total Quality Management (TQM) Practices on Promoting Innovation Development in The Food Industry

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บทคัดย่อ

งานวิจัยเรื่องความสัมพันธ์ของการปฏิบัติการจัดการคุณภาพโดยรวม (TQM) ต่อการส่งเสริมการพัฒนานวัตกรรมในอุตสาหกรรมอาหาร มีวัตถุประสงค์เพื่อศึกษาความสัมพันธ์ของการติดต่อสื่อสารของพนักงานต่อการส่งเสริมการพัฒนานวัตกรรมในอุตสาหกรรมอาหาร เพื่อศึกษาความสัมพันธ์ของภาวะผู้นำของพนักงานต่อการส่งเสริมการพัฒนานวัตกรรมในอุตสาหกรรมอาหาร และเพื่อศึกษาความสัมพันธ์ของการฝึกอบรมของพนักงานต่อการส่งเสริมการพัฒนานวัตกรรมในอุตสาหกรรมอาหาร งานวิจัยนี้เป็นงานวิจัยเชิงปริมาณ โดยการใช้แบบสอบถามปลายเปิดเป็นเครื่องมือการวิจัย ด้วยวิธีการสุ่มอย่างง่ายจากกลุ่มตัวอย่างจำนวน 204 คน ที่เคยมีประสบการณ์ในการทำงานในอุตสาหกรรมอาหารประเทศอินเดีย สำหรับสถิติที่ใช้ ประกอบด้วย สถิติเชิงพรรณนา ประกอบด้วย ความถี่ ร้อยละ ค่าเฉลี่ย และส่วนเบี่ยงเบนมาตรฐาน และสถิติเชิงอนุมาน คือ การวิเคราะห์การถดถอยเชิงพหุ ผลการศึกษาพบว่าความสัมพันธ์ของการติดต่อสื่อสารของพนักงานต่อการส่งเสริมการพัฒนานวัตกรรมในอุตสาหกรรมอาหาร โดยรวมมีค่าเท่ากับ 0.266 พบว่า การติดต่อสื่อสารของผู้จัดการ และการติดต่อสื่อสารของพนักงานมีต่อการส่งเสริมการพัฒนานวัตกรรมในอุตสาหกรรมอาหาร ยกเว้นการติดต่อสื่อสารระหว่างพนักงาน ความสัมพันธ์ของภาวะผู้นำของพนักงานต่อการส่งเสริมการพัฒนานวัตกรรมในอุตสาหกรรมอาหาร โดยรวมมีค่าเท่ากับ 0.408 พบว่าภาวะผู้นำแบบพฤติกรรม และภาวะผู้นำแบบการเปลี่ยนแปลงต่อการส่งเสริมการพัฒนานวัตกรรมในอุตสาหกรรมอาหาร ยกเว้น ภาวะผู้นำแบบคุณลักษณะ และ ความสัมพันธ์ของการฝึกอบรมของพนักงานต่อการส่งเสริมการพัฒนานวัตกรรมในอุตสาหกรรมอาหาร โดยรวมมีค่าเท่ากับ 0.316 พบว่าการฝึกอบรมแบบการฝึกปฏิบัติงานไปพร้อมการทำงานจริงมีต่อการส่งเสริมการพัฒนานวัตกรรมในอุตสาหกรรมอาหาร ยกเว้นการฝึกอบรมแบบออนไลน์ และการฝึกอบรมแบบการหมุนเวียนงาน

คำสำคัญ: การจัดการคุณภาพ, การสื่อสาร, ความเป็นผู้นำ, การฝึกอบรม, การพัฒนานวัตกรรม

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Abstract

The research entitled “The Relationship of Total Quality Management (TQM) Practices on Promoting Innovation Development in The Food Industry” has objective to study the relationship of employees’ communication practices on promoting innovation development in the food industry; to study the relationship of leadership practices on promoting innovation development in the food industry; and to study the relationship of training practices on promoting innovation development in the food industry. This research was the quantitative research by using the close-ended questionnaire set to be an instrument. The simple random sampling technique was applied for 204 samples, who have experience in food industry in India. The statistics used for the study was composed of the descriptive statistics in terms of frequency, percentage, mean, and standard deviation; and the inferential statistics was the multiple regression analysis. The results found that the relationship of employees’ communication practices on promoting innovation development in the food industry has a value of 0.266 in the aspects of manager communication and subordinate communication; except, peer communication. The relationship of leadership practices on promoting innovation development in the food industry has a value of 0.408 in the aspects of behavioral theory and transformational theory; except, trait theory. The relationship of training practices on promoting innovation development in the food industry has a value of 0.316 in the aspect of on-the-job training; except, online training and job rotation.

Keywords: Total quality management, communication, leadership, training, innovation development

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Introduction

Total Quality Management (TQM) and innovation development are seen as the most important foundations for gaining a competitive advantage with studies demonstrating that they have helped a significant number of businesses in terms of increased profitability and market share. (Abdul, Ghani & Abdallah 2019). Innovation appears to be a critical component of growth since they open up new markets and generate income along the way. Innovation management has the potential to not only transform an organization but also benefit and redefine it via the diffusion of new ideas. There are competing ideas on the influence of TQM on innovation, which is dependent on both the specific quality management features under discussion and the type of innovation. TQM is the practice and concept of sustaining product quality. It may change from one business to the next, but the purpose of applying TQM is the same. The majority of companies who use TQM have seen its benefits in a variety of ways, ranging from product quality to monetary performance improvements. Strategic initiatives for TQM are lacking in the Indian food business. The inaccurate functioning of TQM procedures and strategies resulted from the failure of proper supervision (Joshi, 2018). Food processing capability has deteriorated, resulting in a reduction in food quality. This occurred as a result of the employees' lack of training and insufficient expertise. Employees' capacity to use relevant and current tools, equipment, and technology suited to their tasks was also cited as a source of dissatisfaction by 72 percent of employers (FICCI, 2010). The examples of relevant research findings to support this article such as Hoang, Igel and Laosirihongthong (2006) confirmed the results of previous studies that considered TQM as a set of practices. It confirmed that TQM – considered as a set of practices – has a positive impact on the firm's innovativeness. It discovered that not all TQM practices enhance firm innovativeness. Only leadership and people management, process and strategic management, and open organization showed a positive impact on the firm's innovation performance and Bon and Mustafa (2014) investigated the impact of Total Quality Management-based People Management practices TQM-PM on Administrative innovation in service Small and Medium Sized Enterprises (SMEs) in Malaysia. The result showed Employee involvement and Training have positive impact on administrative innovation, while Employee empowerment showed no impact. Findings of this study help managers of service SMEs to focus on the TQM-PM as administrative innovation resource.

This study aims to explore the factors that have a direct effect on innovation development in employees working in the Food industry, in India. As limited research has been conducted in regards to all the TQM principles, a gap remains in the previous studies. To study the components that impact innovation development, the research is divided into three categories of independent variables: 1) Communication 2) Leadership, and 3) Training. The sub-variables in Communication practice consist of Manager communication, Peer communication and Subordinate communication. Sub-variables in Leadership practice consist of Behavioural theory, Trait theory and Transformational theory. Job Training, Online Training and Job rotation are sub-variables under Employee training. While Innovation development acts as the dependent variable.

Objective of Study

The objectives of this study were presented as follows:

1. To study the relationship of employee communication on innovation development in the food industry.
2. To study the relationship of employee leadership on innovation development in the food industry.
3. To study the relationship of employee training on innovation development in the food industry.

Literature review

Total Quality Management (TQM)

Total quality management (TQM) is a continuous process of identifying, mitigating, and eliminating manufacturing faults, as well as improving supply chain management, enhancing customer satisfaction, and guaranteeing correct employee training. Its purpose is to involve everyone in the production process and share responsibility for the final product or service's quality. According to Zang et al., (2018) structural flexibility, autonomy, cooperation, and information sharing, as well as control, which is an inherent aspect of any TQM program, promote organizational innovation growth, Innovation

Innovation is defined as the introduction of a new product or a new quality of a product, a new production technique, a new market, and/or a new supply source in the industry. Internal elements (such as types of strategies, leadership, performance system, company, structure, human resource management, and communication) and external variables (such as regional environment and industry) may all influence organizational product innovation. Product innovation success and firms' capacity to enhance their innovation processes have quickly become critical requirements for competitive advantage and long-term growth (Prajogo, 2015).

Total Quality Management & Innovation

TQM and innovation development in a company may help cut costs, expand market prospects, and lower competition levels, all of which can help the company operate better. TQM methods will boost innovation performance by allowing organizations to have a structure in place that allows them to bring in new ideas and keep them operating. TQM has an impact on innovation in two ways. First, it may establish systems and cultures that offer a conducive environment for businesses to develop. While the second viewpoint is that TQM may be a barrier to innovation since the organization relies on tried-and-true processes and prefers to sell items based on consumer preferences.

Innovation in the Food Industry

A food company's variety of innovations can range from a truly original concept to the most basic development, and depending on its novelty degree, can take the shape of technical development, the simplest product or system, or a breakthrough that needs new knowledge and technology (Cheng & Chen, 2013). A food innovation process can produce a novelty (e.g., a new flavoured chocolate bar), an improvement (e.g., incremental improvements in instant soup), or a fundamental change (e.g., a major shift in instant soup) (e.g., the development of

functional foods). Total quality management and innovation have the same goal: to unite the company's purpose and function to satisfy customers and strengthen the company's competitive advantage by improving workers' roles in management and business processes.

Factors and Innovation Development

The communication factors reviewed in this research are as follows:

Manager communication

One of the most prevalent issues in today's enterprises is a lack of adequate and appropriate communication. The supervisors' role should not be overlooked when examining the consequences of creative behavior since they frequently play a major part in the process of workers' innovative behavior (Sijbom et al., 2015). Employees' evaluations of interaction supportiveness from their superiors boosted both their commitment to companies and their workplace engagement.

Peer communication

As individuals of an organization establish their bonds with one another, they develop mutual trust and a readiness to share information, potentially increasing the efficiency of knowledge transfer. Perry-Smith and Mannucci (2017) investigated the many stages of the creative process, including colleague idea support, the effects of knowledge flow, and the organization's shared vision.

Subordinate communication

Social exchange procedures, which are essential in the development of a relationship between leaders and followers, can produce emotional weariness and employee flourishing (Lavelle et al., 2015). Internal communication is the creation and maintenance of communication systems between employers and workers. It is the exchange of ideas, information, attitudes, and emotions amongst individuals.

The leadership factors reviewed in this research are as follows:

Behavioral theory

Personal values are associated with motivation and thereby aid in the understanding of behavior. The impact of social capital on employee creative behavior shows that improving employee knowledge transfer to better understand "knowledge inflows and outflows" at work might raise the chances of employees engaging in inventive behavior (Kumar et. al., 2018).

Trait theory

Personal values are directly tied to motivation and so serve to explain an individual's distinguishing characteristics (e.g., goals, beliefs, values, scripts). When a leader develops an inventive environment or incentive system to encourage people to be more inventive and apply innovation and creativity in their work, they provide intellectual stimulation (Talapatra et. al., 2019)

Transformational theory

Transformational leadership and the workplace environment have diverse effects on employee innovation capabilities (Tuckey and Chen, 2017). Transformational supervisors promote workers' creativity to overcome complex issues in a task, achieve uniqueness, and share goals by developing human capital rather than psychological capital.

The training factors reviewed in this research are as follows:

On-the-job training

On-the-job training returns are a helpful metric of training productivity and a motivator to engage in training and human capital building. Basic training ideas focus on providing inputs for employees based on relevant theories and taking into account issues like efficiency, employee differences, and continuous progress (Diab & Ajlouni, 2015).

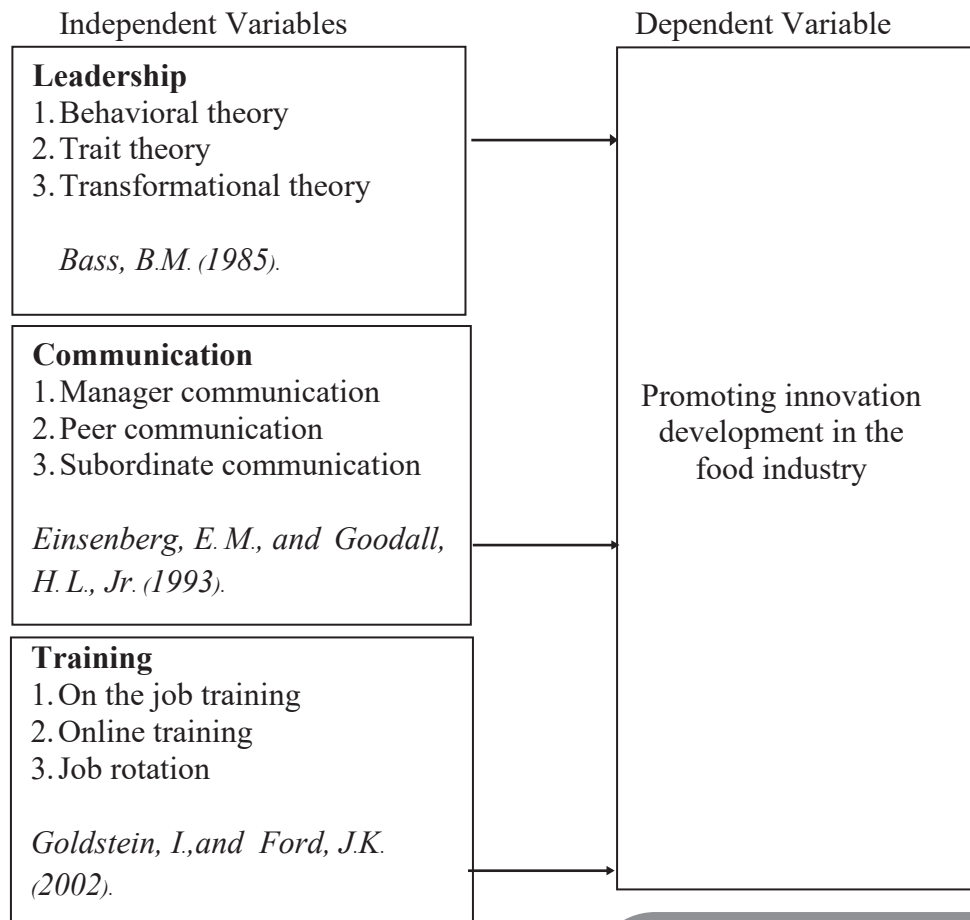
Online training

Since the adoption of the blended learning course format (Jamieson, 2016) and the introduction of online platforms, industrial advisors from remote locations have been more readily supplementing local advisors, diversifying the industries from which projects are offered and giving the course an international context.

Job rotation

The development of a quality system through applying TQM comprises effective strategy, staff development, staff training, the introduction of products and services, quality improvement and enhancing the business processes (Miterva et al., 2019)

Research Conceptual Framework



Research Hypothesis

1. There is a significant relationship of employee communication on innovation development in the food industry
2. There is a significant relationship of employee leadership on innovation development in the food industry
3. There is a significant relationship of employee training on innovation development in the food industry

Research Methodology

Scope of Research

The research for this study was conducted by an online survey to study the respondent's attitudes and behavior toward the variables. The survey consists of close-ended questions, as these types of questions apply to quantitative data collections. The questionnaire was divided into five parts: the demographic data question, communication practice, leadership practice, training practice and innovation development.

Population and Sample

A random sampling technique was used in this survey to collect the samples as follows: The 204 samples were to be collected, as suggested by Yamane's Table (1967).

The population was employees currently working or having previous experience in the food industry or allied sector in India.

Data Collection

The researcher distributed the self-completion questionnaires through an online format, using Google Forms, to the participants in the selected area in May 2021.

Data Analysis

The following are the statistical tools used for data analysis:

Descriptive Statistics: frequency, percentage, mean, and standard deviation were the components of descriptive statistics. The demographic data of the respondents were analyzed using these statistics. The information included age, gender, education, experience etc. A descriptive statistic was used to analyze and summarize the characteristics and observations of the data and presented in the form of percentages.

Inferential Statistics: It is composed of multiple regression analysis tests. These statistics were used to interpret the meaning of the data, and the relationship between the variables. The hypotheses were tested and the relationship between the independent variables was investigated using inferential statistics, which were communication, leadership and training, and the dependent variable, which was innovation development.

Content Validity

The reliability test was conducted with a volunteer sample group of 30 respondents. The data from the questionnaires were analyzed by using Cronbach's Alpha in the statistical software, with total reliability of 0.923. The required value to be accepted is 0.7-1.00.

Reliability

The online questionnaire was checked for validity and approved by a field specialist in this study, Assoc. Prof. Dr. Suthinan Pomsuwan, a professor at Bangkok University, in Bangkok, Thailand.

Results

Demographic Data

The majority of the respondents in this study were Male (62.7%), followed by 37.3% of Females. Most of the respondents were aged 18 to 30 years old (77.9%), with the second-highest from the age group of 31-40 years (14.2%). The majority of the respondents hold a Master's degree (58.3%) with 77.5% of the total respondents being employed full-time or self-employed in the food industry. 81.4% had an experience of 1 to 5 years while only 13.2% had an experience of over 11 years in the food industry. A major portion of the respondents is working in a company belonging to food processing (60.3%). Also, a large group of respondents are working at a multinational company (59.3%). 59.8% of respondents have served in a middle management position followed by 28.9% of employees who are working in an entry-level position.

Analysis of Communication Practice, Leadership Practice, Training Practice and Innovation development

Analysis of TQM Practice (Communication)

Table 1 Mean and Standard Deviation of Communication Practices

Sub-variables	Mean	Std. Deviation	Interpretation
1.1 Manager communication	4.25	0.86	Strongly agree
1.2 Peer communication	4.12	0.99	Agree
1.3 Subordinate communication	3.87	1.08	Agree
Total	4.08	0.97	Agree

From table 1, it can be seen that most respondents strongly agree with effective communication with the manager ($\bar{x} = 4.25$, $SD = 0.86$). The results display that respondents agree with effective peer communication in their organization ($\bar{x} = 4.12$, $SD = 0.99$). Most respondents also agree with subordinate communication ($\bar{x} = 3.87$, $SD = 1.08$) in their

workplace. Overall, the mean for communication practices is 4.08 (agree), and the standard deviation is 0.97.

Analysis of TQM Practice (Leadership)

Table 2 Mean and Standard Deviation of Leadership Practices

Sub-variables	Mean	Std. Deviation	Interpretation
1.1 Behavioral Theory	4.26	0.83	Strongly agree
1.2 Trait Theory	4.33	0.82	Strongly agree
1.3 Transformational Theory	4.36	0.83	Strongly agree
Total	4.32	0.83	Strongly agree

From table 2, it can be seen that most respondents strongly agree with all the three sub-variables under the leadership practice. A large number of respondents in this study strongly agree with the Behavioral theory in their job ($\bar{x} = 4.26$, $SD = 0.83$). The mean interpretation of the sub-variable Trait theory is also strongly agreed ($\bar{x} = 4.33$, $SD = 0.82$). Lastly, most of the respondents strongly agree with the Transformational theory of leadership in their organization as well ($\bar{x} = 4.36$, $SD = 0.83$). Overall, the mean leadership practice was 4.32 (strongly agree), and the standard deviation is 0.83.

Analysis of TQM Practice (Training)

Table 3 Mean and Standard Deviation of Training Practices

Sub-variables	Mean	Std. Deviation	Interpretation
1.1 On-the-job training	4.19	1.00	Agree
1.2 Online training	4.10	1.02	Agree
1.3 Job rotation	4.05	1.03	Agree
Total	4.11	1.01	Agree

From table 3, it can be seen that most respondents agree with all the three sub-variables under the training practice. It can be observed that the majority of the respondents of this study agree with on-the-job training ($\bar{x} = 4.19$, $SD = 1.00$). The data also shows that the respondents agree with online training at their organization ($\bar{x} = 4.10$, $SD = 1.02$). Lastly, the respondents also agree with job rotation at their workplace ($\bar{x} = 4.11$, $SD = 1.03$). Overall, the mean for training practice is 4.11 (agree) and the standard deviation is 1.01.

Analysis of Innovation Development

Table 4 Mean and Standard Deviation of Innovation Development

Dependent variables	Mean	Std. Deviation	Interpretation
Innovation development	4.32	0.85	Strongly agree

Table 4 shows the data on innovation development, it consisted of 6 questions in the online questionnaire given to the respondents. The data of the respondents of this study revealed that the respondents strongly agree with the promotion of innovation development in their organization ($\bar{x} = 4.32$, $SD = 0.85$).

Hypothesis Testing

The following presents the results of hypothesis 1:

Table 5 Analysis of Relationship of Communication Practices on Innovation Development

Communication sub-variables	b	Beta	t	Sig	Interpretation
1.1 Manager communication	0.260	0.267	3.723	0.000	Supported
1.2 Peer communication	0.107	0.117	1.659	0.099	Not supported
1.3 Subordinate communication	0.209	0.276	4.066	0.000	Supported

Adjusted R-square = 0.266, $F = 25.490$, $P \leq 0.05$

Independent variable = Communication practices

Dependent variable = Innovation development

Table 5 showed the statistical analysis of the relationship between TQM practice (communication) and innovation development. The research finding supports the hypothesis proposed that the communication practice has a significance on innovation development with Adjusted R-square = . 0.266. The 2 sub-variables were supported: manager communication (Sig = 0.000) and subordinate communication (Sig = 0.000), while peer communication (Sig = 0.099) was not supported. All of sub-variables have the value of Tolerance of Manager communication (0.31), Peer communication (0.36), and Subordinate communication (0.41); and the value of VIF of Manager communication (3.71), Peer communication (4.06), and Subordinate communication (4.11). The result are met the requirement of vale of Tolerance > 0 and VIF < 10 by Hair, Black, Babin and Anderson (2010). The results show that the first hypothesis is supported: There is a significant relationship of employee communication on innovation development in the food industry.

The following presents the results of hypothesis 2:

Table 6 Analysis of relationship of Leadership Practices on Innovation Development

Leadership sub-variables	b	Beta	t	Sig	Interpretation
1.1 Behavioral Theory	0.164	0.155	2.258	0.025	Supported
1.2 Trait Theory	0.092	0.085	1.327	0.186	Not supported
1.3 Transformational Theory	0.519	0.494	7.183	0.000	Supported

Adjusted R-square = 0.408, F = 47.727, P ≤ 0.05

Independent variable = Leadership practices

Dependent variable = Innovation development

Table 6 showed the statistical analysis of the relationship between TQM practice (leadership) and innovation development. The research finding supports the hypothesis proposed that the leadership practice has a significance on innovation development with Adjusted R-square = 0.408. The 2 sub-variables were supported: Behavioral Theory (Sig = 0.025) and Transformational Theory (Sig = 0.000) while Trait Theory (Sig = 0.186) was not supported. All of sub-variables have the value of Tolerance of Behavioral Theory (0.42), Trait Theory (0.32), and Transformational Theory (0.36); and the value of VIF of Behavioral Theory (4.61), Trait Theory (5.01), and Transformational Theory (4.07). The result are met the requirement of vale of Tolerance > 0 and VIF < 10 by Hair, Black, Babin and Anderson (2010). The results show that the second hypothesis is supported as well: There is a significant relationship of employee leadership on innovation development in the food industry. The following presents the results of hypothesis 3:

Table 7 Analysis of Relationship of Training Practices on Innovation Development

Training sub-variables	b	Beta	t	Sig	Interpretation
1.1 On-the-job training	0.363	0.436	5.740	0.000	Supported
1.2 Online training	0.109	0.135	1.632	0.104	Not supported
1.3 Job rotation	0.054	0.070	0.982	0.327	Not supported

Adjusted R-square = 0.316, F = 32.245, P ≤ 0.05

Independent variable = Training practices

Dependent variable = Innovation development

Table 7 displays the statistical analysis of the relationship between TQM practice (training) and innovation development. The research findings support the hypothesis proposed that the training practice has a significance on innovation development with Adjusted R-square = 0.316. The 1 sub-variable was supported: On the job training (Sig = 0.000) while 2 sub-

variables were not supported, Online training (Sig = 0.104) and Job rotation (Sig = 0.327). All of sub-variables have the value of Tolerance of On-the-job training (0.35), Online training (0.39), and Job rotation (0.34); and the value of VIF of On-the-job training (5.11), Online training (4.31), and Job rotation (4.87). The results are met the requirement of value of Tolerance > 0 and VIF < 10 by Hair, Black, Babin and Anderson (2010). The results show that the third hypothesis is supported as well: There is a significant relationship of employee training on innovation development in the food industry.

Summary of the Hypothesis Testing

Table 8 represents a summary of the hypothesis results. As shown in the table, all three proposed hypotheses for this study were supported. However, only five out of nine sub-variables of this study were supported while four sub-variables were not supported.

Table 8 Summary of the Hypotheses Testing

Hypothesis	Result
There is a significant relationship of employee communication on innovation development in the food industry	Supported
1.1 Manager communication	Supported
1.2 Peer communication	Not supported
1.3 Subordinate communication	Supported
There is a significant relationship of employee leadership on innovation development in the food industry	Supported
2.1 Behavioral Theory	Supported
2.2 Trait Theory	Not supported
2.3 Transformational Theory	Supported
There is a significant relationship of employee training on innovation development in the food industry	Supported
3.1 On-the-job training	Supported
3.2 Online training	Not supported
3.3 Job rotation	Not supported

Conclusion & Discussion

Demographic Data

The majority of the respondents for this study were male, aged between 18 to 30 years old. Most of the respondents hold a master's degree, work full-time or were self-employed. Most respondents had a job experience of 1 to 5 years, and have worked primarily in the food processing industry. A greater number of respondents were employed in a multinational company and working at a middle-management level in the organization.

Attitudes towards variables

The attitude towards the variables is presented in three parts:

2.1 Independent Variable 1: Communication Practice

Respondents strongly agreed with effective manager communication in their workplace. Whereas, they also agreed with peer communication and subordinate communication. Overall, the respondents agreed with the communication practices.

2.2 Independent Variable 2: Leadership Practice

Respondents strongly agreed with all the leadership practices. This includes Behavioral theory, Trait theory and Transformational theory. Overall, the respondents were in strong agreement with the practices of leadership.

2.3 Independent Variable 3: Training Practice

Respondents agreed with all the training practices. This includes on-the-job training, online training and job rotation practices. Overall, the respondents were in strong agreement with the practice of the training.

Hypotheses Results

There were three hypotheses proposed in this study:

Hypothesis 1: There is a significant relationship of employee communication on innovation development in the food industry.

Hypothesis 2: There is a significant relationship of employee leadership on innovation development in the food industry.

Hypothesis 3: There is a significant relationship of employee training on innovation development in the food industry.

After the data analysis, the study results showed that all three hypotheses were supported. Communication, leadership and training have significance for innovation development in the food industry.

Suggestion

This study established that TQM practices of communication, leadership and training innovation are some of the significant factors affecting innovation development. This finding is consistent with the findings of earlier research such as Aquilani et al (2017). Furthermore, this research shows that businesses who want to be creative and gain a competitive edge via innovation should devote more time and effort to improving their innovation capabilities. On the other hand, the outcome of this research found that TQM practices of leadership have a superior role in enhancing innovation, and the obtained result of R-square (0.408) proved that. As a result, this research provides TQM methods as a basis for fostering innovation in the food industry. This assertion is backed up by RBV theory, which highlights the importance of a company's significant resources in developing unique skills. Hoang, Igel and Laosirihongthong (2006) confirmed the results of previous studies that considered TQM as a set of practices.

It confirmed that TQM – considered as a set of practices – has a positive impact on the firm's innovativeness. It discovered that not all TQM practices enhance firm innovativeness. Only leadership and people management, process and strategic management, and open organization showed a positive impact on the firm's innovation. Moreover, Zang et al., (2018) stated that structural flexibility, autonomy, cooperation, and information sharing, as well as control, which is an inherent aspect of any TQM program, promote organizational innovation growth. Yet, Bon and Mustafa (2014) investigated the impact of Total Quality Management-based People Management practices TQM-PM on Administrative innovation in service Small and Medium Sized Enterprises (SMEs) in Malaysia. They found that Employee involvement and Training have positive impact on administrative innovation, while Employee empowerment showed no impact. Findings of this study help managers of service SMEs to focus on the TQM-PM as administrative innovation resource.

Although this study did not support the direct influence of some of the sub-variables when compared to other sub-variables, more TQM practices and other variables are still needed to improve innovation development by contributing to the development of the necessary capabilities that reinforce innovation performance. As a result, this research stresses the importance of the food business supporting the effective implementation of TQM practices. Future research may look at the impact of each TQM practice and the underlying factors on innovation creation and knowledge sharing, which can serve to create a clear picture of which TQM practices are the most influential. The studies found the following practical implications for top executives.

First, this research proved that TQM methods may be implemented in the food business. Improved communication, leadership, and training would encourage other sectors to pay greater attention to complete solutions, particularly in transitional economies like India, where agriculture and food processing are critical. Second, the identification of two TQM-enabling factor categories (manager communication and leadership theories) will aid managers in selecting appropriate tools to use in their organizations based on their skills and should be linked to performance output to motivate individuals to reach greatness through innovation.

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