The Innovativeness of Small and Medium Enterprises in Kuwait

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Abstract— **Despite much interest in innovativeness, there is little research that has attempted to explore the innovativeness of SMEs in developing countries in general and in Kuwait in particular. This study therefore aims to explore the innovativeness of SMEs in Kuwait. A survey of 244 SMEs in Kuwait was conducted to achieve the study objective. The study results showed that overall SMES in Kuwait are adopters in terms of their innovativeness level. SMEs in Kuwait generally practice five dimensions of innovativeness (i.e. organizational, process, product, culture and resource) in their business operations. In light of the results, several recommendations were suggested to maintain and increase innovativeness of SMEs in Kuwait.**

Index Terms— **innovativeness, innovation capabilities, SMEs, Kuwait**

I. Introduction

Nowadays, to be innovative is a necessity not only to grow and achieve competitive advantage but also to survive. This applies to large organizations and small ones as well. This means organizations should be able to develop and improve new products, processes, marketing, and organizational methods by developing their innovativeness. Innovativeness can be defines as an organization capability to come out with new products, process or open out new markets [1]. Innovativeness and related concepts (e.g., innovation capability, innovation performance, and innovation) have been interchangeably used in the literature [2]. The Oslo Manual definition of innovativeness is the most cited definition in the literature which defines it as "the implementation of a new or significantly improved product (good or service) or process, a new marketing method or a new organizational method in business practice, workplace organization or external relations" [3, p. 29].

Innovativeness is one of the core strategies for both SMEs and large organizations [4]. Therefore, encouraging innovativeness in the SMEs sector is vital [5]. In general, the SMEs sector is considered the main driver of a country growth and innovation [6]. The development and commercialization of innovativeness play a major role in this context [7]. Innovativeness has several benefits such as: contribute to high economic growth [8], provide profitable outcomes, improve performance, and enhances efficiency [9-11], improve early response to consumers demand [11]. On the other hand, Reference [12] found several internal obstacles (e.g., lack of know-how, capacity overloading, unclear roles and tasks) to innovativeness of SMES as well as one external obstacle which is governmental bureaucracy negatively influence innovative performance of SMEs.

The importance of SMEs has increasingly grown over the years and they have become the backbone of any country's economy, especially in developing countries. SMEs represent approximately 90% of the total firms across the world and they have a significant role in creating employment opportunities [13]. SMEs are generally considered to be flexible, adaptive and innovative firms [14]. However, some research showed that innovativeness is increasingly adopted among large organizations [15] compare to SMEs. Other research showed the opposite [16]. However, SMEs face challenges in adopting and achieving innovativeness than larger organizations [17-18]. For example, SMEs have much more limited resources in comparison with larger organizations [19]. This may result in a lack of funds for innovativeness [6]. Therefore, adopting and achieving innovativeness is of particular importance for SMEs with limited resources [20-21].

Previous research mainly concentrated on both investigating factors that positively or negatively affect innovativeness and measuring innovativeness. For example, organizational culture [22], organizational structure [23] and resources [24] were among the identified factors that influence innovativeness. Reference [25] examined the impact of customer relationship management (CRM) on innovation capabilities of Kuwait Airways. The results showed that there is a high level of innovation capabilities, with a first rank for innovation in administrative affairs followed by marketing innovation, technological innovation, and aesthetical innovation. Reference [26] found that the innovativeness of public listed housing developers in Malaysia is low. Reference [27] compared the degree of innovativeness of Polish and Spanish administration and the activities undertaken to stimulate it. The results clearly showed a higher degree of innovativeness of Spanish administration in comparison to Polish administration. Spanish administration has more experience in implementing innovations in the field of management systems, communication, involvement of entities outside the sector to work on innovation and

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shaping the organizational culture conducive. Reference [28] evaluated the level of innovativeness of enterprises in the SME sector in the Polish construction industry and identified the factors that influence this level of innovativeness, which relates to the location of the business and managers' awareness of the significance of innovation in shaping a firm's competitiveness. The results demonstrated that construction companies from the SME sector in Poland are characterized by a level of innovativeness that is similar to that found in other enterprises, which is a consequence of the relatively high awareness of the significance of innovation to obtaining a competitive position among the managers of these companies.

This study refers to the meaning of innovativeness defined by Reference [29]. It conceptualized innovativeness as a multi-dimensional construct consisting of innovation types (process aspects) and innovation indicators (potential aspects). Innovation types include organizational innovativeness, process innovativeness, product innovativeness, and marketing innovativeness while innovation indicators include innovation culture and innovation resource. Specifically, product innovation is "the introduction of a good or service that is new or significantly improved with respect to its characteristics or intended uses. This includes significant improvements in technical specifications, components and materials, incorporated software, user friendliness and other functional characteristics" [3, p.48]. Process innovation is "the implementation of a new or significantly improved production or delivery method. This includes significant changes in techniques, equipment and/or software" [3, p.49]. Marketing innovation is "the implementation of a new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing" [3, p.49]. Organizational innovation is "the implementation of a new organizational method in the firm's business practices, workplace organization or external relations" [3, p.51]. Innovation resources cover "R&D personnel, R&D budget, equipment, training", etc. whereas innovation culture means "operational and managerial attitude, belief, approach, commitment, etc. towards on innovation" [29, p. 70].

Despite much interest in innovativeness, there is little research that has attempted to explore the innovativeness of SMEs in developing countries in general and in Kuwait in particular. This study therefore aims to explore the innovativeness of SMEs in Kuwait.

The contribution of the paper is that by understanding the level of innovation in SMEs, the findings would help the government in setting strategic policy measures to increase the level of innovation among SMEs. The findings would also be beneficial to the top management of the SMEs to pay more attention to improve particular types of innovation which can facilitate the implementation of innovation in these companies.

II. Methods

This study adopted a quantitative descriptive approach. A questionnaire was the main method used for data collection. The study population consists of all SMEs in private sector in Kuwait. According to Reference [30], there is more than 25,000 SMEs in Kuwait. These enterprises are the center of the national economy, as they supply around 3% to GDP, offer employment to an estimated 23% of the total workforce in Kuwait. The questionnaire was distributed through a personal visit. Participants were assured of anonymity and confidentiality, and participation was voluntary. The participants were explained the purposes of the study and asked to complete the surveys. The instructions for completing the questionnaire were given on the cover page to avoid any misunderstanding. Questionnaires were distributed conveniently to a sample of SMEs in Kuwait (300 questionnaires were distributed).The questionnaires were completed by various kinds of employees (e.g. company owners, general managers, IT managers, and communication officers).

The questionnaire developed for this study consisted of three parts. Part one was about the profile of the respondents asking about the respondent's gender, age, marital status and the education level. Part two asked about the profile of the SME which includes nature of work, number of employees and year of establishment. Part three measured the innovativeness using 18 items adopted from Reference [29]. Five-point scales ranging from "strongly disagree" to "strongly agree" were used to gather information in this section. The questionnaire was evaluated by a number of experts and put in to practice in the sector after making necessary alterations were seen appropriate.

A total of 300 questionnaires were successfully distributed and completed. However, but 56 questionnaires were ignored because of missing data or/incomplete data. Therefore, only 244 questionnaires were usable for this study and included in the analysis. For the purpose of data analysis (performed using SPSS 19.0 program), three major statistical analyses were employed: descriptive analysis, factor and reliability and analysis. Descriptive statistics such as mean, standard deviation, and percentage are used to analyze all the final constructs and also to present the respondents' demographic and industry profiles such as gender, age, and education level. Factor and reliability analysis was conducted for innovativeness scale items.

III. Data Analysis and Findings

A. Respondents Profile

A summary of the demographic characteristics of the respondents is presented in Table I. As shown in the table, the results indicate that 57.8% of the respondents were females, and 42.2% were males. More than third of respondents aged between 21-30 years (40.3%), were married (43%) and hold a diploma degree (42.4%).

TABLE I. A SUMMARY OF THE DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS (N=244)

Demographic Characteristics	Categories	Freq.	Percent	Missing
Gender	Male	103	42.2%	0
	Female	141	57.8%	
Age	18-20 years	56	23%	1
	21-30 years	98	40.3%	
	31-40 years	67	27.7%	
	41 years & above	22	9%	
Marital status	Single	99	40.6%	0
	Married	105	43%	
	Other	40	16.4%	
Education	High school & less	84	34.6%	1
	Diploma	103	42.4%	
	Bachelor	41	16.8%	
	Masters & higher	15	6.2%	

In addition, Table II shows the data analysis concerning the company information.

TABLE II. BASIC COMPANY INFORMATION (N=244)

Categories	Freq.	Percent	Missing
Nature of Work			
Clothes, shoes, beauty & hair care sector	79	32.9%	4
Groceries, restaurants & cafes sector	70	29.2%	
Travel and Tourism sector	26	10.8%	
Pharmaceutical & medical sector	22	9.2%	
Health clubs & sport services sector	20	8.3%	
Education services, Bookshops, stationary & toys trade sector	19	7.9%	
Information & Communication sector	4	1.7%	
Number of Employees			
5 employees & less	92	38%	2
6-10 employees	61	25.2%	
11-20 employees	42	17.4%	
21-50 employees	17	7%	
51-100 employees	22	9.1%	
101 employees & more	8	3.3%	
Years in the market			
5 years or less	103	44.2%	11
6-10 years	68	29.2%	
11-15 years	28	12%	
16-20 years	20	8.6%	
21 years & more	14	6%	

As shown in Table II, around third of the respondents (32.9%) own or work in clothes, shoes, beauty and hair care sectors, while 29.2% of the respondents own or work in groceries, restaurants and cafes sectors. In regard to the number of employees, more than third of SMEs (38%) employ five employees and less while quarter of SMEs (25.2%) employ between 6-10 employees. 44.2% of SMEs were established before five years and less while 29.2% of SMEs were established before six to ten years.

B. Dimensions of Innovativeness

Factor analysis on the multi-item measures was conducted in order to identify the underlying factors of these items. Exploratory factor analysis with principle component analysis and Varimax rotation was used to examine if the items load on the specified factors as predicted or not. Multiple criteria were used to judge the number of factors to extract: the scree plot and parallel analysis test. After extracting the factors and obtaining a relatively clear factor solution, factors are labeled based on the content of the items and previous research to make them interpretable. A number of different representations were explored before deciding on the particular solutions. A reliability test was then performed to check the consistency of the scale used in the study. The purpose of reliability analysis is to verify the internal consistency among the items. The greater the consistency in responses among items for each factor, the higher the Cronbach's alpha. Cronbach's alpha coefficient of 0.5 and above was taken as an acceptable minimum value for exploratory research [31].

Both the overall and individual item measures of sampling adequacy were high, indicating the appropriateness of the data for factor analysis. Both the scree plot and parallel analysis test suggested a three-factor solution. Specifically, after analyzing the 12-item scale that measures the factors contributing to the innovativeness of SMEs, 9 items formed three conceptually sound factors (Table III). Three item *"i.e. Prod3-Our company sees creating new products and services as critical tools to reach success, Proc1-Our company is flexible to provide products and services according to the demands of the customers, and Mark2-We implement new marketing methods to promote our products"* were discarded due high-cross loadings. The first factor has four items and had loadings of 0.733 or greater on this factor. It accounts for 35.7% of the variance. Cronbach alphas α were checked for the reliability of each factor and rendered a result of 0.89 for factor 1. The items of this factor imply that SMEs have organizational innovativeness. Therefore this factor is labeled as organizational innovation capability in accordance with previous literature. The second factor has three items and had loadings of 0.685 or greater on this factor. It accounts for 23.5% of the variance. Cronbach was 0.81 for this factor. This factor is labeled as process innovation capability in accordance with previous literature. The third factor has two items and had loadings of 0.774 or greater on this factor. It accounts for 18% of the variance. Cronbach was 0.69 for this factor. This factor is labeled as product innovation capability in accordance with previous literature.

TABLE III. FACTOR LOADINGS FOR fiNAL 3-FACTOR SOLUTION

Factors of Innovation Capability	1	2	3
Factor 1: Organizational innovation capability			
Org2-We are successful in commercializing and institutionalizing of new products	.924		
Org3-Our firm reduces the developing time of new products and services	.873		
Org1-We are better than our competitors in the manner of developing new managerial work, processes, and systems	.844		
Mark3-We make improvements in the manner of customer relationships to obtain customer satisfaction	.733		
Factor 2: Process innovation capability			
Proc3-Our company actively works to constantly adjust its business processes		.906	
Mark1-Our company constantly looks for new ways to deliver our products to our customers		.798	
Proc2-Our company develops in-house solutions to improve our manufacturing processes		.685	
Factor 3: Product innovation capability			
Prod1-We enhance the range of our products and services with not previously released products and services			.901
Prod2-We try to acquire new products by differing technical specifications and functionalities			.774
Variance explained (%)	35.7	23.5	18
Cronbach's Alpha	0.89	0.81	0.69

After analyzing the 6-item scale that measures the factors contributing to the innovativeness of SMEs, 5 items formed two conceptually sound factors (Table IV). One item *"i.e. Res1-Our company has strong capacity in innovative design and manufacturing applications"* was discarded due to high-cross loadings. The first factor has three items and had loadings of 0.792 or greater on this factor. It accounts for 46.5% of the variance. Cronbach was 0.86 for this factor. This factor is labeled as innovation culture in accordance with previous literature. The second factor has two items and had loadings of 0.879 or greater on this factor. It accounts for 33.6% of the variance. Cronbach was 0.75 for this factor. This factor is labeled as innovation resource in accordance with previous literature.

TABLE IV. FACTOR LOADINGS FOR fiNAL 2-FACTOR SOLUTION

Factors of Innovation Capability	1	2
Factor 1:Innovation culture		
Cult2-Our company encourages collaboration and exchange of ideas between the departments in order to produce new approaches	.927	
Cult1-Our employees cleverly transforms information from internal and external sources into valuable knowledge for our company	.907	
Cult3-Our company tries out new ideas and methods to provide innovative solutions to our clients' problems	.792	
Factor 2:Innovation resource		
Res2-Importance is given to training R&D personnel		.896
Res3-Our company constantly increases the allocated budget of R&D personnel		.879
Variance explained (%)	46.5	33.6
Cronbach's Alpha	0.86	0.75

Therefore, key features of these five factors are provided in Table V, which shows the number of items, mean and standard deviation (SD) of each factor. Mean scores were computed by equally weighting the mean of all items in each construct. For example, the mean for organizational innovativeness score is computed by equally weighting the mean scores of all the 4 items representing this dimension. As shown in Table V, participants nearly equally identified the five factors. SMEs have five types of innovativeness namely organizational, process, product innovativeness, innovation culture and resource.

TABLE V. NUMBER OF ITEMS, MEAN AND STANDARD DEVIATION OF EACH FACTOR

Innovativeness Dimensions	No. of items	Mean	SD
Product innovation capability	2	4.67	0.52
Process innovation capability	3	4.48	0.56
Innovation Resource	2	4.45	0.69
Organizational innovation capability	4	4.41	0.79
Innovation culture	3	4.34	0.79
Overall innovativeness	14	4.47	0.43

To explain the level of SMEs innovativeness, this study adopted Rogers's [32] innovation diffusion theory. Reference [32] identified five adopters' categories: the innovators, adopters, early majority, late majority, and the laggards, with the innovators and laggards (being the highest and the least in ranking, respectively) (Table VI). Researchers have used Rogers's [32] innovation diffusion theory to explain their results and determine the level of innovativeness in different contexts (e.g., [33]). In addition, to assist in rating the five adopters' categories on the five point Likert scale, the interpretation used by Reference [34] was also adopted (Table 6). For example, innovators category is represented by a point between 4.5 to 5 while the laggards is represented by a point between 1 to 1.49.

TABLE VI. INTERPRETATION OF ROGERS' INNOVATION ADOPTION CATEGORIES BASED ON 5-POINT LIKERT SCALE

Likert Scale Description	Rogers innovation adoption level	Allocated Value Range (adopted from Ref. [34])
Strongly disagree	Laggard	1.0-1.49
Disagree	Late Majority	1.5-2.49
Neutral	Early Majority	2.5-3.49
Agree	Adopters	3.5-4.49
Strongly agree	Innovators	4.5-5.00

Accordingly, the mean scores of the five identified dimensions of innovativeness as well as the overall innovativeness were compared with the range of values allocated to each of the Rogers' innovation categories in the 5-piont Likert scale (as shown in Table VI) to determine the level of adoption that corresponds with the mean score of the responses as shown in Table VII.

As shown in Table VII, the mean score of overall innovativeness is 4.47, which implies that the overall innovativeness level among the SMEs fall under "Adopters‟ category". Therefore, the SMEs are generally adopters of overall innovativeness practices. Looking at each specific dimension, the findings show that four dimensions have mean score of below 4.5 indicating that SMEs are generally adopters of organizational, process,

culture and resource innovativeness practices. On the other hand, product innovativeness has a mean score of 4.67 indicating that SMEs are generally innovators in terms of product innovativeness practices.

TABLE VII. INNOVATIVENESS LEVEL OF THE IDENTIFIED DIMENSIONS

Innovativeness Dimensions	Mean	Innovativeness level
Product innovation capability	4.67	Innovators
Process innovation capability	4.48	Adopters
Innovation Resource	4.45	Adopters
Organizational innovation capability	4.41	Adopters
Innovation culture	4.34	Adopters
Overall innovativeness	4.47	Adopters

IV. DISCUSSION

In general, the results of this study show that the SMEs in Kuwait fell within Adopters' category of the Rogers [32] innovation adoption classifications in all dimensions of innovativeness (organizational, process, culture and resource) considered for the study expect for the product innovativeness which fell within the innovators category. The results also show that SMEs are generally adopters in their overall innovation practices. These results suggest that SMEs in Kuwait generally adopt of organizational, process, culture and resource innovation in their practices. For product innovativeness, the results suggest that SMEs in Kuwait highly adopt its practices. The results suggest that SMEs initiate new ideas in relation to products. However, they do not initiate new ideas in relation to process, organizational innovativeness, culture and resources but they are the first to adopt these ideas initiated by the innovators. Nowadays, SMEs need to constantly innovate and improve their performance. This could largely explain why SMEs are able to adopt ideas initiated by innovators. The results also suggest that SMEs generally practice five dimensions of innovativeness in their business operations. This means that SMEs adopt product innovativeness, process innovativeness, organizational innovativeness, innovation culture and innovation resources practices in their business operations. These results are consistent with the findings of the previous studies (e.g., [25, 27]).

The use of Rogers's [32] innovation adoption categories was considered appropriate because the unit of analysis is the SMEs innovation practices. It is widely used by researchers to determine the level of innovation practices of organizations.

Several limitations of the study should be noted. It is worth noting that the sample may not reflect the national trends because only 244 questionnaires were completely filled up. Therefore, due to the small sample size of this study, it cannot be claimed that the findings are generalizable to all SMEs or to all developing countries. It would be advantageous to conduct a larger scale survey over a wider geographical range. Also, the paper does not focus on factors that influence SMEs innovativeness. Future research that accounts for the factors will add value to the existing knowledge.

V. CONCLUSION AND RECOMMENDATIONS

The aim of this study was to explore the innovativeness of SMEs in Kuwait. A quantitative study was conducted in order to achieve the study objective. This level of innovativeness is explained by five dimensions; organizational innovativeness, process innovativeness, product innovativeness, innovation culture and innovation resources. Overall, this study found that SMES in Kuwait are adopters in terms of their innovativeness level. The results of this study suggest that SMEs in Kuwait generally practice five dimensions of innovativeness (organizational, process, product, culture and resource) in their business operations.

The contributions of this study include the application of Rogers' Innovation Diffusion Theory to explain the level of innovation practices of SMEs in Kuwait thereby establishing the empirical evidence on their level of adoption of the various types of innovations (organizational, process, product, culture and resource). The results provide SMEs with their current innovativeness level and basis for taking decisions on strategies for improving the SMEs innovation programs in order to achieve sustainable competitive advantage and growth. The study extends the knowledge on innovativeness theory by focusing on the innovativeness of SMEs in Kuwait.

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