

The Relationship between Sustainability Orientation and New Product Development in SMEs

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Abstract

This paper investigates how sustainability orientation stimulates new product development in the context of small and medium enterprises (SMEs) in a developing country (Egypt) namely, restaurants in Mansoura City. Data were collected from 200 restaurants' managers. Partial least squares structural equation modeling (PLS-SEM) was utilized to test the hypotheses. The findings confirmed that sustainability orientation namely, sustainability culture, sustainability practices and commitment to sustainability practices positively and significantly influenced new product development.

1. Introduction

In today's increasingly competitive and vibrant setting of the world's economy, the restaurant industry must provide innovative service to preserve a competitive advantage (Horng et al., 2013). Similarly, Nidumolu et al. (2009) argued that sustainability is regarded as a main component in the long-term competitive advantage pursued by companies, and plays a pivotal role in the introduction and marketing of innovative products and services. For more than half a century the literature has proposed the importance of innovation as a central component of successful capitalist endeavors (Burns & Stalker, 1961; Schumpeter, 1934). However, reviews of food-service innovation management is a much more recent approach (Jones, 1996; Feltenstein, 1986). The factors affecting innovative food-service products are multi-dimensional and complex as customers' preferences and food patterns that are constantly changing (Ottenbacher & Harrington, 2009a).

Sustainability, is a model that can be considered as a benchmark for developing solutions to the environmental and social challenges of today (Kuckertz & Wagner, 2010). In this context, the pursuit of sustainability has begun to reshape the competitive landscape (Nidumolu et al., 2009), which ultimately leads enterprises to change their strategy of managing products, services, technologies and business models (Sayem, 2012). Such a new revolution has inspired companies to incorporate sustainability into their business processes, including professional development of employees, the management of supply chains and new product development (Manyika et al., 2011; Porter & Kramer, 2011). According to Kuckertz and Wagner (2010) Sustainability orientation translates the level of awareness regarding the protection of the environment and individuals ' social responsibility. In addition, Sayem (2012) stated that sustainability orientation has grown from such a movement focused on environmental problems to a generally accepted paradigm for decision-making by individuals, firms, society and governments to balance the concerns of current and future generations on the environmental, economic and social needs. Thus, the concept of corporate sustainability has already become a generic component, at least in the context of the rhetoric and self-portrayal of most large business firms and multinational companies, but it can also be found largely in small and medium-sized enterprises (Schneider & Meins, 2012). In addition, the benefits of corporate's orientation towards sustainability involve profits, competitive advantage, influence of stakeholders, regulations, worries about reputation, environmental protection and organizational change (Ranganathan & Willis, 1999; Daily & Walker, 2000; Van Marrewijk & Werre, 2003; Dunphy et al., 2003). Moreover, one of the central growing concerns in the context of sustainability is the production of eco-friendly products (Jugend et al., 2020). No previous studies have examined the impact of sustainability orientation on new product development in the context of small and medium enterprises (SMEs) in a developing country (Egypt) namely, restaurants in Mansoura City. Therefore, regarding the importance of new product development and its role in helping restaurants to sustain their

product portfolio's ability to compete and thus leverage competitive advantage, the key aim of the present study was to investigate how sustainability orientation are related to new product development. Hence, the question that arises in this study is the following.

What is the effect of sustainability orientation on new product development?

Therefore, the present research attempts to answer this question by adopting the following objectives:

- (1) Investigating the effect of sustainability culture on new product development;
- (2) Determining the effect of sustainability practices on new product development; and
- (3) Demonstrating the effect of commitment to sustainability practices on new product development.

2. Theoretical background and hypotheses development

2.1. Sustainability orientation

Sustainability is a confusing and politicized term (Funk, 2003), yet it is generally defined as consumption that can continue forever without the deterioration of physical, natural, human and intellectual capital (Costanza et al. 1991). The World Commission on Environment and Development, defined *sustainability* as seeking to satisfy the needs and aspirations of the present generations, without endangering the ability of those of the future to meet their own needs (Brundtland report, 1987). The sustainability of SMEs consists of economic, environmental and social aspects (Ghosh, 2019). *Sustainability orientation* refers to “the overall proactive strategic stance of firms towards the integration of environmental [and social] concerns and practices into their strategic, tactical and operational activities.” (Roxas & Coetzer, 2012, p. 464). Conceptually, the literature distinguishes between three dimensions of sustainability orientation, namely; sustainability culture, sustainability practices and commitment to sustainability practices (Claudy et al., 2016; Roxas & Coetzer, 2012).

2.1.1 Sustainability culture

Sustainability culture is defined as identifying the impact of the firm's activities on society and communities with the need to eliminate this impact, which is translated into a philosophy and beliefs that drive the company's decision-making process (Fraj-Andre's et al., 2009; Pagell & Wu, 2009). Likewise, Banerjee (2002) considered sustainability culture as the integration of sustainability values and ideas into the organizational culture. Once the organization has evolved a culture of sustainability, it is likely to instigate the implementation of sustainability practices within its own operations and activities (Linnenluecke & Griffiths, 2010).

2.1.2. Sustainability practices

According to Van Hemel and Cramer (2002); Crittenden et al. (2011) *sustainability practices* involve integrating environmental and social issues into internal operational plans, programs and practices. Roxas and Coetzer (2012) stated that an organization is considered to be highly oriented towards sustainability, “when it implements sustainable business activities” (p. 464). Accordingly, as stated in the previous literature, sustainability practices are subsequently divided into two parts specifically, environmentally oriented practices and socially oriented practices. Environmentally-oriented practices are designed to reduce the negative impact of products and services on the environment by reducing pollution and utilizing natural resources and conventional energy sources (Claudy et al., 2016). While on the other hand, Socially oriented practices are designed to focus on employees' health, safety, and human rights, and the benefits shared along the supply chain of a company with other stakeholders (Dangelico & Pujari, 2010 ; Pujari, 2006). In short, sustainability culture and sustainability practices constitute a strategic orientation at the firm level, which must be embedded into the firm's overall philosophy and construct a part of the larger strategic structure of the firm that guides business plans, programs and activities.

2.1.3. Commitment to sustainability practices

Commitment to sustainability practices is regarded to reflect how far the company enjoys the real benefits of being proactive in lowering the

negative environmental impacts of business activities (Roxas & Coetzer, 2012). In addition, commitment to sustainability practices represents the organizational embodiments of the awareness, the dedication and the commitment of the company to sustainability concerns, activities and programs that are related to the organization-wide responsibility for the environment and the society (Black & Hartel, 2004; Carroll, 1991). Branzei and Vertinsky (2002) argued that the company is considered to have such a high level of orientation and commitment to protecting the society and the environment when it carries out business activities provoked by an organizational sense of obligation and accountability for the practices of the company and its potential environmental impact. Companies are expected to engage and maintain practices that indicate their sustainability orientation if they perceive the long-term benefits of such efforts (Roxas & Coetzer, 2012).

2.2. New Product Development

The term '*innovation*' emerges from the Latin '*innovatio*' which means creating something new (Farsani et al., 2015). O'Sullivan and Dooley (2009) defined Innovation as the process of making changes big and small, radical and incremental to products, services and processes leading to the creation of something new that adds value to customers and consequently contributes to the knowledge store of the organization (p. 5). In addition, Damanpour (1996) claimed that innovation is deemed to be a tool to change the situation of an organization irrespective of the driver of that change whether it is internal or external, and that it may involve changes in products, processes, programs, plans, structures and systems. While, Thompson (1965) defined innovation as being capable of creating and implementing new ideas, products and processes. *Product innovation* is defined as the development of a new product or service or making major improvements in the characteristics, materials, components, or technology of the current product in order to fulfill customer needs (OECD, 2005; Utterback & Abernathy,

1975). Also, Product innovativeness represent the extent to which a company's products differ from rival's alternatives such that its products are important and unique to customers (Chen, Li, & Lin, 2013; Fang, 2008). Innovation incorporates not only big and small changes (Urabe, 1988), but also product development, production, marketing, distribution, after sale services, and subsequent adaptation and upgrading of the product (Smith & Barfield, 1996). *New Product Development* is stated to entail changes in the design or the presentation of a current product, or a completely new product definition that fulfills the changing customer needs or market niche (Ulrich & Eppinger, 2004). While, *New product development in the food-service industry* is generally defined as business activities involved in the development of new food product items as well as upgrading current menu items, although major or minor changes tend to occur (Ottenbacher & Harrington, 2009a).

2.3. Sustainability culture and new product development

The relationship between the sustainability orientation of a firm and its financial performance has attracted increasing attention in the literature and numerous meta-reviews indicate a moderate beneficial connection between corporate sustainability orientation and its financial performance (Ambec & Lanoie, 2008; Margolis & Walsh, 2003; Orlitzky et al., 2003). Also, the positive connection between the corporate sustainability orientation and competitive advantage positions was first formally adopted in theories in the firm's natural resource based view theory (Hart, 1995), which indicates that incorporating environmental concerns into organizational operations will encourage companies to acquire more valuable, rare and inimitable resources and capabilities that are the backbone of the long-term competitive advantage (Barney, 1991; Prahalad & Hamel, 1990). Likewise, the firm's sustainability orientation incorporates social and environmental dimensions alongside economic ones, and as such, it reflects a more expansive perspective, a widely acknowledged driver of new product innovation (Hart, 1997; Paladino, 2007).

Proactively addressing social and environmental issues needs an organization to adopt a system-thinking approach and to improve the involvement of employees and multi-functional collaboration, which will lead to the development of vital organizational capabilities and improve the firm's new product development results (Orlitzky et al., 2003). A study by Nidumolu et al. (2009) on sustainability programs of 30 big corporations finds that numerous organizational and technological innovations are triggered by sustainability. Firms with high sustainability culture are more likely to recruit sustainability-oriented staff; therefore, these companies may be better structured to incorporate the social and environmental issues in the organization (Eccles et al., 2014). In support of this concept, Sharma and Vredenburg (1998) believed that the proactive sustainability culture of a company leads to the development of a stakeholder inclusion capability, a higher-order learning capability, and an ongoing innovation capability. Therefore, this study suggests the following hypothesis:

H1: Sustainability culture has a significant positive effect on new product development.

2.4. Sustainability practices and new product development

The core argument for this win - win philosophy is that environmental regulations force companies to innovate, resulting ultimately in operational efficiencies, higher quality products and higher customer value (Claudy et al., 2016). Accordingly, sustainability issues such as waste or pollution can be perceived as inefficient, ineffective, and incomplete use of resources by companies. Thus, adopting sustainability-oriented practices can result in operational efficiencies and cost savings, which in turn enhances firms' competitiveness (Porter & van der Linde, 1995a). Further, sustainability practices can also lead to better quality (e.g. enhanced materials or security) and/or reduced prices, eventually increasing customer value and driving new product developments (Claudy et al., 2016). In the light of new product development, a strong sustainability orientation allow the teams of new

product development to eliminate inefficiencies linked to product characteristics (e.g. poisonous materials), product design (e.g. recycling design), or manufacturing procedures (e.g. power savings) (Fiksel, 2009). Eliminating such inefficiencies is expected to enhance profit margins for new product development and improve the return on innovation investment (Claudy et al., 2016). For example, in 1989 Procter and Gamble (P&G) created and started ultra-formulations, a focused form of detergent powder, then the new formula needed half the quantity of standard detergents, leading to a 30 percent decrease in product raw materials and a 30 percent decrease in packaging, finally, P&G reported that the change from standard detergents to the compact detergents led to a 40 percent decrease in global trucking expenses (DeSimone & Popoff, 2000). Therefore, in light of the previous discussion, this study assumes that implementing sustainability practices is positively related to new product development. Therefore, this study suggests the following hypothesis:

H2: Sustainability practices has a significant positive effect on new product development.

2.5. Commitment to sustainability practices and new product development

A firm develops a proactive sustainability orientation if it has a strong sustainability culture, implements actual sustainability practices, and is committed to sustainability practices in the long-term (Roxas & Coetzer, 2012). New product development literature has verified that teams with stronger sense of commitment would be able to handle situations and make better and faster decisions, resulting in successful new product development (Donnellon, 1993). The process of new product development requires reciprocal interdependence, where business units rely on one another to execute the required tasks effectively. Such mutual-dependency intensifies the need for concerted commitment, which constitute the framework for collaborative decision-making and enhances successful communication

(Sivadas & Dwyer, 2000). Specifically, Lagares et al. (2018) suggested that environmental commitment is associated with the firms' ability to innovate. Thus, we argue that firms with higher levels of commitment to sustainability practices would be able to develop new products successfully. Therefore, this study suggests the following hypothesis:

H3: Commitment to sustainability practices has a significant positive effect on new product development.

According to literature review discussed, the researcher proposed the conceptual framework as shown in figure (1).

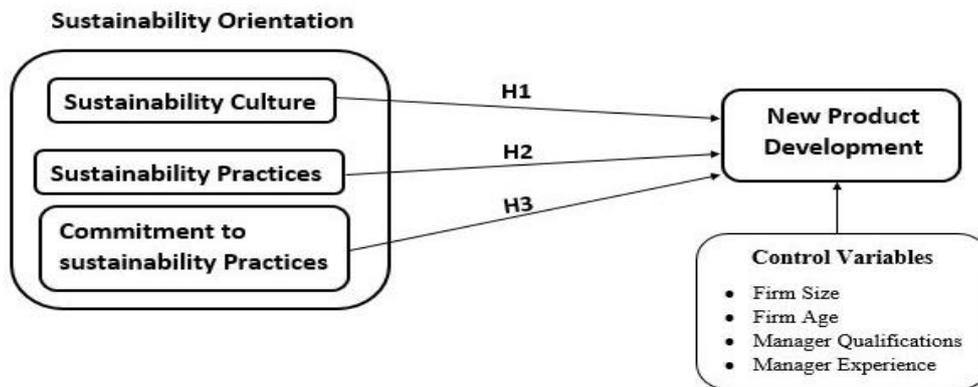


Figure (1)
Conceptual Framework

Source: Prepared by the researchers according to literature review.

3. Research methods

3.1. Sample and procedures

A post-positivist research philosophy was exploited with a quantitative approach to certify the suggested framework, and quantitative data were collected using survey questionnaires to provide answers to research questions. The respondents were managers of restaurants in Mansoura City. Importantly, managers were chosen specifically in this study because they are presumed to have adequate perception of research constructs in addition to being competent to evaluate whether their restaurant adopts sustainability orientation or not, and the performance of the new product development. For this study, the sampling frame is the number of restaurants

in Mansoura City. The list related to the number of restaurants showed that there are 464 restaurants actually operating in Mansoura City. This list was obtained from the records of the Chamber of Commerce in Dakahlia Governorate which includes (number and addresses) of restaurants in Mansoura City. Saunders et al. (2009) stated that the appropriate sample size depends on many factors such as the type of statistical analysis used in the study, the margin of error, the confidence level, and the population size. In order to generalize the findings to a population, the sample size had to be large enough. Therefore, according to Saunders et al. (2009), considering a margin error equals 5% which is the percentage used in social research, a confidence level of 95%, and the size of the society ranges between 400 and 500, this requires a sample size between 196 and 214 (see Appendix 1). A questionnaire form was utilized as a data collection tool. To select the items that represented the questionnaire's questions, the study adopted the previous literature on the subject (Claudy et al., 2016; Roxas & Coetzer, 2012; Homburg et al., 1999; Li & Calantone, 1998; Song & Parry, 1997). The initial questionnaire form was presented in English language. For validity concerns it was then translated into Arabic to guarantee the questions were interpreted and answered correctly. Once again, the Arabic copy has been translated back into English language to be contrasted with the main form as per the validity procedures of back translation techniques that Saunders et al. (2009) approves. Eventually, the researcher compared the two initial questionnaires to obtain a final and more fitting version. Then, a pilot testing was conducted with 40 restaurants' managers. The results showed that Cronbach's alpha for all of the constructs was above 0.70, reflecting high internal consistency. After performing the pilot study, the questionnaires were delivered personally to the managers of restaurants in meeting rooms in their restaurants. Additionally, validity criteria were followed to certify the final form of the questionnaire and to guarantee that it measures what it is supposed to measure. Only 200 usable questionnaires were collected with a response rate of (86%). Table 1 shows the sample characteristics. The result of the t-test showed that there were no significant differences.

Table (1)
Sample Characteristics

Characteristics	Frequency	Percentage	Cumulative%
Restaurant Size			
1- less than 50 employees	132	66.0%	66.0%
50- less than 100 employees	60	30.0%	96.0%
100 employees or more	8	4.0%	100.0%
Total	200	100%	
Restaurant Age			
Less than 5 years	76	38.0%	38.0%
5- less than 10 years	64	32.0%	70.0%
10- less than 15 years	38	19.0%	89.0%
15- less than 20 years	16	8.0%	97.0%
20 years or more	6	3.0%	100.0%
Total	200	100%	
Manager's Qualification			
Intermediate qualification	26	13.0%	13.0%
Above Intermediate Institute	95	47.5%	60.0%
High institute or Faculty	79	39.5%	100.0%
Post graduate studies	0	0.0%	
Total	200	100.0%	
Manager's years of experience			
Less than 5 years	32	16.0%	16.0%
5- less than 10 years	85	42.5%	58.5%
10- less than 15 years	55	27.5%	86.0%
15- less than 20 years	13	6.5%	92.5%
20 years or more	15	7.5%	100.0%
Total	200	100.0%	

Source: Prepared by the researchers according to statistical analysis.

3.2. Measures

All of the constructs were measured with a 5-point Likert-type scale (5 = strongly agree, to 1 = strongly disagree). Sustainability culture was measured using a 5-item scale (Claudy et al., 2016). Managers evaluated the 'knowledge' within the restaurant about environmental and social issues. Sustainability practices was measured using a 4-item scale (Claudy et al., 2016). Managers are asked to assess how important are specific sustainability practices to their restaurants. Commitment to sustainability practices 4-item

scale of (Roxas & Coetzer, 2012) to describe the ‘commitment’ of the restaurant to pursuing and nurturing a proactive stance towards sustainability practices. Sustainability orientation was totally analyzed using a 13-item scale. New product development was assessed using a 4-item scale based on Homburg et al. (1999); Li and Calantone (1998); Song and Parry (1997). These items were constructed to investigate the extent to which the new menu-item is superior to competitors’ products, provides a higher-quality and creates superior customer services. A total of 17-item scale was used to measure the constructs of this study (see Appendix 2). Finally, consistent with previous studies (Ali, 2016) the researcher considered (firm size, firm age, manager’s qualifications, and manager’s experience) as control variables.

4. Data analysis and results

The study adopted partial least squares (PLS) analysis using Warp PLS statistics software, version 6.0. According to Henseler et al. (2009), it is verified that PLS is the only viable SEM technique that involves the participation of both reflective and formative measures in the same analysis. In addition, PLS analysis is divided into two key sections, namely the measurement model which identifies the relationship between the observed variables and their latent variables, and the structural model which concerns only the relationships between the latent variables (Loehlin, 2004).

4.1. Measurement model

The measurement model aims to evaluate; individual reliability, construct reliability, convergent validity and discriminant validity in order to realize the appropriate degree of internal consistency that the measures hold. Table 2 shows that the factor loading for the items were above the suggested criteria of 0.70 (Henseler et al., 2009). Moreover, Cronbach's alpha coefficient (α) and the Composite Reliability (CR) for each of the constructs were greater than the standard of 0.70, showing that the measures were reliable (Hair et al., 2010). Furthermore, to estimate convergent validity, Fornell and Larcker (1981) stated that the average variance extracted (AVE) should be equal to or greater than 0.50. Table 2 shows that AVE values are

greater than 0.50 for all constructs, indicating adequate consistency level. Finally, skewness and kurtosis values are also presented in Table 2.

Table (2)
Confirmatory factor analysis (PLS), Loading, Cronbach's Alpha (α), Composite reliability (CR), and Average Variance Extracted (AVE)

Constructs & dimensions	Item's code	Mean	Std. deviation	Skewness	Kurtosis	Loading	α	CR	AVE
Sustainability Culture	SC.1	4.79	0.408	-1.435	0.059	0.893			
	SC.2	4.70	0.459	-0.879	-1.239	0.617			
	SC.3	4.68	0.489	-1.036	-0.302	0.885			
	SC.4	4.74	0.496	-1.929	4.506	0.836			
	SC.5	4.07	0.811	-0.585	-0.162				
		4.595	1.416				0.825	0.886	0.665
Sustainability Practices	SP.1	3.38	0.786	-0.19	-0.464	0.834			
	SP.2	4.44	0.607	-0.858	1.150	0.885			
	SP.3	4.40	0.520	0.106	-1.264	0.819			
	SP.4	4.18	0.755	-0.595	-0.148				
		4.098	1.698				0.802	0.883	0.716
Sustainability Commitment	SCom.1	4.85	0.372	-2.268	4.118	0.891			
	SCom.2	4.90	0.307	-2.597	4.790	0.906			
	SCom.3	4.31	0.724	-0.777	0.153	0.696			
	SCom.4	4.63	0.552	-1.165	0.379	0.716			
		4.670	1.146				0.817	0.881	0.653
New Product Development	NPD.1	4.76	0.483	-2.148	5.632	0.833			
	NPD.2	4.67	0.514	-1.147	0.222	0.869			
	NPD.3	4.59	0.504	-0.466	-1.497	0.795			
	NPD.4	4.51	0.558	-0.565	-0.737	0.797			
		4.630	1.425				0.842	0.894	0.679

Source: Prepared by the researchers according to statistical analysis.

To address the discriminant validity, Table 3 encapsulates the AVE's square root of each construct which is shown to be greater than the inter-constructs correlations. Thus, the discriminant validity is achieved.

Table (3)
Construct correlations and square root of average variance extracted

	Mean	SD	SC	SP	SCom.	NPD
SC	4.595	1.416	(0.815)	0.673	0.625	0.403
SP	4.098	1.698	0.673	(0.846)	0.771	0.480
SCom.	4.670	1.146	0.625	0.771	(0.808)	0.432
NPD	4.630	1.425	0.403	0.480	0.432	(0.824)
Note: AVE's Square roots are shown in diagonal. P value < 0.001.						

Source: Prepared by the researchers according to statistical analysis.

4.2. Structural model and hypotheses testing

Table 4 reveals the results of the study's hypotheses. Effect sizes (f^2) were used to measure the degree of impact of independent latent variable on the dependent variable. The following formula was used to calculate the effect size of each path coefficient.

Table (4)
The Path coefficients

H	Exogenous Variables	Endogenous Variables	Path Coefficients	P - Value	Results
Control Variables					
	Firm Size	NPD	0.011	0.198	Non-Significant
	Firm Age	NPD	0.021	0.317	Non-Significant
	Manager's Qualifications	NPD	0.047	0.266	Non-Significant
	Manager's Experience	NPD	0.032	0.328	Non-Significant
H1	SC	NPD	0.330	<0.001	Supported
H2	SP	NPD	0.270	<0.001	Supported
H3	SCom.	NPD	0.355	<0.001	Supported

Source: Prepared by the researchers according to statistical analysis.

According to Cohen (1988), the values of effect sizes might be 0.02, 0.15, and 0.35 which indicates that, respectively, the predictor latent variable's effect on an endogenous variable is small, medium, or large. The effect size was greater than medium for the association between sustainability culture and new product development ($f^2 = 0.178$), while it was below medium for the relationship between sustainability practices and new product development ($f^2 = 0.128$). Finally, the effect size for the association between commitment to sustainability practices and new product development was also above medium ($f^2 = 0.201$). As expected, the results showed that hypotheses H1a, H1b and H1c were accepted. Specifically, It is clear that sustainability culture has a significant positive impact on new product development ($\beta = 0.330$, $p = 0.011$). In addition, a significant positive effect existed between sustainability practices and new product development ($\beta =$

0.270, $p = 0.031$). Furthermore, the results revealed that commitment to sustainability practices significantly and positively affects new product development ($\beta = 0.355$, $p = 0.006$). Moreover, results revealed that the control variables (firm size, firm age, manager's qualifications, and manager's experience) are insignificant and have no impact on new product development ($\beta = 0.011$, $p = 0.198$), ($\beta = 0.021$, $p = 0.317$), ($\beta = 0.047$, $p = 0.266$), ($\beta = 0.032$, $p = 0.328$), respectively.

5. Discussion

This study investigated the association between sustainability orientation (sustainability culture, sustainability practices and commitment to sustainability practices) and new product development. The study results revealed that sustainability culture is significantly and positively related to new product development. Clearly, the integration of sustainability values and ideas into the organizational culture is crucial to the development of new products that reckon with sustainability concerns. Sustainability cultures develop a working atmosphere in which day-to-day activities have a sustainability focus and consequently organizational decisions are based on a triple bottom line namely; environmental, social and economic stances rather than merely an economic perspective. In addition, the study showed that sustainability practices positively and significantly influenced new product development. Once sustainability culture is integrated into the grand business philosophy of the organization as a strategic standard, it is more likely to instigate the implementation of sustainability practices in terms of integrating environmental and social issues into internal operational plans, programs and practices. Implementing such sustainable business activities reflects the extent to which sustainability is embedded as a strategic norm in the organization's culture, which produces a leading vision for sustainable benefits that were not available in traditional supply chains. Thus, sustainability practices ultimately leads enterprises to change their strategy of

managing products, services, technologies and business models; including professional development of employees, the management of supply chains and new product development. In other terms, sustainability practices plays a pivotal role in the organizational innovation development. This is consistent with previous literature, the benefits of corporate's sustainability practices involve profits, competitive advantage, influence of stakeholders, regulations, worries about reputation, environmental protection and organizational change (Ranganathan & Willis, 1999; Daily & Walker, 2000; Van Marrewijk & Werre, 2003; Dunphy et al., 2003). Similarly, Claudy et al. (2016) argued that companies that are orientated towards sustainability, are more likely to find innovative solutions to environmental and social problems. This leads to improved efficiency, superior quality products and greater customer value, and consequently driving success in new product development (Hart, 1995; Porter & van der Linde, 1995b). Furthermore, commitment to sustainability practices was found to have a significant impact on new product development. Commitment to sustainability practices reflects how far a firm enjoys the real benefits of being proactive in lowering the negative environmental impacts of business activities. Thereby, commitment to sustainability practices represents the organizational embodiments of the awareness, the dedication and the commitment of a firm to sustainability concerns, activities and programs. A firm is deemed to have such a high level of orientation and dedication to the protection of the society and the environment whilst implementing business activities triggered by an organization-wide sense of obligation and responsibility for the firm's activities and its potential impact on the environment. Thus, sustainability becomes evident in the cultures of organizations and their strategic structure, allowing firms to integrate sustainability in operational programs such as new product development. This is consistent with the study of Fiksel (2009), in consideration of new product development, a strong sustainability orientation allows the teams of new product development to eliminate inefficiencies related to product

characteristics (e.g. poisonous materials), product design (e.g. recycling design), or manufacturing procedures (e.g. power savings). Eliminating such inefficiencies is assumed to enhance profit margins for new product development and improve the return on innovation investment.

5.1. Theoretical and practical implications

Significantly, in agreement with Claudy et al. (2016), the major theoretical contribution of this study is that it confirms the relationship between the sustainability orientation and new product development. Specifically, this study are conducted within the scope of the SMEs namely; restaurants, in the context of developing countries for specific; indicating that sustainability orientation is of great significance for the food-service industry. The study contributes to the understanding of sustainability orientation as a new paradigm and investigated its impact on enhancing new product development. The results emphasized that sustainability orientation positively influences the development of new products. The study highlighted the importance of firm's sustainability orientation in combining social, environmental and economic dimensions alongside, which represents a wider perspective and a commonly acknowledged driver of new product development. Additionally, the efforts of a firm to overcome the trade-offs between environmental, social and economic objectives can be a source of innovation itself. This study provides significant practical implications that add value to future new product development research. New product development is widely considered as an important factor that contributes to organizational long-term competitive advantage. This study also presents significant practical implications and guidelines for restaurants' managers, marketers of food-service industry and researchers who are interested in sustainability orientation and new product development. *Firstly*, the study suggested that restaurant managers can improve their new product development (new menu-items) through enhancing their sustainability orientation. Nowadays, the economic and social conditions in the Egyptian food service industry necessitate the need for managers who have the ability

to manage environmental and social sustainability and incorporate the sustainability issues in restaurant operations and activities. *Secondly*, the study drew the attention of managers of restaurants to the vital role of sustainability orientation in enhancing the development of new products. Moreover, the study suggested that restaurants that are orientated towards sustainability, have greater probability in finding innovative solutions to environmental and social issues. This leads to improved efficiency, superior quality products and greater customer value, consequently driving success in new product development. Thus, the researcher suggests that managers of restaurants should adopt a sustainability orientation through the following:

- Reducing the negative impact of products on the environment.
- Being keen to take environmental concerns into account when designing new meals (i.e. reducing fat / sugar, reducing non-degradable plastic consumption, reducing carbon emissions, etc.).
- Concerning about the health and safety of staff.
- Adopting a culture of rationalizing resource consumption (i.e. saving energy, water consumption, etc.).
- Waste separation and dealing with specialized waste disposal companies.
- Selecting suppliers and partners based on sustainability criteria.

5.2. Limitations and future research

The current study has introduced useful theoretical and practical implications however, it also has some limitations to consider. *Firstly*, considering time and budget constraints, the current study used a sample of restaurants in Mansoura City. Therefore, the study suggests that future research can rely on larger samples from other Egyptian cities. *Secondly*, the current study employed a questionnaire to test research hypotheses and provide cross-sectional data. Accordingly, the results of the study do not give any sign regarding the changes in the research variables over time. Thus, future studies can benefit from a longitudinal study to examine the changes in new product development on the basis of the changes in sustainability orientation. *Finally*, the study uses a sample from restaurants in Egypt (i.e.

developing country). Thereby, future research that concentrate on developed countries can make significant contributions by contrasting their results with the results of the study. Furthermore, Future studies can use employees as a sampling unit rather than managers to examine their responses to the measures of restaurant sustainability orientation in terms of sustainability culture, practices and commitment, and the new product development (new menu-items).

Appendix 1

Sample sizes for different sizes of population at a 95 % confidence level (assuming data are collected from all cases in the sample).

Population	Margin of error			
	5%	3%	2%	1%
50	44	48	49	50
100	79	91	96	99
150	108	132	141	148
200	132	168	185	196
250	151	203	226	244
300	168	234	267	291
400	196	291	343	384
500	217	340	414	475

Source: Saunders et al. (2009)

Appendix 2

Measures used

Sustainability Culture (SC)
<i>How important are the following to your restaurant?</i>
<ol style="list-style-type: none"> 1. Reducing the negative impact of products on the environment. 2. Reducing carbon emissions. 3. Reducing non-degradable plastic consumption. 4. Concerning about the health and safety of staff. 5. Taking environmental concerns into account when designing new meals (i.e. reducing fat / sugar, reducing plastic consumption, etc.).
Sustainability Practices (SP)
<i>To what degree does your company do the following?</i>
<ol style="list-style-type: none"> 6. Adopt a culture of rationalizing resource consumption (i.e. saving energy, water consumption, etc.). 7. Waste separation. 8. Deal with specialized waste disposal companies. 9. Select suppliers and partners based on sustainability criteria.

Commitment to Sustainability Practices (SCom.)
<i>How far do you agree with the following?</i> 10. Environmental protection is part of business. 11. Practices are good for my business. 12. Practices helped to gain more customers. 13. Proud to do business in local community.
New Product Development (NPD)
<i>Relative to your top three competitors in the marketplace, please evaluate how well do you believe that your new products (menu-items) enjoy the following:</i> 14. Offers some unique features or attributes to the customer. 15. Provides a higher-quality or better design than other competing products. 16. Creates superior customer services accompanying the product. 17. Permits the customer to do a job or do something he or she could not do with what was available.

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